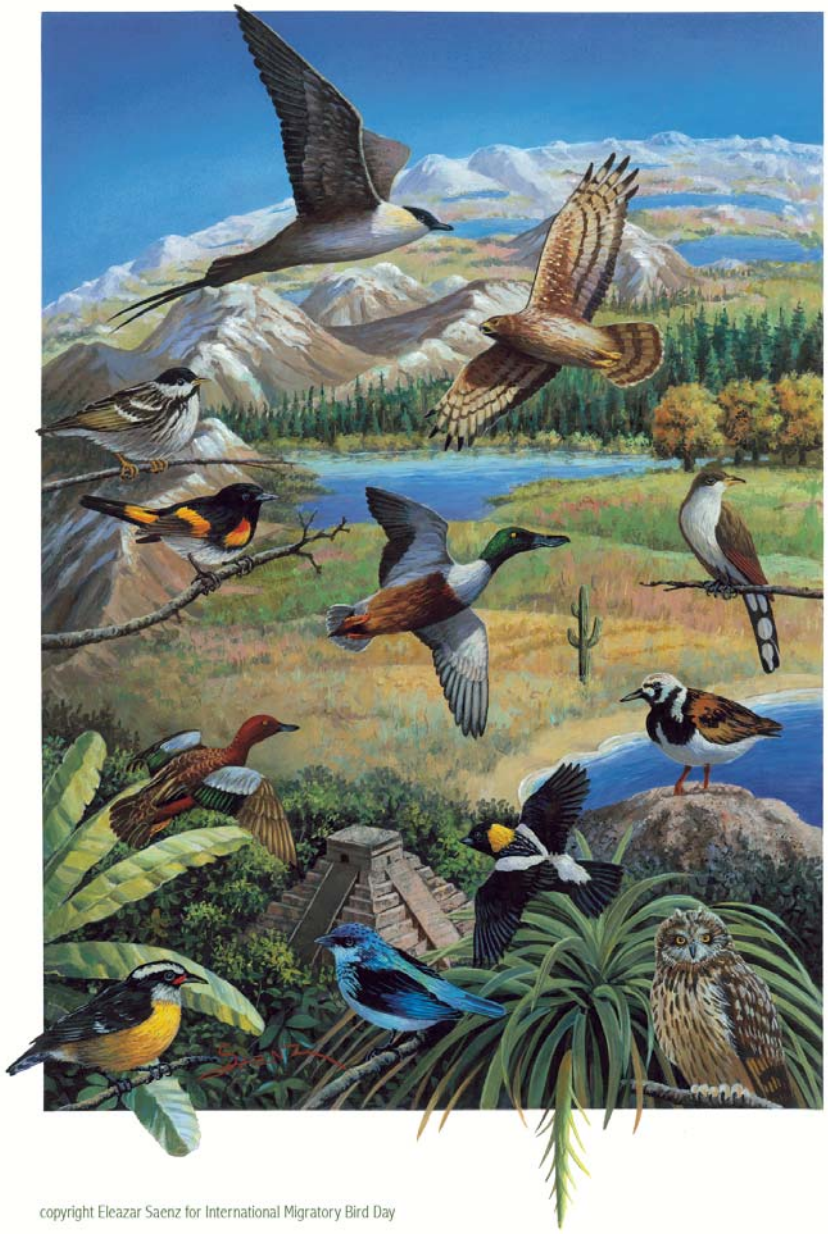
Fourth International Partners in Flight Conference



copyright Eleazar Saenz for International Migratory Bird Day

TUNDRA TO TROPICS

Connecting Birds, Habitats and People

Abstracts

13-16 February 2008

McAllen Convention Center, McAllen, Texas

Green Jay Sponsors

Great Kiskadee Sponsors

Altamira Oriole Sponsors

Plain Chachalaca Sponsors

Olive Sparrow Sponsors

www.PartnersInFlight.org

Tundra to Tropics: Connecting Birds, Habitats and People
4th International Partners in Flight Conference
13-16 February 2008, McAllen, Texas

Abstracts for Oral Presentations and Posters

* = Student Presentation; ° = Presenter

Aceituno°, F.

Estudio Preliminar de la Aviafauna de islas del Cisne. Francisco Aceituno. SERNA, Tegucigalpa, Honduras. fcoaceituno@hotmail.com

Las Islas del Cisne se encuentran localizadas en la parte Noroeste del Mar Caribe, a 250 Km. de tierra firme de Honduras. El archipiélago está constituido por el Cayo del Pájaro Bobo, la isla Grande y la isla Pequeña. Debido a la fragilidad de los ecosistemas de la isla, el gobierno la declaró Reserva Marina, y es considerada como un área de Prioridad para el Sistema Nacional de Áreas Protegidas.

Considerando estos antecedentes y tomando en cuenta que el último estudio de aves fue publicado por Raymond (1956), la Secretaria de Recursos Naturales y Ambiente y el Instituto Hondureño de Turismo, realizaron una gira, con el propósito de desarrollar un diagnostico preliminar sobre la situación de las especies de aves presentes en la isla.

Se realizaron transectos lineales a lo largo de la isla con longitudes variables, en sitios seleccionados utilizando criterios de tipos de vegetación y acceso a senderos, así mismo se hicieron conteo de nidos para las especies *Sula leucogaster*, *Sula sula* y *Fregata magnificens*, considerando, juveniles y adultos.

Se registraron; 9 órdenes, 18 familias, 37 espécies, también se registró una especie nueva para el país *Dendroica striata*. Además se contabilizaron 113 nidos, 120 polluelos, 182 juveniles y 87 adultos de *Sula leucogaster*. Por tal motivo la isla debe ser considerada de alta prioridad para la conservación, ya que esta es un importante sitio para la reproducción de *Sula leucogaster*, y un sitio de descanso para especies migratorias.

Alexander°, J. D.; Will, T.; Geupel, G. R.; Stephens, J. L.

Developing Effective Decision Support Tools for Bird Conservation. John D. Alexander, KBO, Ashland, OR and Prescott College, Prescott, AZ; Will, T., USFWS, Fort Snelling, MN; Geupel, G.R., PRBO, Petaluma, CA; Stephens, J.L., KBO, Ashland, OR. jda@KlamathBird.org

Partners in Flight is now setting a high priority on the effective transfer of science-based information to the communities of conservation actors that actually implement strategies that benefit birds. One of the greatest tragedies of bird conservation is that the impressive array of innovative decision tools often go unused by managers and educators. We argue that the development of effective decision support tools requires purposeful attention to the full extent of the delivery stream from planners to biologists and analysts to managers. What are the characteristics of effective and useful decisional support tools? What are the information gaps and where are the transfer points that require the development of new tools? We use a series of comparison matrices to describe and contrast existing decision support tools in order to highlight types of decisions, development process, source information, scope, scale, format, delivery mechanism, and audience. Our goal is to provide guidance in the selection of tools that match and clarify objectives, expand the use and appreciation of sound science, facilitate better decisions, provide for better tracking and evaluation, and mediate the adaptive improvement of bird conservation strategies.

Allen*, M. C.; Sheehan, Jr., J.; Master, T. L.

Potential Effects of Hemlock Decline on Acadian Flycatcher (*Empidonax virescens*) Populations in the Northeastern U.S. Michael Allen*, ESU, East Stroudsburg, PA; Sheehan, J., ESU, East Stroudsburg, PA; and Master, T., ESU, East Stroudsburg, PA. michaelcobballen@yahoo.com.

In the northeastern U.S., Acadian flycatchers (*Empidonax virescens*) are commonly associated with forested stream habitats dominated by eastern hemlock (*Tsuga canadensis*). Within this habitat, low eastern hemlock branches represent a preferred nest site, often supporting 90 to 100 percent of nests in a stand. Hemlock forests are currently threatened by an introduced insect pest, the hemlock woolly adelgid (*Adelges tsugae* Annand), which defoliates and kills trees in four to ten years. We established study sites in 11 hemlock ravines in Pennsylvania with a range of infestation levels (from 0 to ca. 13 years infested). Sites were searched for Acadian flycatcher nests every three days over two breeding seasons, and pair density, nest survival, and productivity were calculated. Adelgid infestation was quantified using a standardized sampling protocol. We found 180 nests across all sites. At severely infested sites versus less-infested sites, pair density was approximately 3 times lower and hemlocks were less-preferred as nest sites. Results suggest that Acadian flycatchers are reflective of hemlock health and may be avoiding infested habitat due to a loss of suitable nesting sites. Future population declines are possible, especially in the Northeast where hemlock-association is most pronounced.

Alsop, III°, F. J.

Fifteen Years of Bird Identification Training Workshops and Techniques in the Southeast. Fred J. Alsop III, ETSU, Johnson City, TN. alsopf@etsu.edu.

In 1990, I attended a Southeastern Working Group regional meeting of Partners in Flight in McAllen Texas. PIF was in its early stages of organization and development. A central issue of that meeting was protocol establishment of monitoring techniques incorporating point counts for neotropical migratory breeding birds. I saw the training of the “person-on-the-ground” in bird identification as my niche to fill in this conservation movement.

In 1992 and 1993, I contracted with USDA Forest Service and sent 5 trained university students to Georgia to conduct point counts. I decided it would be more cost effective and important for long-term monitoring to train agency employees. In 1993, I organized and conducted the first in a series of field training bird identification workshops with 19 students over 11 days. Training focuses on identification of birds by sight and vocalizations. Essentially all training is conducted in the field between late April and June. Training sessions have varied from 2.5 to 12 days, in location, habitats covered, and techniques used. In

1994, regional "refresher" courses were added to bring trained participants up-to-speed in preparation for their season's point count censuses. To date private, state, and federal participants from10 states have been trained, workshops have been conducted in 9 states, for more than 42, 579 student-person hours of bird identification, resulting in thousands of point counts conducted.

Quince Años de Experiencia y Trabajo en la Enseñanza de la Técnica para Identificar Pájaros en el Sur Este de los Estados Unidos

En mil novecientos noventa, antendí un seminário regional del: Southeastern Working Group, titulado: "Compañeros de Vuelo", (Partners in Flight) (PIF), en McAllen, Texas. PIF estaba en su infancia, en organización y desarrollo; siendo el punto central de la asamblea: el protocolo para establecer los límites y las técnicas necesarias para identificar y contra los números de pájaros migratorios que reproducen y anidan en Norte America, pero que emigran a la zona tropical del Sur. Yo vi en este entrenamiento incipiente, mi oportunidad de llenar un gran vacío en este movimiento de conservación.

En 1992 y 1993, entré en un contrato con el Servicio Forestal USDA por medio del cuál, encargué a cinco estudiantes de la ETSU; versados en la materia, que vayan a la Universidad de Georgia, para hacer un censo de pájaros en la region indicada. Por último decidí que a lo largo sería mas económico, efectivo y mas práctico entrenar a los empleados de la misma agencia. En 1993 yo organizé y dirigí una serie de seminaries en los cuales los participantes identificaban pájaros en su ambiente natural, visualmente y por oído. En el primer seminario participaron 19 estudiantes y duró 11 dias. Esencialmente toda la enseñanza y entranamiento estan basadas en al experiencia práctica en el campo abierto, cada año la temporada comienza en abril y termina en junio. Las variantes en los Seminarios son: Duración: de dos días y medio a doce días. Localidad, area explorada. Y técnicas usadas: "Censo de Sitio" (Point Counts)*. En 1994, en preparación para el censo de la temporada, se añadieron unos cursos regionales, para refrescar la memoria de los participantes. Hasta la fecha, han habido participantes endorcrinados de 10 estados, de niveles privados, estatales y Federales. Por medio de seminarios conducidos en 9 estados, más de 42,579 estudiantes/ horas se han actualizado en la identificación y número de pájaros, resultando en miles de "Censo de Sitio" conducidos.

Altman°, B.; Casey, D.; Deberry, D.

Outreach and Habitat Management on Private Family Forest Ponderosa Pine Habitat for Regional Conservation of Cavity-nesting Birds. Bob Altman, American Bird Conservancy, Corvallis, OR; Casey, D., American Bird Conservancy, Kalispell, MT; Deberry, D., American Forest Foundation, Washington, DC; Dunleavy, L., American Forest Foundation, Washington, DC. baltman@abcbirds.org.

We are using multiple forms of outreach and habitat management to support a conservation project targeting private family forest landowners, ponderosa pine habitat, and three priority bird species associated with that habitat, Flammulated Owl, White-headed Woodpecker, and Lewis's Woodpecker, in Oregon, Washington, and Idaho. The outreach components include web and printed versions of an informational brochure, a landowner solicitation and application for participation, and the development of a Landowners Stories booklet to document and chronicle the stories of participants. The prescriptive habitat management and restoration activities being conducted at 4-6 sites include thinning, understory management, and an emphasis on snag creation and enhancement for the targeted cavity-nesting bird species. One strength of our approach is the ability of the non-governmental primary partners to provide project-level coordination across political and jurisdiction boundaries, and site-level partnerships with governmental agencies and private landowners within those same political and jurisdictional boundaries. As such, we feel the project provides an excellent model for efficient partnerships within the context of regional conservation. We anticipate using this project as a foundation for several follow-up efforts to expand the outreach and bird and habitat conservation in ponderosa pine forests.

Altman°, B.; Stockenberg, E.; Green, M.; Alexander, J. D.; Stralberg, D.

Pacific Coast Joint Venture Population Objectives for Oak Habitats. Bob Altman, ABC, Corvallis, OR; Stockenberg, E., USFWS, Portland, OR; Green M., USFWS, Portland, OR; Alexander, J., KBO, Ashland, OR; Stralberg, D., PRBO, Petaluma, CA. baltman@abcbirds.org

The Partners in Flight landbird continental population objectives have stimulated the need to quantify the ability of regional landscapes to contribute to the continental objectives. Within the Pacific Coast Joint Venture, we are conducting bird-habitat and geospatial modeling and analyses in oak habitats to establish regional population objectives for a suite of 22 oak-associated bird species. The process we are using is based on the premise that regional population objectives need to be realistic within the context of habitat capacity rather than idealistic and determined from other sources (e.g., the continental objectives derived from BBS trends). Two important reasons for this approach are the need for efficiency in our conservation actions, and the need to ensure that land managers consider the objectives reasonable enough to initiate actions to meet the objectives. Our process includes an assessment of both current and future projected habitat which results in a population objective that is an output of the modeling and analyses that is the difference between current and future habitat. Projecting future habitat capacity is determined using input from land managers, ecologists, etc. on known and suspected changes that are likely to occur in land use and land management. This provides one of the strengths of the process – engaging land managers in the development of the objectives rather than them receiving the objectives from an outside source.

Arnold°, A. J.; Ballard, B. M.; Langshied, T. M.

Terrestrial Habitat Use and Chronology of Migrating Birds in Southern Texas. Arlene Arnold, CKWRI, Kingsville, TX; Ballard, B. M., CKWRI, Kingsville, TX; Langshied, T.M., CKWRI, Kingsville, TX. arleeniebird@sbcglobal.net.

Southern Texas is an important corridor for migrating birds. Most of this region is undeveloped presumably providing large quantities of stopover habitat. However, there is significant interest to develop much of the region. Therefore, we need to know which habitats are most important to migrating birds. The purpose of this study is to gain baseline information on habitat use during bird migration to minimize negative impacts on birds migrating through southern Texas due to future development. The objectives of this study are to: (1) document use of terrestrial habitats by migrant birds in southern Texas, (2) identify important stopover habitats and (3) assess species specific chronology of migration through southern Texas. Habitats were delineated first by physiognomic classes, then by dominant woody plant spe-

cies. Ten transects in each of ten habitat types were surveyed for bird abundance during spring and fall in 2006 and 2007. Preliminary analysis of data from 2006 showed total species richness was highest in oak islands, and lowest in grasslands. When complete, this study will indicate which habitats are of priority to migrating birds, and the information can be used to help guide future management and development decisions.

El uso del hábitat terrestre y la cronología de aves migratorias en el sur de Tejas.

El sur de Tejas es considerado un corredor para aves migratorias. La mayor parte de esta región no ha sido desarrollada y presumimos que provee una gran cantidad de hábitat de reabastecimiento. Sin embargo, existe un gran interés por desarrollar la región. Por esto, necesitamos conocer cuáles son los hábitats más importantes para las aves migratorias. El propósito de este estudio es adquirir información básica sobre el uso de hábitat durante la migración de aves para así minimizar los impactos negativos que pueda crear el desarrollo del sur de Tejas. Los objetivos de este estudio son: (1) documentar el uso de hábitat terrestre por aves migratorias, (2) identificar áreas de reabastecimiento y (3) evaluar la cronología de migración especie-específica sobre el sur de Tejas. Los hábitats fueron primeramente delineados por clases fisonómicas y después por especies dominantes de plantas leñosas. Censamos diez transectos en cada uno de los diez tipos de hábitat para estimar la abundancia de aves durante la primavera y el otoño de 2006 y 2007. Los análisis preliminares de 2006 muestran que la mayor riqueza de especies se encuentra en parches de encinos y la menor en pastizales. Esperamos que cuando culminemos este estudio podamos indicar cuáles hábitats son importantes para las aves migratorias y a su vez esta información puede ser usada para tomar dediciones de manejo y para el desarrollo de esta región.

Ashenhurst, A.; Hannon°, S. J.

Effects of Seismic Lines on the Abundance of Breeding Birds in the Kendall Island Migratory Bird Sanctuary, N.W.T., Canada. Amber Ashenhurst, Univ. Alberta, Canada; Hannon, Susan J., Univ. Alberta, Canada. sue.hannon@ualberta.ca.

Increases in oil and gas exploration and extraction are planned in the Canadian Arctic, including in the Kendall Island Migratory Bird Sanctuary, N.W.T. Various studies have shown impacts of seismic lines on vegetation, but the effects on bird abundance in the Arctic are poorly known. We evaluated the impact of new (0.5-1.5 years old) and old (10-35 years old) visible seismic lines on abundance of breeding passerines (savannah sparrow (*Passerculus sandwichensis)*, Lapland longspur (*Calcarius lapponicus)*, common redpoll (*Carduelis flammea)*, American tree sparrows *(Spizella arborea*)) and red-necked phalarope (*Phalaropus lobat+us)* in upland tundra, low-centre polygon and sedge/willow habitat. Effects on abundance were not statistically significant for most groups of birds along new seismic lines, although the trend in most habitats was for more birds on reference lines. Significant impacts were found for passerines grouped in upland tundra and for savannah sparrow in sedge/willow. The latter effect was possibly due to standing water along the line, but this was not significant the following year. Abundance of passerines was lower on old seismic than reference transects in upland tundra and low-centre polygon habitat, except for Lapland longspurs in upland tundra. Lines created 10-30 years ago have persistent vegetative changes and this appears to have reduced bird abundance. Although we did not plot individual territories, birds were seen crossing the seismic lines and sometimes perched on them, suggesting that they were not avoiding the line altogether. Rather, they may have increased territory size to compensate for vegetative changes along the lines.

Les Effets de l'exploration Sismique sur les Oiseaux Migrateurs Nicheurs au Refuge d'Oiseaux de l'île Kendall, Territoires de Nord-Ouest, Canada.

Une augmentation dans l'exploration et l'extraction de pétrole est planifiée pour l'Arctique canadien, entre autres dans le Refuge d'oiseaux de l'île Kendall, Territoires du Nord-Ouest. Plusieurs études ont démontré les effets de l'exploration sismique sur la végétation, mais leurs récupercussions effets sur l'abondance des oiseaux dans l'Arctique sont méconnus. Nous avons évalué l'impact des rècentes (0,5-1,5 ans) et vieilles (10-35 ans) lignes sismiques sur l'abondance des oiseaux migrateurs nicheurs (Bruant des prés (*Passerculus sandwichensis*), Bruant lapon (*Calcarius lapponicus*), Sizerain flammé (*Carduelis flammea*), Bruant hudsonien (*Spizella arborea*) et Phalarope à bec étroit (*Phalaropus lobatus*)) dans les diffèrents habitats: toundra alpine, sols polygonaux, et des habitats laîche/saule. L'effet sur l'abondance n'état pas statistiquement significatif pour la plupart des groupes d'oiseaux le long des nouvelles lignes séismiques, bien que la plupart des habitats demontraient une tendance pour un nombre d'oiseaux plus élèvé sur les lignes de rèférence. L'effet a été trouvé significatif pour les passerines en toundra alpine et pour le Bruant des prés dans les habitats laîche/saule. Ce dernier était probablement dû à l'eau coulant sur la ligne, et n'était pas significatif l'année suivante. L'abondance de passerines était inférieure sur les vieilles lignes sismiques que sur les transects de référence dans la toundra alpine et sur les sols polygonaux, excepté pour le Bruant lapon dans la toundra alpine. Les lignes qui ont été créées il y a 10-30 ans ont souffert des changements végétatifs persistants et ceci a réduit l'abondance des oiseaux. Bien que nous n'ayons pas délimité les territoires individuels, des oiseaux ont été vus croisant les lignes sismiques et étant parfois même perchés sur elles,suggérant qu'ils ne les évitent pas complètement. Plutôt, ils ont pu avoir augmenté la taille de leur territoire pour compenser les changements végétatifs le long des lignes.

Asmus Hersey°, K.

Predicting Long-billed Curlew Occurrence in Central Utah. Kimberly Asmus Hersey, UDWR, Springville, UT. kimberlyasmus@utah.gov.

The long-billed curlew is a Utah PIF priority species and a Tier II species in our Wildlife Action Plan. Immediate conservation needs include information on distribution and population trends, therefore I developed and field tested a multivariate habitat model for curlews in central Utah. I used breeding locations from the Utah Natural Heritage database as training points to identify suitable conditions based on 7 GIS habitat layers. Those data were used to calculate Mahalanobis distance (D^2), a statistical measure of dissimilarity, for all cells in the 60 000 km^2 study area. I tested model performance by conducting distance-sampling surveys at random sites stratified by D^2 value. I detected long-billed curlews on 14 of 50 transects (28%) with 75 birds observed. Logistic regression results showed the average D^2 value of a transect was related to the presence of curlews (X^2 = 8.14, P = 0.004). I calculated population estimates based on the probability of detecting curlews at a given D^2 value and density estimates from field surveys. I estimated 7 119 (4 496–9 742, 95% CI) long-billed curlews in the study area when assuming constant density and 6 203 (2303–11 893, 95% CI) when density varied with D^2 value. The model will allow managers to predict the likelihood of long-billed curlews occurring at a site,

identify important habitat areas, generate population estimates, and monitor curlew population trends in Utah.

Aucca Chutas°, C.

Community Support and Planning for Effective Action for Birds in Peru. Constantino Aucca Chutas, ECOAN, Peru.caucca@ecoanperu.org .

The Asociacion Ecosistemas Andinos (ECOAN) mission is to assist rural communities in conservation because ultimately they manage their natural resources that affects birds, which is our ultimate aim. In the High Andes (3600-5000 m), it is almost impossible to say to someone "Do not use the forest", as their survival depends on firewood. Faced with this need, ECOAN has developed a program designed to create incentives and benefits to more than 1700 families in 19 communities in southeast Peru. The benefits provided to the communities will ensure the protection in the medium term of threatened species, such as Royal Cinclodes and other specialists through creating Private Conservation Areas at *Polylepis* woodlands. In a similar experience in northern Peru, where massive deforestation for timber and cattle ranching dominates, ECOAN has implemented a campaign for restoration and environmental education, involving many communities and authorities in order to protect the Marvelous Spatuletail, Long-whiskered Owlet, Cerulean Warbler, and other threatened resident and migratory species. ECOAN has also established Ecological Easements, Conservation Areas and incentives for private conservation. Without the support of rural communities for these conservation initiatives, the survival of threatened birds and their unique habitats are at risk.

Planificación y Soporte Comunitario para una Acción Efectiva en la Conservación de las Aves en Peru.

La Asociacion Ecosistemas Andinos (ECOAN), respondiendo a su misión institucional, cree e involucra a las Comunidades Campesinas (CC) en el proceso de Conservación, porque al final serán ellos los que conserven sus recursos, su medio ambiente y con esto a las aves que es nuestro fin supremo. En las CC alto andinas (3,600 – 5000 m), es casi imposible decir a una persona, "No uses el bosque", ya que los locales necesitan de la leña para sobrevivir. Frente a esta necesidad ECOAN en el SE del Perú desarrolla diferentes acciones destinadas a generar incentivos y beneficios a más de 1700 familias en 19 comunidades. Los beneficios que les generan estas acciones a las comunidades, permitirán en el mediano plazo proteger y garantizar la existencia de la especies de nuestro interés tales como *Cinclodes aricomae* y otras especialistas de estos bosques del genero *Polylepis;* en este proceso se está implementando Áreas de Conservación Privada. La misma experiencia se da en el Proyecto Norte Peruano donde por prácticas humanas de implementación de ganadería y agricultura se ha deforestado extensivamente los bosques. Se ha implementado una campaña agresiva de restauración y educación ambiental, involucrando a muchas comunidades y autoridades con el fin de proteger *Loddigesia mirabilis, Xenoglaux loweryi, Dendroica cerulea*, y otras especies amenazados. Para lo cual se establecieron Servidumbres Ecológicas, Áreas de Conservación Privada y Concesiones para Conservación. Estas iniciativas no podrán subsistir si no se tienen el compromiso de las Comunidades Campesinas en protegerlas.

Auer*, M. T.

**Mapping Data-specific Avian Distributions Utilizing Cartographic Point Aggregating Generalization Operators in a Multi-Scale Framework. ***M. Thomas Auer, Penn State University, PA. mta138@psu.edu.

In mapping range distributions of avian species, there has been a historic trend to manually draw boundaries utilizing varied resources, including expert knowledge and generalized assumptions. This older technique is in opposition to utilizing one unified dataset, which until recently has been largely unavailable for use. The focus of this project looks to move the known mapping methods of distribution ranges from arbitrary to actual, looking to use only existing data sources. While some previous work has tested digital methods for visualizing distributions, this project provides an overview of historical manually-created maps. Relative to this project is a desire to map the extent of migration routes, a facet of distribution mapping that has rarely been attempted. The Rufous Hummingbird (*Selasphorus rufus*) is a suitable example for display at an exceptionally small scale, considering the extent of its autumnal migration to wintering grounds on both the North and South American continents. Public data, downloaded from the Avian Knowledge Network (AKN), provides a good base for testing cartographic generalization operators in creating ranges of avian species for use in multi-scale databases. Within this project, thorough exploration and critique of point aggregation operators provides a basis for completing this work and yields suggestions regarding possible, more improved methods for generalizing points. The resulting distributions and framework are relevant to providing multi-scalar representation schema to conservation managers in need of contextualized, temporally relevant species occurrence information.

Avery°, M.; Barras, S. C.; Savard, J.-P. L.; Hofmann, G.

From Pest to Conservation Priority: Changing the Perception and Management of a Blackbird. Michael L. Avery, USDA, Gainesville, FL; Barras, S.C., USDA, Moseley, VA; Savard, J.-P.L., Environment Canada, Quebec; Hofmann, G., Stoneville, MS. michael.l.avery@-aphis.usda.gov.

As a pest species, the Rusty Blackbird *Euphagus carolinus* never really measured up. Although formerly very abundant, the Rusty Blackbird has no historical record as a crop depredating species, unlike several closely related species. For the Rusty Blackbird, it has been guilt through association. During winter in the southeastern USA, Rusty Blackbirds often roost with starlings, cowbirds, grackles, and other species that are considered pests. Roosting aggregations can exceed 1 million birds and create serious concerns for human health, aesthetics, and property damage. Although the Rusty Blackbird receives international protection under the Migratory Bird Treaty Act, this protection is qualified by rules promulgated in 1974 by the US Fish and Wildlife Service establishing a standing depredation order for blackbirds. This order allows killing of blackbirds, including Rusty Blackbirds, without a permit when they are "found committing or are about to commit depredations" or are aggregated so as "to constitute a health hazard or other nuisance." Recognition of the plight of the Rusty Blackbird and its designation as a species of conservation concern has created motivation to remove the Rusty Blackbird from the standing depredation order. We describe historical and current blackbird management activities in the US and assess how changing the Rusty Blackbird's status could impact on-going management programs.

Bagne°, K.; Finch, D.

Small-scale Response in an Avian Community to a Large-scale Thinning Project in the Southwest. Karen Bagne,

RMRS, Albuquerque, NM; Finch, D., RMRS, Albuquerque, NM. kebagne@fs.fed.us.

Avian populations were monitored using point counts from 2002 to 2007, before and after a 2,800-ha fuels reduction project. The study area was dominated by ponderosa pine and was within the Santa Fe Municipal Watershed near Santa Fe, New Mexico. Adjacent unthinned areas were also monitored as a reference for population variation related to other factors. Overall, the numbers of birds increased over time, but the increase was greater on treated areas than reference areas following treatment. For individual species there was also some response, but these effects generally only lasted one or two years and many species had no response despite the alteration of forest structure from greater than 1,240/ha (500 trees/acre) to approximately 190 trees/ha (77 trees/acre). Response varied by species and with time after treatment. For example, Hermit Thrush populations were consistently lower following treatments, while American Robins and Steller's Jays had lower populations on treated areas in only one year. Broad-tailed Hummingbirds were consistently more abundant on treated areas, while Pine Siskins were more abundant on treated areas in 2007 only. We suggest various factors that affect response to thinning, both in timing and magnitude, and discuss aspects of study designs that may mask changes.

Bagne°, K.; Purcell, K.

Lessons Learned from Prescribed Fire in Ponderosa Pine Forests of the Southern Sierra Nevada. Karen Bagne, RMRS, Albuquerque, NM; Purcell, K., PSW, Fresno, CA. kebagne-@fs.fed.us

Prescribed fire is a commonly used management tool in the fire-suppressed ponderosa pine forests of the Sierra Nevada. While fire returns an important ecological element, effects of these fires on birds are largely unstudied. We present data from several studies for ponderosa pine forests in the southern Sierra Nevada. Following prescribed fire, we found that the largest losses of snags, including the large ponderosa pine snags preferred for nesting, were during the first application of fire after a long fire-free interval while turnover rates after the second fire application were similar to unburned areas. Oak species co-occur with ponderosa pines in these forests and are preferred as nesting substrates. Recruitment of both oaks and pines is low because of closed-canopy conditions resulting from fire suppression. Burning may alter habitat suitability, thus leading to post-fire changes in habitat use. We found few changes in territories used by a resident species following prescribed fire. During fire applications, direct mortality of eggs and nestlings is of concern. We documented little mortality and observed continued breeding activities during burning. Overall we found few negative impacts and found evidence that essential habitat components such as oaks and large ponderosa pines, may depend on reintroducing fire into the system. Managers may be able to reduce impacts by protecting preferred nesting snags and adjusting timing in relation to breeding activities.

Baicich°, P. J.

A Birding Trails Policy Perspective: Looking at the Gaps. Paul J. Baicich, Oxon Hill, MD. paul.baicich-@verizon.net

Birding-trail efforts across the U.S., starting in Texas in the early 1990s and spreading from coast to coast, have been highly successful. They facilitate constructive ecotourism, conservation, and education. But they are also currently handicapped by a lack of at least two elements: 1. a coherent policy aimed at Federal Road funding that might be bird-friendly, and 2. current bird-compatible road coverage for the places, quite literally, "between the official stops" on the routes. This presentation will examine the meaning and implications of these two missing features.

Una Perspectiva para la Administración de los Senderos de Observación de Aves: Identificando lo que Falta.

Los senderos para la observación de aves han tenido mucho éxito a lo largo de los Estados Unidos de Norte América, comenzando en Texas a principios de los 1990s y extendiéndose de costa a costa. Los senderos facilitan el ecoturismo constructivo, la conservación y la educación. Sin embargo, también están siendo amenazados por la falta de por lo menos dos cosas:1) una política coherente apuntada a la financiación de rutas Federales que sean amigables para las aves, y 2) una cobertura actual que sea compatible con la presencia de aves en los sitios que se encuentran literalmente "entre las paradas oficiales" en las rutas. Esta presentación examinará el significado y las implicancias de estas dos características faltantes.

Baillie°, S.R.

Integrated Population Monitoring in the United Kingdom. Stephen Baillie, British Trust for Ornithology, UK. stephen.baillie-@bto.org

The BTO's Integrated Population Monitoring programme aims to identify declining populations that require further investigation, to help to diagnose the demographic and environmental causes of such declines and to identify species or environmental processes requiring conservation action. It is based of a suite of volunteer-based monitoring schemes including the BTO/JNCC/RSPB Breeding Bird Survey, the Nest Record Scheme, the Constant Effort mist-netting Sites Scheme, the Re-trapping Adults for Survival project and the BTO Ringing Scheme. The field and analytical protocols used by these schemes have been developed in a coherent way to support integration of the results. Trends and alerts are reported annually via the Breeding Birds in the Wider Countryside website (http://www.bto.org/birdtrends) and population trends are also used to construct multi-species indicators for particular species groups and habitats. These indicators have had a major influence on the UK government's policies in a number of areas. In combination with data from targeted surveys and intensive research projects the Integrated Population Monitoring Programme is increasingly being used to identify management prescriptions and to monitor species recovery. Key issues being addressed include farmland bird recovery, recent declines of some Palaearctic-African migrants and the impacts of climate change.

Ball*, J. R.; Bayne, E. M.; Machtans, C. M.

Energy Sector Edge Effects on Songbird Nest Fate and Productivity in the Boreal Forest of Western Canada. * Jeffrey R. Ball, Integrated Landscape Management Group, University of Alberta, Canada; Bayne, E.M., ILMG, UA, Canada; Machtans, C.M., ILMG, UA, and Environment Canada, Canada. jball@ualberta.ca .

The boreal forest of North America represents one quarter of the world's remaining intact forests and it is an important resource to nearly half of all North American birds. However, the recent growth in energy sector activity in Canada's western boreal forest is forever changing the face of this landscape. Of particular concern is the increasing numbers of seismic lines and pipelines. These linear features have no natural disturbance analogue and, although they are expected to alter conditions in the adjacent forest, their ecological footprint in the boreal is largely unknown. Songbirds are increasingly being recognized as effec-

tive indicators of ecosystem health and they feature prominently in many edge-related studies. Here we consider edge-related changes in habitat quality for nesting songbirds by monitoring nest fate and nest productivity with respect to edge proximity in two boreal landscapes of differing linear feature density. We discuss our results with reference to local and landscape-level edge effects, and to spatial and temporal variation in the nest predator community. We also consider the validity of using traditional abundance estimates to monitor the response of boreal songbirds to linear features.

Ball, J. R.*; Bayne, E. M.; Machtans C. M.

Boreal Songbird Nest Predators Caught on Tape! Jeffrey R. Ball, Integrated Landscape Management Group, University of Alberta, Edmonton, AB; Bayne, E.M., Integrated Landscape Management Group, University of Alberta, Edmonton, AB; Machtans, C., Environment Canada, Yellowknife, NT. jball@ualberta.ca.

Nest predation is the primary cause of reproductive failure in songbirds and declining numbers of songbird populations are often attributed to anthropogenic alterations of the local predation regime. It has been suggested, for example, that the diversity, density, or foraging behaviour of nest predators may respond positively to human activities, or that changed habitat conditions may make nests easier for predators to locate. However, our current conservation efforts are often hampered in part by incomplete or inaccurate knowledge of which predators are chiefly responsible for nest failure. This is true for the boreal forest where our current understanding of the nest predator community is based almost entirely on artificial nests, which have been criticised for not accurately reflecting the predation risk of real nests. We deployed infrared digital video cameras at active ground and shrub nests of boreal forest songbirds to identify the relative importance of each member of the nest predator community. We compare predator communities between real and artificial nests and discuss the uses and pitfalls of artificial nest data in songbird research.

Barnhill°, L. M.; Moskwik, M; Thom, T; Watson, C; Koches, J; Kilgo, J.

Methodology and Results of Ivory-billed Woodpecker Searches in South Carolina. Laurel Barnhill, SCDNR, Columbia, SC; Moskwik, M., TNC, Columbia, SC; Thom, T., NPS, Hopkins, SC; Watson, C., FWS, Charleston, SC; Koches, J., FWS, Charleston, SC; Kilgo, J., USFS, New Ellenton, SC. BarnhillL@dnr.sc.gov

In an effort to document the Ivory-billed Woodpecker's presence in South Carolina, a partnership was formed between 16 organizations and agencies, known as the South Carolina Ivory-billed Woodpecker Working Group. The member agencies and organizations shared information, resources, and provided funding for a statewide search beginning the winter of 2005-2006 and continuing through the winter of 2006-2007. In 2005-2006, 46 volunteers comprised the search team and efforts took place in Congaree National Park. In 2006-2007, a coordinator, a 4-person full-time field crew, and 31 volunteers were involved in the search and efforts took place in the Francis Marion National Forest, Woodbury Tract, and Congaree National Park. After two years of searching, no definitive evidence of the Ivory-billed Woodpecker's existence in South Carolina has been found. However, inconclusive kent-like calls, double knocks, and sightings have been reported by the official search effort, as well as by independent individuals over the last 2 years. Based on this evidence, a search will be conducted in South Carolina during the winter of 2007-2008.

Metodología y Resultados de las Búsquedas del Picamaderos Picomarfil en Carolina del Sur.

En un esfuerzo por documentar la presencia del picamaderos picomarfil en Carolina del Sur, se formó una asociación entre 16 organizaciones y agencias, conocida como el Grupo de Trabajo Picamaderos Picomarfil de Carolina del Sur. Las agencias y organizaciones participantes compartieron información, recursos y suministraron fondos para una búsqueda a nivel estatal a partir del invierno de 2005-2006 y que continuó hasta el invierno de 2006-2007. En 2005-2006, el equipo de búsqueda estaba conformado por 46 voluntarios, y la tarea se realizó en el Parque Nacional Congaree. En 2006-2007, un coordinador, un equipo de campo de tiempo completo de 4 personas y 31 voluntarios participaron en la búsqueda y la tarea se realizó en el Bosque Francis Marion, Woodbury Tract y el Parque Nacional Congaree. Después de dos años de búsqueda, no se ha encontrado ninguna prueba definitiva sobre la existencia del picamaderos picomarfil en Carolina del Sur. Sin embargo, el equipo de búsqueda oficial, así como personas independientes durante los 2 últimos años ha informado cantos parecidos a los kent, golpeteos dobles y avistamientos. Sobre la base de estas pruebas, en Carolina del Sur se realizará una búsqueda durante el invierno de 2007-2008.

Bartley*, G.

Making Connections for Conservation: Restoring the Coastal Dune Ecosystem of the Cordova Spit. Glenn Bartley, University of Victoria, Canada. rgbartley@gmail.com

Around the world human impacts to the environment have dramatically threatened global biodiversity. Among the organisms that have proven highly susceptible to these impacts are migratory birds. While threats to avian species come from a variety of cumulative impacts, habitat loss is the largest contributing factor. Addressing the needs of migratory birds will require a collaborative effort between groups and nations throughout entire migratory corridors. It is essential that the habitat areas that remain are adequately preserved and restored throughout the migratory habitat landscape.

In British Columbia coastal dune ecosystems are extremely rare ecosystems that have been heavily impacted by human interactions. The Cordova Spit represents one of the best examples of an intact coastal dune ecosystem in the province. This ecosystem represents a unique and fragile environment that offers vital habitat to a number of plants and animals that are at-risk in British Columbia – including dozens of species of migratory birds. The site also holds tremendous cultural significance for the Tsawout First Nations peoples.

This study seeks to work toward an ethno-ecological restoration plan that preserves this significant ecosystem and its avian inhabitants and that also revitalizes the unique cultural connection of the Tsawout peoples to the land.

Bayne°, E. M.; Ball, J.; Habib, L.; Machtans, C.; Mahon, L.; Schmiegelow, F.

Sustainability of Boreal Forest Bird Populations in the Face of Rapid Energy Sector Development: An Overview of Field Research and Habitat Modeling for the Western Sedimentary Basin. Erin Bayne, Univ. Alberta; J. Ball, Univ. Alberta; L. Habib, Univ. Alberta; C. Machtans, Environ. Canada; L. Mahon, Univ.Alberta; F. Schmiegelow, Environ. Canada. bayne@-ualberta.ca

The boreal forest of the Mackenzie river basin is one of the world's last great wildernesses. However, large-scale human transformation of this region is on the horizon. Massive energy reserves have brought unprecedented investment dollars that are rapidly changing the nature of this relatively pristine ecosystem. The impacts this is having on bird populations in the area itself and continent wide are not well understood. We will discuss three field studies aimed at understanding the relative importance of: 1) habitat loss by all types of energy sector activity; 2) habitat fragmentation by linear features, 3) and noise impacts created by industrial facilities. Changes in bird abundance near energy sector facilities and the behavioral mechanisms (nesting success, pairing success, intra-specific competition) causing such changes will be examined. Results from model simulations will be used to examine which mitigation strategies are likely to be most successful for conservation of boreal forest songbirds in the face of this rapid change.

El bosque boreal del lavabo del río de Mackenzie es uno yermos pasados del mundo de los grandes. Sin embargo, la transformación humana en grande de esta región está en el horizonte. Las reservas masivas de la energía han traído los dólares de inversión sin precedentes que están cambiando rápidamente la naturaleza de este ecosistema relativamente prístino. Los impactos que esto está teniendo en las poblaciones en el área sí mismo del pájaro y anchos continentes no están bien entendidos. Discutiremos tres estudios en el campo dirigidos entendiendo la importancia relativa de la pérdida del habitat por todos los tipos de la actividad de sector de energía, fragmentación del habitat por las características lineares, y el ruido afecta creado por las instalaciones industriales como pájaros cantantes boreales potencialmente de afectación del bosque de los factores. Los cambios en abundancia del pájaro cerca de las instalaciones y de los mecanismos del comportamiento (éxito del sector de energía del nesting, apareando éxito, la competición intraespecífica) causando tales cambios serán discutidos. Los resultados de las simulaciones modelo serán utilizados para examinar que las estrategias de la mitigación son probables ser las más acertadas para la conservación de los pájaros cantantes boreales del bosque frente a este cambio rápido.

Beachy*, T. A.;Welton, M. J.; Buehler, D. A.

A Habitat Model Predicting Cerulean Warbler (*Dendroica cerulea*) Distribution in Central America. Tiffany A. Beachy, University of Tennessee, Knoxville, TN; Welton, M.J., GCBO, Franklin, TN; Buehler, D.A., University of Tennessee, Knoxville, TN. tbeachy@utk.edu.

The range-wide population of the cerulean warbler (*Dendroica cerulea*) has been declining steadily for the last several decades, making it a priority species for conservation action. The cerulean warbler was listed as a Vulnerable Species by the International Union for the Conservation of Nature and Natural Resources in 2004. Much of the habitat loss that may be contributing to population decline has occurred in Central America, which encompasses part of the cerulean warbler's migration route. In an effort to predict suitable stop-over habitat for the cerulean warbler in Central America, we developed a habitat model for the region. We conducted surveys for ceruleans in 2004-2006 to develop the model. We used remotely-sensed climate, topographic, and land-cover data in conjunction with the dataset of Cerulean locations to calculate a Mahalanobis distance model using ArcView 3.2. This algorithm produces a reasonable model of the cerulean warbler's spring distribution in Central America. In April 2007, we used the model to identify potential stopover sites for cerulean warblers in Central America and conducted surveys at several of these sites. We plan to use the additional cerulean warbler locations collected this year to validate the model. With refinement this model may become a useful tool to identify potential cerulean warbler stop-over sites for protection in Central America.

Un Modelo de Hábitat para Predecir la Distribución del Chipe Cerúleo (*Dendroica cerulea*) en Centro América.

La población mundial del chipe Cerúleo ha declinado por las últimas cuatro décadas, haciéndolo una especie de prioridad para la conservación. El chipe Cerúleo fue designado una Especie Vulnerable por la Unión Internacional para la Conservación de la Naturaleza y Recursos Naturales en el 2004. La mayor parte de la pérdida del hábitat que posiblemente está contribuyendo a la declinación del chipe Cerúleo ha ocurrido en Centro América, que encuadra parte de su ruta de migración. Como un esfuerzo de predecir el hábitat adecuado para el chipe Cerúleo en Centro América, hemos desarrollado un modelo de hábitat para la región. Hicimos muestreos para los chipes en el 2004-2006 para construir el modelo. Usamos varias variables geográficas y capas del clima y la cobertura de bosque, junto con las localidades de Cerúleos coleccionados en el 2004-2006 para calcular un modelo de Mahalanobis Distance usando ArcView 3.2. Este algoritmo produce un modelo razonable para la distribución en la primavera del chipe Cerúleo en Centro América. En abril del 2007, usamos este modelo para identificar sitios que usa el chipe Cerúleo durante la migración por Centro América, e hicimos muestreos en varios de estos lugares. Planeamos usar las localidades adicionales de Cerúleos recogimos este año para validar el modelo. Con refinamiento, este modelo puede ser un instrumento útil para identificar los sitios potenciales para proteger el chipe Cerúleo.

Beardmore°, C. J.

Integration of the U.S. and Mexican Important Bird Areas as Sonoran Joint Venture Focal Areas and Their use for Development of Conservation Strategies. Carol J. Beardmore, USFWS-Sonoran Joint Venture, Phoenix, AZ; Wilbor, S.L., Tucson Audubon Society, Tucson, AZ; Supplee, V.C., Audubon Arizona, Phoenix, AZ. carol_beardmore@fws.gov.

Important Bird Areas have been adopted as the Focus Areas of the Sonoran Joint Venture. The Sonoran Joint Venture is a binational bird conservation partnership in a region that encompasses southern California and Arizona and four states in northwestern Mexico. IBAs are important for birds that breed or winter in the specialized habitats of this region as well as those that use the area for a migration corridor. The integration of IBAs into the Focal Areas has strengthened cross-border partnerships and awareness of the sites for science, outreach, and education. The SJV has facilitated cooperation among avian biologists from both countries that has led to the development of a regional Bird Conservation Plan and work on a Monitoring Program. We will discuss how IBAs direct attention to localities for conservation and monitoring in particular. The Santa Cruz River,

which crosses the border, will be discussed as an on-going case study of cooperation across the border.

Beardmore°, C. J.

Integrating the Monitoring Components of the Arizona State Action Plan, the Sonoran Joint Venture Bird Conservation Plan, and the Partners in Flight Coordinated Bird Monitoring Program. Carol J. Beardmore, USFWS-Sonoran Joint Venture, Phoenix, AZ. carol_beardmore@fws.gov

The Arizona State Action Plan was finalized in 2006 as was the Sonoran Joint Venture Bird Conservation Plan. Both plans have objectives and strategies that relate to bird monitoring. The shared birds and habitats of Arizona and the SJV area of southern Arizona and northwestern Mexico provide a connection that makes coordinating our monitoring efforts obvious and efficient. Coordination and communication are key to implementing monitoring in Arizona and northwestern Mexico. Similar priority species and species objectives evolved out of both planning processes. The concept of monitoring for adaptive management and to detect overall population trends was part of each plan. A Monitoring Needs Assessment was done for both efforts. Through participation in PIF Coordinated Bird Monitoring primarily at the Western Working Group Regional scale, we are making use of tools developed there and plan to contribute to regional and national CBM species population objectives. The presentation will discuss shared elements, overlapping program development, and the intended coordinated implementation of bird monitoring.

La Integración de los Componentes de Monitoreo del Plan de Acción del Estdo de Arizona, el Plan de Conservación de Aves de la Sonoran Joint Venture y el Plan de Monitoreo de Aves de Partners in Flight.

El Plan de Acción del estado de Arizona y el Plan de Conservación de Aves de la Sonoran Joint Venture fueron acabados en 2006. Ambos planes cuentan con objetivos y estrategias relacionadas con el monitoreo de aves. Los hábitats y aves compartidos entre Arizona y el área del sur de Arizona y el noroeste de México de la SJV brindan una conexión que hace obvia y eficiente la coordinación de nuestros esfuerzos de monitoreo. La coordinación y la comunicación son claves para implementar el monitoreo en Arizona y el noroeste de México. Emergieron especies prioritarias y objetivo similares en ambos procesos de planeación. El concepto de monitoreo para manejo adaptativo y para detectar las tendencias generales de la población es parte de ambos planes. Se hizo una Evaluación de las Necesidades de Monitoreo en ambos esfuerzos. A través de la participación en el Monitoreo de Aves Coordinado del PIF del Grupo de Trabajo del Oeste, principalmente en la escala Regional, estamos usando las herramientas que allí se desarrollaron y planeamos contribuir a los objetivos de población de especies de CBM a escala regional y nacional. La presentación discutirá los elementos compartidos, el translape en el desarrollo de los programas y la implementación del monitoreo de aves coordinado deseado.

Bednarz°, J. C.; Huss, M. J.; Benson, T. J.; Varland, D. L.

Status of Experimental Fungal Inoculations to Establish Heart-rot and Promote Cavity Nests and Wildlife Habitat in Managed Forests in Washington. James C. Bednarz; Huss, M.J.; Benson, T.J., Arkansas State University, Jonesboro, AR; Varland, D.L., Rayonier, Hoquiam, WA. jbednarz@astate.edu.

Because of short timber-harvest rotations, relatively few trees in managed forests are infected with wood-decaying fungi, which softens wood and enables excavation by primary-cavity nesters. A lack of woodpecker activity and resulting deficiency of available cavities limits the diversity and abundance of many wildlife species. We tested an experimental management approach wherein the red-belted conk (*Fomitopsis pinicola*), and blank controls were introduced into selected trees in 1997–1998 to enhance managed forests for woodpeckers. In 2006, we revisited 575 trees that were inoculated and inspected each tree for the presence of fungal growth and woodpecker activity. A significantly higher proportion of treatment trees displayed *F. pinicola* conks (0.200) and mycelia (0.073) than did control trees (0.004 conks, 0.012 mycelia). Also, western hemlocks (*Tsuga heterophylla*) had a higher proportion of conks (0.313) and mycelia (0.093) than Douglas-fir (*Pseudotsuga menziesii*) trees (0.064 and 0.048, respectively). Importantly, we observed more evidence of woodpecker excavations associated with the fungal inoculations (6.2% of trees) than at control trees (1.2%, P = 0.01). This pattern suggests that inoculations may enhance habitat for primary-cavity excavating birds over the long term. Although the incidence of woodpecker excavations of treatment trees was still relatively low 8–9 years after inoculation, we suggest that woodpecker use will likely increase as fungi develop in future years.

Estatus de Inoculaciones Experimentales para Pudrición de Árboles e Incremento de Anidadores de Cavidades y Vida Silvestre en Bosques Manejados en Washington.

Como consecuencia de rotaciones cortas de lotes de corte de madera, pocos árboles en bosques manejados son infectados con hongos descomponedores que ablandan y posibilitan la excavación de anidadores primarios en cavidades. La carencia de actividad de carpinteros y la deficiencia de cavidades disponibles limitan la diversidad de vida silvestre. Introdujimos el hongo del pino (*Fomitopsis pinicola*) en áreas seleccionadas en 1997–1998 para mejorar el hábitat para carpinteros. En el 2006 visitamos 575 árboles inoculados e inspeccionamos la presencia de crecimiento fúngico y actividad de carpinteros. Una proporción alta de los árboles tratados exhibió primordios de *F. pinicola* (0.200) y micelios (0.073) comparado con los árboles control (0.004 primordios, 0.012 micelios). El Hemlock del Pacifico (*Tsuga heterophylla*) mostró mayor proporción de primordios (0.313) y micelios (0.093) que el abeto de Douglas (*Pseudotsuga menziesii*) (0.064 y 0.048, respectivamente). Observamos más excavaciones de carpinteros asociada con árboles inoculados con hongos (6.2% de los árboles) comparado con árboles control (1.2%, P = 0.01). Esto sugiere que las inoculaciones pueden mejorar el hábitat para aves excavadoras de cavidades a largo plazo. Aunque la incidencia de excavaciones de carpinteros en árboles tratados fue baja en los 8–9 años posteriores a la inoculación, el uso por parte de carpinteros probablemente aumentará paralelo al desarrollo del hongo.

Beidleman*, C.

Park Flight Migratory Bird Program: Conserving Migratory Birds Through International Partnerships. Carol Beidleman, NPS,University of Arizona. Carol_Beidleman@partner.nps.gov

The Park Flight Program protects shared migratory bird species and their habitats in national parks and protected areas in the U.S., Latin America, the Caribbean, and Canada, through developing bird conservation and education projects and creating opportunities for technical exchange and cooperation. Park Flight is an award-winning partnership between the National Park Service (NPS), National Park Foundation, American Air-

lines, National Fish and Wildlife Foundation, and the University of Arizona. Assistance focuses in: 1) species monitoring, protection, and management; 2) interpretation, environmental education, and outreach.

Park Flight has funded projects in U.S. national parks, and in Mexico, Guatemala, El Salvador, Nicaragua, Honduras, Panama, Argentina, Brazil, Uruguay, Bahamas, and Grenada. In addition, Park Flight has implemented a program of technical assistance, including training workshops, personnel exchanges, and international internships. Park Flight has provided technical assistance from 15 experts to 7 Latin American countries and Grenada, and has hosted 45 international interns who implemented bird monitoring and education projects in U.S. national parks, including outreach to local Latino communities. Through this program NPS has broadened its involvement with other international bird conservation initiatives, including Partners in Flight.

Programa de Aves Migratorias de Park Flight: Conservando Aves Migratorias a Traves de Asociaciones Internacionales.

El programa Park Flight protege a especies de aves migratorias compartidas y sus hábitats en parques nacionales y áreas protegidas en USA, América Latina, Caribe y Canadá a través del desarrollo de proyectos de conservación, educación y la creación de oportunidades para intercambios técnicos y cooperación. Park Flight ganadora de premio, es una asociación entre el SPN, la FPN, AA, FPVS de los USA y la Universidad de Arizona. La asistencia consiste en: 1) monitoreo de especies, protección, manejo, 2) interpretación, educación ambiental, asistencia remota. Park Flight ha becado proyectos en parques nacionales de los EEUU y en México, Guatemala, El Salvador, Nicaragua, Honduras, Panamá, Argentina, Brasil, Uruguay, Bahamas, y Grenada. Ha implementado un programa de asistencia técnica, incluyendo talleres de entrenamiento, intercambio humano e internados internacionales. Park Flight ha proveído asistencia técnica de 15 expertos a 7 países Latinoamericanos y Grenada, y hospedado 45 internos internacionales realizando monitoreo de aves y proyectos educativos en parques nacionales en EEUU incluyendo asistencia remota a comunidades latinas locales. A través de este programa el SPN ha ampliado su relación con otras iniciativas internacionales de conservación de aves, incluyendo Compañeros en Vuelo.

Beingolea, M. O.°

Effects of Illegal Removal of Peregrine Falcon (*Falco peregrinus*) Individuals for Falconry and Biological Control on Populations in Central Peru. Oscar Beingolea M. bicolored@yahoo.com

Despite the fact that the Peregrine Falcon (*Falco peregrinus*) has been well-studied in North America, little is known about its life in the Neotropics. In this presentation I focus on migrant Peregrine Falcon (*Falco peregrinus tundrius* and ***Falco peregrinus anatum***) and resident populations (*Falco peregrinus cassini*) on the northwest coast of South America, specifically examining its habitat preference and occurrence and the consequences of illegal, localized removal of falcons for falconry and pest control in the central coastal region of Peru. Using data collected during banding surveys from 1988 to 1995, I will discuss the effects of removing Peregrine Falcons for falconry and for biological control on bird pests in a country that lacks adequate regulation and law enforcement in this area. Over the past few years, at least 30 falcons per year have been captured and removed from areas around the same survey areas used for banding. Recently, the birds-of-prey trade has been encouraged by a wide range of less experienced people attempting to do biological control on bird pests. Although there are only a few people offering this service, many of them use the illegal market as a main source for acquiring their raptors. In the situation of wild-caught falcons used for biological control, only about one third of the raptors appear to survive. In the last few years, the removal of Peregrine Falcons has been incessant around their main points of occurrence points inside Lima, particularly near human settlements; this seems to have reduced the chances of finding wintering adults in the 1,988 – 1,995 surveyed area.

Efectos de la Remoción Ilegal de Individuos de Halcón Peregrino (Falco peregrinus) para Cetrería y Control Biológico en sus Poblaciones del Centro de Perú.

A pesar de que el Halcón Peregrino (*Falco peregrinus*) ha sido bien estudiado en Norteamérica, poco se conoce sobre su vida en los países tropicales de América. En esta presentación yo me centralizo en el Halcón Peregrino migratorio (*Falco peregrinus tundrius y Falco peregrinus anatum*) y la población residente (*Falco peregrinus cassini*) en la costa noroeste de Sudamérica, específicamente examinando la preferencia de hábitat, ocurrencia y las consecuencias de la ilegal captura y remoción de halcones para cetrería y control de aves consideradas plagas en la región costera del Perú. Usados los datos colectados durante estudios de anillado entre 1,988 y 1,995, yo discutiré los efectos de la remoción de Halcones Peregrinos para cetrería y control biológico en un país que carece de regulación y aplicación de la ley en esta área. En los últimos pocos años, al menos 30 halcones por año han sido capturados y removidos de las mismas áreas inspeccionadas y utilizadas para anillar. Recientemente, el comercio de aves de presa ha sido impulsado por una mayor diversidad de gente inexperta intentando realizar control biológico en las aves consideradas plaga. Aunque solo hay un reducido número de personas ofreciendo este servicio, muchos de ellos utilizan el mercado ilegal como principal fuente para adquirir sus aves de presa. En el caso de las aves de presa utilizadas para control biológico solo un tercio de las aves parece sobrevivir. En los últimos pocos años, la remoción de Halcones Peregrinos ha sido incesante entorno a sus principales puntos de incidencia dentro de Lima, particularmente cerca de asentamientos humanos, este hecho parece haber reducido las posibilidades de encontrar adultos invernantes en el área utilizada para estudio entre los años 1,988 y 1,995.

Bennun°, L.; Burfield, I.; Fisher, I.; Fishpool, L.

Monitoring Important Bird Areas: BirdLife's Framework and its Implementation. Leon Bennun, BirdLife International, Cambridge, UK; Burfield, I.; Fisher, I.; Fishpool, L., BirdLife International. leon.bennun@birdlife.org.

Taking a standardized approach to monitoring Important Bird Areas across the world has many potential advantages, but also poses many challenges. These include the sheer number of sites involved, their range of ecological character, and a frequent lack of capacity and sustained resources for monitoring. BirdLife's IBA monitoring framework provides a simple yet robust approach that can be applied to any site and implemented at minimal cost. Using information from the field or remote sensing, overall scores are made for state (site condition), pressure (threats) and response (conservation action). These can be aggregated across sites at any scale, and presented through simple graphical indices. A web-based module of the World Bird Database has been developed to support the framework. Field data can be collected by citizen scientists, local conservation groups or site management authorities: institutionalisation of the work will often be essential for its success. IBA monitoring is now

planned or underway across much of the BirdLife Partnership of over 100 NGOs worldwide. The experience and lessons learned from pilot projects in Europe and Africa will be highlighted.

Benson*, T. J.; Brown, J. D.; Bednarz, J. C.

Video Identification of Predators at Swainson's Warbler Nests in Eastern Arkansas. Thomas J. Benson, Arkansas State Univ., Jonesboro, AR; Brown, J.D., Arkansas State Univ., Jonesboro, AR; Bednarz, J.C., Arkansas State Univ., Jonesboro, AR. thomas.benson@astate.edu

The Swainson's Warbler (*Limnothlypis swainsonii*), an uncommon inhabitant of bottomland hardwood forests, is a species of critical conservation concern in the southeastern U.S. Several studies have estimated nest success for this species and estimates from Arkansas (18–32%) are lower than elsewhere in the species' range. As most nest failures are attributed to predation, determining the identity and ecology of nest predators is essential for understanding patterns of predation and implementing effective conservation actions. In 2006 and 2007, we set up time-lapse infrared video cameras at 48 Swainson's Warbler nests, including 16 that fledged young successfully and 32 that failed. Of the failed nests, two fledged only Brown-headed Cowbird (*Molothrus ater*) young, six were trampled by deer (*Odocoileus virginianus*), a bear (*Ursus americanus*), or failed from unknown causes, one failed due to weather, three were abandoned, and the remaining 20 nests were depredated. We observed 31 predation attempts, including 12 by rat snakes (*Elaphe obsolete*), 10 by cowbirds, seven by hawks or owls, one by a Blue Jay (*Cyanocitta cristata*), and one by harvest spiders (Opiliones). Based on these data, we suggest that studies on the habitat use of rat snakes and cowbirds may allow managers to provide habitats that enhance Swainson's Warbler nest success. Specifically, management should focus on providing habitats that provide suitable nesting habitat for Swainson's Warblers while minimizing use by rat snakes and cowbirds.

Videos de Identificación de Depredadores de Nidos de la Reinita de Swainson en el Oriente de Arkansas.

La reinita de Swainson (Limnothlypis swainsonii), habitante poco común de los bosques ribereños, es una especie crítica para la conservación en el suroriente de Estados Unidos. Varios estudios han calculado el éxito de anidación para esta especie y los estimativos para Arkansas (18–32%) son más bajos que otros lugares del rango de la especie. La mayoría de nidos fallidos se atribuye a depredación; determinando los depredadores de nidos y su ecología es posible entender los patrones de depredación e implementar acciones de conservación. En el 2006 y 2007, instalamos cámaras de video en 48 nidos de la reinita de Swainson, incluyendo 16 con nidadas exitosas y 32 fallidos. De los últimos, dos produjeron volantones del tordo negro (Molothrus ater), seis derribados por venados (Odocoileus virginianus), un oso (Ursus americanus), o fallaron por causas desconocidas, tres fueron abandonados; los 20 restantes fueron depredados. Observamos 31 depredaciones incluyendo 12 por culebras (Elaphe obsolete), 10 por tordos negros, siete por águilas o búhos, uno por la urraca azul (Cyanocitta cristata), y uno por opiliónidos (Opiliones). Basados en estos datos, sugerimos que estudios sobre el uso de hábitat de culebras rateras y tordos negros puede permitir a los administradores de áreas protegidas proveer hábitats para incrementar el éxito de anidación de la reinita de Swainson. El manejo debe enfocarse en proporcionar hábitats adecuados para esta especie minimizando el uso por culebras rateras y tordos negros.

Berlanga°, H.; Rodríguez, V.; Oliveras, A.

The Mexican Bird Knowledge Network: AVESMX and AKN. Humberto Berlanga, CONABIO, México; Rodríguez, V., CONABIO, México; Oliveras, A., CONABIO, México. hberlang@xolo.conabio.gob.mx

CONABIO is the Mexican focal point for the clearinghouse mechanism for the Convention on Biological Diversity, and the national agency to coordinate gathering and distribution of information on biodiversity. CONABIO hosts also the national coordination of NABCI and presides its National Committee. The mission of CONABIO is to compile and systematize information through explore, document, study, manage and protect biological diversity and ways for its sustainable use. CONABIO is the house of the National Biodiversity Information System (SNIB), designed to provide government agencies, academic institutions and general public with quality information to raise awareness about the importance of biodiversity, to support decision making process and facilitate international collaboration.

NABCI coordination in México in close collaboration with Cornell Lab of Ornithology, and several national partners has developed the new internet portal AVESMX. This innovative web site as been built on the basis of several data sources, including the national IBAs and natural protected areas database that been recently reviewed, updated and validated; legal information, species assessment dataset, etc. with the purpose of establishing a relational bird information site about mexican bird species that will serve as the platform to create the mexican node of the Avian Knowledge Network (AKN). The knowledge of occurrence and distribution of bird species is continuously growing, specially for migratory species, but also for neotropical residents. Everyday new sources of avian information are increasingly available and the amount of information has grown to unprecedented levels.

Most of the elements and information in AVESMX has been generated with the support of several institutions and volunteer participation of hundreds of experts and professionals on mexican birds. We expect that AVESMX and AKN will operate as key hubs for distributed information to facilitate sharing, accessing and displaying quality data to improve bird conservation work across entire continent.

La Red de Conocimiento de las Aves de México: AVESMX y el AKN.

CONABIO es el punto focal para el Mecanismo Facilitador (CHM) del Convenio sobre Diversidad Biológica (CDB) y es la instancia gubernamental encargada de recopilar, almacenar y distribuir la información sobre biodiversidad de México. CONABIO es el hogar de la coordinación nacional de la Iniciativa para la Conservación de las Aves de Norteamérica (NABCI) y preside su Comité Nacional. La misión de CONABIO es compilar y sistematizar información a través de la búsqueda, exploración, documentación y manejo para la protección de la diversidad biológica, asi como sus formas de aprovechamiento sustentable. CONABIO mantiene el Sistema Nacional de Información de Biodiversidad (SNIB), que ha sido diseñado para proporcionar información de calidad al gobierno, la academia y al público en general para aumentar la conciencia y el conocimiento de la importancia y valor de la biodiversidad nacional, para e informar los procesos de toma de decisiones y para facilitar la cooperación internacional en materia de conservación.

La Coordinación de NABCI, México en estrecha colaboración con el Laboratorio de Ornitología de Cornell y muchas otras instituciones ha desarrollado el nuevo portal de Internet **AVESMX.** Esta innovadora herramienta ha sido construido y diseñado para manejar información de numerosas Fuentes de

información sobre aves de México y Norteamérica incluyendo la base de datos de las AICAs (IBAs), las áreas naturales protegidas, que recientemente fueron revisadas actualizadas y validadas; información legal (NOM 059); información sobre la base de datos del proyecto de evaluación del estado de conservación de las aves de México (species assessment), etc. con el fin de establecer un sitio de referencia relacional sobre las especies de aves mexicanas que sirva como plataforma nacional para crear el nodo de México para la Red de Conocimiento sobre las aves (Avian Knowledge Network, AKN). El conocimiento sobre la ocurrencia y distribución de las especies crece de manera permanente, especialmente en el caso de las especies migratorias, pero también, cada vez más para las especies residentes neotropicales. Cada día contamos con mas Fuentes nuevas de información y la cantidad de datos disponibles ha crecido a niveles sin precedentes.

La mayor parte de la información contenida en AVESMX ha sido generada, compilada, sistematizada y analizada con el apoyo de muchas instituciones y el trabajo voluntario y generoso de cientos de expertos y profesionales en las aves de México, tanto nacionales como extranjeros.

Esperamos que AVESMX y la AKN operarán en el futuro como centros de referencia para acceder a fuentes de información distribuida, de manera que faciliten la disponibilidad, acceso y las formas de compartir y presentar datos de calidad, para mejorar el trabajo de conservación de las aves en todo el continente.

Berlanga°, H.; Vidal, R. M.

Prioritizing and Assessing Important Bird Areas in Mexico. Humberto Berlanga, CONABIO/ NABCI México; Vidal, M., Pronatura. hberlang@xolo.conabio.gob.mx

Starting in 1997, México was one of the first countries in the Americas to initiate identifying IBAs through a participative process that involved government, academic institutions, scientist and conservationists. After almost 10 years, IBAs have become powerful tool a reference for a variety of planning and conservation purposes in México.

In 2005 with the support of the NMBCA and several partners, Conabio through the National NABCI Coordination has conducted a process for reviewing, updating, validating and prioritizing mexican IBA network. This process is also intended to produce consolidated information to update Birdlife's WBDB (world bird database with the involvement of (Pronatura-Birdlife) and to determine new conservation targets for birds and habitats in México.

We have conducted two national workshops during 2006 and 2007. In the first workshop we worked with experts from all the regions of the country in the revision to review and update the lists of species for each IBA and most of the federal natural protected areas and we performed a prioritization analysis using different criteria (bird biomes, latitude, all species and neotropical species).In the second workshop with the assistance of Birdlife International staff, we worked again with regional experts to review and update the IBA categories of all the IBAs based using current Birdlife criteria.

Additional information to continue the process will be gathering - updating information on current threats, local organizations, monitoring and conservation feasibility. Other activities include the publication of completely new internet portal with relational databases about mexican species and IBAs (www. avesmx), internet monitoring tools (averaves), links to AKN, coordination with other prioritization efforts such as KBAs network and links with the gap analysis currently being conducted by Conabio. Finally we intend to initiate the identification of new IBAs sites, publish a second IBA book for México and to initiate a permanent outreach campaign to promote the use of the database for conservation and educational purposes.

Bishop°, M.

The Effective Incorporation of Students and Volunteers in On-going Banding Studies. Mike Bishop. Alma College, Alma, MI, bishop@alma.edu

Students (high school, undergraduate and graduate) and the lay public, once exposed to banding, often are eager to continue their involvement at some level. While this can initially seem a boon to many personnel-starved field stations, it isn't without its potential pitfalls. Two major hurdles to be dealt with are ensuring the continued safe operation of the station for both birds and non-avian participants, and maintaining the integrity of the data being collected. This presentation will address methods used to incorporate the assistance of untrained (initially) individuals into the safe and productive operations of a typical constant-effort or MAPS type banding station. Topics covered will include: determining an individual's level of commitment, "safe" jobs for the untrained, the advantages of a training manual, the advantages of contracts for various levels of involvement, how and when to allow handling of birds, dealing with witnessed mortalities and injuries, involving participants in the work beyond data collection, and "firing" volunteers. Along with discussion of the aforementioned techniques the speaker will solicit audience members for other protocols being used successfully as well as critiques of those presented here.

Blancher°, J. P.

A Comparison of Species Assessment Methods Applied to Birds in Canada. Peter Blancher, Environment Canada, Ottawa, ON. Peter.Blancher@ec.gc.ca

Several different species assessment methods are currently applied to birds in Canada, each with somewhat different objectives and results. For example, IUCN criteria have been adopted as the method for classifying species as Endangered, Threatened, etc., for Canada's Species at Risk Act. A general assessment of species status is also published every 5 years, in part to prioritize species as candidates for detailed status assessments to determine species at risk status. And the major bird conservation initiatives for landbirds, shorebirds, waterfowl and waterbirds each identify species in need of management attention, with some differences in emphasis and criteria. Comparisons between these schemes will be used to highlight some of issues involved in species assessment here and elsewhere.

Boal°, C. W.

Research Needs to Better Understand the Influences of Wind Power Development on Wildlife in Texas. Clint W. Boal, USGS. Texas Cooperative Fish and Wildlife Research Unit, TTU, Lubbock, TX. clint.boal@ttu.edu

Texas has the highest installed wind energy capacity in the United States, with continued growth predicted for the future. Although it is an emission-free and renewable source of electrical power, wind energy is not without some environmental costs. Research is necessary to improve the understanding of environmental costs of wind energy and how to best mitigate those costs. Refined methodological approaches are necessary to accurately assess direct mortality rates. Research is also necessary to understand how placement and infrastructure of wind energy facilities influences wildlife and habitat. Some species may be intolerant of tall vertical structures, whereas installation of wind energy facilities may result in habitat protection for oth-

ers. Thus, the behavioral tolerances of wildlife species to the physical changes of habitat need to be investigated. Locations of facilities also influence impact assessments; sites on grasslands can be efficiently searched for wildlife mortalities whereas similar searches are impossible at offshore facilities. Finally little of the existing research has received adequate peer review or been made readily available to the scientific community or the public. Greater standardization and rigor in methodology and sharing and publication of research would facilitate both a better understanding of the costs and benefits of the industry and trust among stakeholders. Many of these issues will be focused on and discussed.

Bogart°, R. E.; Duberstein, J. N.; Slobe, D. F.

Strategic Communications and its Critical Role in Bird Habitat Conservation: Understanding the Social-Ecological Paradigm. Roxanne E. Bogart, USFWS, Essex Junction, VT; Duberstein, J.N., USFWS, Tuscon, AZ; Slobe, D.F., PLJV, Lafayette, CO. Roxanne_Bogart@fws.gov.

Humans are integral components of ecosystems; likewise, the functions and products of ecosystems are critical to social systems. In addition to ecological factors, to carry out the conservation of habitats and ecosystems important to birds it is imperative that conservationists take into account the social and cultural factors that influence the landscape at various scales. Science-based conservation goals and objectives for birds are the foundation for achieving conservation. A critical piece of on-the-ground implementation, however, lies in working with individuals and businesses as well as legal and social systems through an effective process of strategic communications, outreach, and education. This process involves steps that are similar in function to biological planning, implementation, and evaluation. This presentation will discuss the social-ecological system paradigm and how it can guide strategic communications for bird habitat conservation. Case studies from specific bird habitat joint ventures will be discussed.

Bonfield°, S.

International Migratory Bird Day: What's Conservation Got To Do With It? Bonfield, S. Sbonfield@aol.com

International Migratory Bird Day (IMBD) provides the framework for bird-focused events, reaching as many as 500,000 youth and adults each year at schools, refuges, local, state, and national parks, zoos, bird stores, and more. This extensive outreach offers an unrivaled opportunity to share important messages about bird conservation, and a critical component of the event is the annual conservation theme. Over 70% of IMBD organizers indicate that they incorporate this theme into their annual event, keeping their programs and messages fresh and relevant for returning audiences. Join us for a look at IMBD's conservation themes and the creative ways they have been incorporated into local events and action.

Bonter°, D. N.

20 Years of Watching Birds: Project FeederWatch Captures the Power of Backyard Birdwatchers. David Bonter, Cornell Lab of Ornithology, Ithaca, NY. dnb23@cornell.edu

Continental-scale tracking of bird populations is only possible through engaging the public to help monitor birds. Active engagement of the public in research efforts can also advance educational and conservation goals. More than 40,000 people from all U.S. states and Canadian provinces have participated in Project FeederWatch since 1987. The project, operated by the Cornell Lab of Ornithology and Bird Studies Canada, has accumulated more than 1.5 million checklists allowing researchers to study changes in the distribution and abundance of approximately 100 species that regularly visit feeders in North America. By combining the efforts of FeederWatch participants, researches have used the dataset to track range expansions by native (Red-bellied Woodpecker, Carolina Wren) and non-native (Eurasian Collared-Dove) species, identify widespread declines in Evening Grosbeak populations, and understand the dynamics of a novel pathogen affecting House Finches. Two decades of successfully capturing the energy of the public makes Project FeederWatch an ideal case study in the challenges and opportunities of public involvement in scientific research.

Botero°, J. E.; Lentijo, G.; López, A. M.; Arbeláez, D.; Gómez, J. P.; Durán, S.; Sánchez, L. M.

Migratory Birds in the Coffee Producing Regions of Colombia. Jorge E. Botero, Cenicafé, Manizales, Colombia; Lentijo, G., Cenicafé, Manizales, Colombia; López, A.M., Cenicafé, Manizales, Colombia; Arbeláez, D., Cenicafé, Manizales, Colombia; Gómez, J.P., Universidad de los Andes, Bogotá, Colombia; Durán, S., Cenicafé, Manizales, Colombia; & Sánchez, L.M., Cenicafé, Manizales, Colombia. jorge.botero@cafedecolombia.com.

In studies on biodiversity in coffee producing regions of Colombia, Cenicafé has obtained information on migratory birds that spend the winter season in these areas. We have recorded 30 boreal species in more than 40 localities, in coffee farms, forests, and other elements of this rural landscape.

Species richness and abundance varied among regions and habitats. There were also differences among patches of the same habitat depending on their management regime or conservation condition. A group of migratory species was present in most localities (*Piranga rubra, Catharus ustulatus* and *Dendroica fusca*), but for others there were few records that may indicate restrictions in their distribution (*Dendroica castanea* and *Piranga olivacea*). We have recorded species of conservation importance (*Dendroica cerulea*) using shade coffee farms.

In studies conducted at regional scale, migrants comprised between 7.5% and 14% of the avifauna in each locality, but there were differences among habitats: 63% of migratory individuals were observed in shade coffee, 21% in forest remnants, and 12% in tree groves. In coffee plantations with a heterogeneous shade, as in San Gil, Santander, we found the highest richness of migrants (19.8% of species and 13.2% of individuals recorded).

Our results confirm the importance of the Colombian coffee producing landscape to the survival of migratory birds. However, it is necessary to conduct further studies on their ecology and behavior to enable the design and application of appropriate conservation tools with the rural communities.

Migratorias Boreales en Zonas Cafeteras de Colombia.

En estudios sobre biodiversidad en zonas cafeteras de Colombia, Cenicafé ha obtenido información sobre las aves migratorias que pasan la temporada invernal en estas regiones. Se han registrado 30 especies migratorias boreales terrestres en más de 40 localidades, en cafetales, bosques y otros elementos del paisaje cafetero.

La riqueza y abundancia de migratorias varió entre regiones y hábitats e incluso entre estos dependiendo de su manejo y estado de conservación. Un grupo de estas especies esta presente en la mayoría de las localidades (*Piranga rubra, Catharus ustulatus* y *Dendroica fusca*), pero para otras se cuenta con pocos registros que indicarían restricciones en su distribución

(*Dendroica castanea* y *Piranga olivacea*). Se han registrado especies de importancia para la conservación (*Dendroica cerulea*) usando cafetales con sombra.

En estudios a nivel regional, las migratorias representaron entre el 7.5% y el 14% de las especies de cada localidad, pero hubo diferencias entre tipos de hábitats. El 63% de los individuos migratorios fueron observados en cafetales con sombra, 21% en remanentes de vegetación natural y 12% en áreas arboladas. Cafetales con sombrío heterogéneo, como los de San Gil, Santander, albergaron la mayor riqueza de migratorias (19.8% de las especies y el 13.2% de los individuos encontrados).

Los resultados obtenidos confirman la importancia del paisaje cafetero de Colombia para la supervivencia de las aves migratorias boreales. Sin embargo, es necesario realizar estudios sobre la ecología y comportamiento de estas especies, que permitan diseñar y aplicar herramientas de conservación con las comunidades rurales.

Boydston°, K. K.

Windfarm/Wildlife Policy and Outreach Development for the Lower Gulf Coast of Texas. Kathy Boydston, TPWD, Austin, TX. Kathy.boydston@tpwd.state.tx.us

This presentation will focus on the status of wind energy development in Texas and the steps that are being taken to guide wind energy development at the state and federal level. The primary focus of these policy proposals are the development of voluntary guidelines at the state level as well as the formation and status of the new Federal Advisory Committee (FACA) and the Wind Turbine Guidelines Advisory Committee. Additional research needs and current research projects will be discussed as well as efforts in educating the general public and landowners about wind energy development.

Braus, J.; Petty, R.°

A Toolkit for Achieving Conservation through Education. Judy Braus, National Audubon Society, Washington D.C., Petty, R., NAS, Stevensville, MT. jbraus@-audubon.org

This presentation will introduce a Conservation Education Toolkit that is designed strengthen the ability of conservation practitioners to create high-quality education programs based on real conservation objective. The audience for this initiative includes conservation practitioners and non-formal educators working directly on conservation projects. Most of the targeted participants are field-based and collaborate with a number of community-based organizations to achieve measurable conservation results.

This collaborative effort of National Audubon Society, U.S. Fish and Wildlife Service, Association of Zoos and Aquariums, Disney, and others will provide the resources, training tools, and research to help conservation practitioners better understand the value of education as a conservation tool. The Toolkit will provide insights for conservation practitioners about how to use education in programming to accomplish their goals and will focus on decision-making and strategic planning. It will help the conservation community understand educational methods, recognize how education relates to social marketing and other communication strategies, and learn how to evaluate educational success. The Toolkit will emphasize a planning process for practitioners and decision makers. It will include guidelines for implementing and evaluating education programs, as well as information on how to know which tools to use and when and how to use them.

This initiative will show how education can contribute to meeting conservation goals. It is not designed to train conservation professionals to be non-formal educators. Instead, the Toolkit will focus on how to use education strategically to build a conservation constituency and help achieve an organization's or agency's conservation goals.

Braus°, J.; Petty, R.

A Toolkit for Achieving Conservation through Education. Judy Braus, National Audubon Society, Washington D.C., Petty, R., NAS, Stevensville, MT. jbraus@audubon-.org

This presentation will introduce a Conservation Education Toolkit that is designed strengthen the ability of conservation practitioners to create high-quality education programs based on real conservation objective. The audience for this initiative includes conservation practitioners and non-formal educators working directly on conservation projects. Most of the targeted participants are field-based and collaborate with a number of community-based organizations to achieve measurable conservation results.

This collaborative effort of National Audubon Society, U.S. Fish and Wildlife Service, Association of Zoos and Aquariums, Disney, and others will provide the resources, training tools, and research to help conservation practitioners better understand the value of education as a conservation tool. The Toolkit will provide insights for conservation practitioners about how to use education in programming to accomplish their goals and will focus on decision-making and strategic planning. It will help the conservation community understand educational methods, recognize how education relates to social marketing and other communication strategies, and learn how to evaluate educational success. The Toolkit will emphasize a planning process for practitioners and decision makers. It will include guidelines for implementing and evaluating education programs, as well as information on how to know which tools to use and when and how to use them.

This initiative will show how education can contribute to meeting conservation goals. It is not designed to train conservation professionals to be non-formal educators. Instead, the Toolkit will focus on how to use education strategically to build a conservation constituency and help achieve an organization's or agency's conservation goals.

Brennan°, L. A.; Ballard, B. M.; Kuvlesky, Jr., W. P.

Windfarm Energy Development, Prescribed Fire and Migratory Land Birds in the Southeastern United States: Breeding, Stopover, and Wintering Habitat Relationships. Leonard A. Brennan, CKWRI, Kingsville, TX; Ballard, B.M., CKWRI, Kingsville, TX; Kuvlesky, Jr., W.M., CKWRI, Kingsville, TX. leonard.brennan@tamuk.edu

Fire is a landscape disturbance that was more widespread and pervasive than it is today. The proposed development of extensive wind energy developments on the Gulf Coast represents another anthropogenic development that will further limit applications of prescribed fire for ecosystem management objectives. Despite the anthropogenic reduction of fire, we should not continue to overlook the past and potential importance of fire and how fire influences habitat resources needed by resident, migrating, and wintering land birds. How fire influences stopover and wintering migratory bird populations and habitats is unclear, and needs more attention from researchers and managers. Because the ecology of fire and the biology of migration are complex topics, understanding the interactions between migratory birds and fire is a daunting task. Adding the potential negative impacts of windfarms to this already complex mix makes this problem more

onerous. Nevertheless, a series of future research strategies to better understand this topic in the context of how wind farm developments might impact ecosystem management of coastal forests and rangelands in the southeastern United States should include: (1) an approximation of historic fire regimes in tropical, subtropical and barrier island habitats; (2) how anthropogenic disturbances have influenced these fire regimes; (3) how prescribed fire applications mimic such historic regimes by using manipulative field experiments on the wintering grounds and in areas known to provide critical stopover habitat resources, and, most importantly, (4) how to continue to implement prescribed fire in light of increased fragmentation from infrastructure associated with windfarm energy development .

Brennan°, L. A.; Perez, R. M.; DeMaso, S. J.; Ballard, B. M.; Kuvlesky, W. P., Jr.

Potential Impacts of Wind Farm Energy Development on Upland Game Birds: Why Worry? Leonard A. Brennan, Caesar Kleberg Wildlife Research Institute, Kingsville, TX; Perez R.M., TPWD, Austin, TX; DeMaso, S.J., C KWRI, Kingsville, TX; Ballard, B.M., CKWRI, Kingsville, TX; Kuvlesky, W.P., CKWRI, Kingsville, TX. leonard.brennan@tamuk.edu

Ecologists and wildlife managers have been predominantly concerned about the negative impacts of wind energy developments (hereafter windfarms) on migratory birds and bats, and rightly so. However, we present a series of arguments that culminate in a plea to also consider the potential and realized impacts of windfarms on upland game birds. We pose these arguments from both ecological and economic perspectives because economic impacts derived from hunters is a major driver that provides incentives to sustain habitats not only for upland game birds, but scores of other terrestrial wildlife species as well. The primary concern regarding the impacts of windfarms seems to revolve around the widespread fragmentation that results from not only placement of the wind turbine towers, but also the infrastructure of roads needed to construct and service them, and the transmission lines required to access the continental electrical power grid. We consider these issues from the standpoint of habitat resources needed to sustain the annual cycle needs of both resident (Northern Bobwhite, Wild Turkey, Lesser Prairie-Chicken) and migratory (Mourning and White-winged doves).

Bruggeman°, D.

Incorporating Functional Connectivity and Uncertainty Analysis into Habitat Trading Programs for the Red-Cockaded Woodpecker. Doug Bruggeman. Bruggem3-@msu.edu.

Many species of conservation concern operate as metapopulations on the landscape. For such species altering the distribution of suitable habitats on the landscape can affect population dynamics in ways that are difficult to predict from simple models. We argue that for such species individually-based and spatially-explicit population models should be used to determine appropriate levels of offsite restoration to compensate for onsite loss of ecological resources. Such approaches are necessary when interactions between biological processes occur at different spatial scales (i.e., local: recruitment and landscape: migration). The site of restoration and site of habitat loss may be linked to each other, but more importantly to other resources in the landscape by regional biological processes, primarily migration. The common management approach for determining appropriate levels of offsite restoration is to derive mitigation ratios based on best professional judgment or pre-existing data. Mitigation ratios assume that the ecological benefits at the site of restoration are independent of the ecological costs at the site of habitat loss. Using a spatially-explicit demographic model for endangered Red-cockaded woodpeckers we show that the spatial configuration of habitat restoration can influence both the rate of recruitment within breeding groups and rate of migration among groups simultaneously, implying that simple mitigation ratios may be inadequate. We also show that uncertainty about demographic and behavioral processes affects the outcome, which creates opportunities for incorporating the value of learning into the habitat management process.

Incorporando la Conectividad Funcional y el Análisis de Incertidumbre en Programas de Compensación de Hábitat para el Carpintero de Cresta Roja.

Muchas especies de interés para la conservación operan como metapoblaciones en el paisaje. La alteración de la distribución del hábitat favorable para estas especies en el paisaje puede afectar su dinámica poblacional de modos difíciles de predecir mediante modelos simples. Defendemos que para estas especies deberían usarse modelos espacialmente explícitos y basados en el individuo para identificar los niveles adecuados de restauración fuera de sitio para compensar la pérdida in-situ de recursos ecológicos. Esta aproximación es necesaria cuando las interacciones entre procesos biológicos ocurren a escalas espaciales diferentes (es decir, local: reclutamiento; y paisajística: migración). El lugar de restauración y el lugar de pérdida de hábitat pueden estar ligados entre sí, pero lo que es más importante, también a otros recursos del paisaje a través de procesos biológicos regionales, sobre todo la migración. La aproximación más común para determinar los niveles adecuados de restauración fuera de sitio es estimar índices de mitigación basados en juicios profesionales o datos preexistentes. Los índices de mitigación asumen que los beneficios ecológicos en el sitio de restauración son independientes de los costes ecológicos en el sitio de pérdida de hábitat. Mediante un modelo demográfico espacialmente explícito, mostramos que la configuración espacial del hábitat restaurado puede influenciar simultáneamente tanto a la tasa de reclutamiento dentro de grupos reproductores como la tasa de migración entre grupos, lo cual implica que los índices de mitigación sencillos pueden ser inadecuados. También demostramos que la incertidumbre sobre procesos demográficos y de comportamiento afecta la salida del modelo, lo cual representa una oportunidad para incorporar el valor del aprendizaje en el proceso de manejo del hábitat.

Brush°, T.; Monk, S. G.

Habitat Use and Population Trends of Audubon's Oriole in the Lower Rio Grande of Texas. Timothy Brush, University of Texas-Pan American, Edinburg, TX; Monk, S., University of Texas-Pan American, Edinburg, TX tbrush@utpa.edu

Audubon's Oriole (*Icterus graduacauda*) once occurred in woodlands throughout the Lower Rio Grande Valley (LRGV) of southernmost Texas (U.S.A.). Populations declined and local distribution became restricted with extensive habitat loss and fragmentation. Currently, Audubon's Orioles remain uncommon residents of less-fragmented thorn-forest and thorn-scrub in the western LRGV but are most common in remnant upriver riparian forests. Sites where Audubon's Orioles were recorded were in larger patches, with a larger vertical canopy range, greater vegetation volume, in less-fragmented landscapes, than sites where Audubon's Orioles were not detected. Bronzed Cowbirds (*Molothrus aeneus*), regular brood parasites, were more common in smaller patches, but their numbers and presence were not correlated with Audubon's Orioles. Audubon's Orioles may

be associated with more intact woodlands because their nests may be harder to locate by Bronzed Cowbirds, which may rely primarily on oriole vocalizations to find oriole nests in dense vegetation. Outside the LRGV, Audubon's Oriole presence and numbers are typically associated with less-fragmented landscapes and dense foliage at some level. Highest numbers on Christmas Bird Counts were consistently found at Gómez Farías area, part of the El Cielo Biosphere Reserve, in southern Tamaulipas. The species is ranked high-priority by Partners in Flight because of its limited U.S. range and earlier population declines.

Buchanan°, J. B.

Balancing Habitat Management for Northern Spotted Owls and Other Bird Species in Ponderosa Pine Forests. Joseph B. Buchanan, WDFW, Olympia, WA. buchajbb@dfw.wa.gov.

Ponderosa pine (*Pinus ponderosa*) forests were historically maintained on the landscape by frequent, low-intensity fires that prevented the invasion of fire intolerant tree species. Fire suppression over the last century has resulted in changes in tree species composition and forest structure at stand and landscape levels. Prior to the onset of fire suppression, Northern Spotted Owls (*Strix occidentalis caurina*) in the eastern Cascade Mountains used closed-canopy, mixed coniferous forests in fire refugia. The effects of fire suppression have resulted in larger and more contiguous refugia, increased the amount of Spotted Owl habitat and concomitantly increased the risk of stand-replacement fire and large-scale insect outbreaks. Consequently, present conditions are not sustainable in the long-term and wildlife management objectives are conflicted. Specifically, past harvest of old ponderosa pine forest and the effects of fire suppression have reduced the amount of habitat for pine-dependent bird species. Continued fire suppression will further degrade ponderosa pine forest and increase the likelihood that landscape-level fires will eliminate habitat used by Spotted Owls and pine-dependent species. Landscape-level models that address fire risk and forest health should be developed and used to identify best possible configurations of forest patches necessary to maintain Spotted Owls in a dry forest landscape while identifying areas that would serve as fuel breaks and habitat for species dependent upon ponderosa pine forest. This strategy should be applicable to other dry forest landscapes to address similarly conflicting management objectives for dry forest obligates and species associated with mixed conifer, closed canopy forests.

Buehler°, D. A.

Demographics, Migratory Connections, and Bottlenecks. David Buehler, University of Tennessee, Knoxville, TN. dbuehler@utk.edu**.**

We have been working for >15 years through the Partners In Flight working groups to address the conservation needs of Nearctic Neotropical migrants that have declining populations. Conservation actions have addresses all stages of the life history of these species, although to varying extents. We have been operating with incomplete knowledge about what the key limiting factors are for virtually every species that we have targeted for conservation action. Underlying causes for the declines are potentially complex and generalizations are difficult. Given this complexity and the multitude of species we are working with, developing effective conservation strategies is problematic at best. Factors contributing to population declines could lie in inadequate fecundity on the breeding grounds or inadequate survival associated with breeding, migration, or wintering stages of the life cycle. In this talk, I will explore what we know and do not know about factors limiting Nearctic-Neotropical migrant populations. I will discuss how this knowledge or lack thereof should shape our conservation strategies as a foundation for getting states more involved in international conservation projects.

Burger, Jr.°, L. W.

Enhancing Habitat Value of CRP Pine Plantations for Pine-grassland Birds in the Southeast. Wes Burger, Mississippi State University, MS. Wburger@cfr.msstate.-edu.

Southern pine forests are fire-dependent ecosystems. In the absence of fire invasive hardwood species capture the mid-story, contributing to loss of herbaceous ground cover. Extensive, long-term fire exclusion has contributed to loss of pine-grassland forests throughout the Southeast and precipitous declines in associated bird species (e.g. Northern Bobwhite, Bachman's Sparrow, Red-cockaded Woodpecker, Brown-headed Nuthatch, etc). In the southeastern United States, more than 649,338 ha of former cropland have been enrolled in the CRP and planted to loblolly, slash, or longleaf pine. More than 91,719 ha of newly established longleaf have been enrolled in CP3a or CP36 practices and may provide pine-grassland habitats at some point in the future. Currently, more than 409,084 ha of mid-rotation pine plantations (15 – 20 years old) are enrolled in the CP11 (existing trees) practice. These ha were primarily planted to loblolly or slash pine and are often unthinned, unmanaged, and provide relatively poor wildlife habitat. However, with appropriate management, CP11 stands could provide regionally scarce pine-grassland structure that would support declining pine-grassland bird species. In this presentation, I illustrate how strategic use of thinning, selective herbicide, and prescribed fire can produce a stand structure that provides habitat for pine-grassland specialists and increases bird species richness, abundance, and Total Avian Conservation Value on CRP pine plantations.

Burger, Jr.°, L. W.; Hamrick, R.

Stepping Down the Goals of the Northern Bobwhite Conservation Initiative: Focusing Effort where Suitability Intersects Opportunity. Wes Burger, MSU, Starkville, MS; Rick Hamrick, Mississippi Department of Wildlife, Fisheries, and Parks. Wburger@cfr.msstate.edu.

Large-scale restoration of declining bobwhite populations will require habitat creation/enhancement on a massive scale. The Northern Bobwhite Conservation Initiative defines explicit, state, BCR, and national population and habitat goals. However, the recommendations are not spatially explicit with regard to where habitat enhancements should occur. A fundamental question of concern is "How do we distribute technical assistance, cost-share, and other resources in a manner that optimizes conservation benefit per investment ratios?" Conservation investments should be placed in the landscape in regions that have potential for greatest wildlife population responses and highest probabilities of eliciting sustained responses. Such regions might be characterized as already sustaining bird populations, yet having extensive quantities of potentially usable habitat available for enhancement. Tracts large in size and in close proximity to existing suitable habitat should receive priority status. We illustrate one approach to stepping down the NBCI for statewide deployment in Mississippi. We characterized predicted habitat suitability using an empirical habitat suitability model developed from breeding bird survey data and national land cover data. We characterized habitat enhancement opportunity using a combination of county-level Census of Agriculture Data (distribution of extant cropland and pasture) and county

level USDA-FSA CRP data. Conceptually, we defined focal areas based on the intersection of moderate to high habitat suitability, habitat enhancement opportunities based on land use, and extant public/private ownership under management activities conducive to bobwhite. We used watersheds boundaries to define focal area boundaries. We identified 11 focal areas totaling 3.6 million acres or approximately 11 % of the state land mass. In this presentation I will illustrate the process by which these focal areas were identified and discuss NBCI deployment strategies within focal areas and statewide.

Burnett°, R.; Nur, N.

Using Birds to Guide National Forest Management in the Sierra Nevada. Ryan D. Burnett, PRBO, Chester, CA; Nur, N., PRBO, Petaluma, CA. rburnett@prbo.org

PRBO has been using songbird monitoring to help guide and evaluate ecosystem management in the Northern Sierra Nevada since 1997. We have been working with forest service district staffs to develop projects that will provide relevant feedback to inform future management decisions. Here we provide examples from two projects on how results are providing important information to help guide current and future management. First we discuss a landscape based study investigating how a Spotted Owl focused management strategy will affect the songbird community. A number of species primarily found in disturbance associated habitats were significantly less abundant in areas managed for owls. We focus on the habitat needs and of these species and how management may need to change to ensure the full compliment of species are maintained on the landscape. Then, we discuss a project using a focal species approach to guide and evaluate restoration of aspen, a disturbance associated habitat. We present results on bird response to aspen treatments and how they have been integrated into second generation projects to increase benefits to birds. Finally, we discuss some of the innovative tools and techniques used to close the adaptive feedback loop and provide relevant and timely results that are being used to inform management decisions.

Busch*, A.; Dayer, A. A.

A Process and Tools for Evaluating Bird Banding Education Success. Amy Busch*, KBO and SOU, Ashland, OR; Ashley Dayer, KBO, Ashland, OR. school@klamathbird.org.

Bird banding education programs are growing in number throughout North America. Past research reveals that many of these bird banding education programs share the primary goals of educating about conservation, inspiring bird appreciation, and linking science and conservation. However, there has been limited evaluation of the effectiveness of bird banding education in accomplishing these goals. In 2007, Klamath Bird Observatory undertook a comprehensive evaluation of its bird banding education program for fourth and fifth grade students. The "Songbirds, Science, and Schools" program, designed by the organization, provides procedures, lesson plans, handouts, and follow-up teacher activities. The program includes a classroom visit that focuses on bird biology and science skills followed by a bird banding field trip. To assess accomplishment of program goals, multiple tools were used including surveys, interviews, and observations. Nearly 300 students, 11 teachers, and 3 nonformal educators participated in the study. Results demonstrate how this education program is accomplishing goals shared by bird banding education programs. This presentation will overview the process of conducting a bird banding education evaluation and offer tools and resources to those interested in replicating such efforts.

Butchart°, S.

Incorporating Information on Population Trends and Threats into Assessments of Extinction Risk: Recent and Proposed Developments in the IUCN Red List. Stuart Butchart, BirdLife International, Cambridge, England, U.K. stuart.butchart@birdlife.org.

The IUCN Red List is the most objective and widely accepted current system for assessing species' extinction risk. Over 40,000 species have now been assessed, and an extensive and expanding programme is broadening the taxonomic coverage, improving standards and consistency, and increasing the detail and sophistication of associated data. BirdLife International is the Red List Authority for all birds worldwide, and supplies IUCN with the categorizations plus extensive associated documentation. All 10,000 bird species have been assessed five times since 1988. This talk focuses on two aspects of the process. (1) Population trends are considered under two of the five criteria, which have quantitative thresholds for rates of population decline over ten years or three generations, whichever is longer. Generation length is explicitly defined, and data are now being compiled to estimate (or infer) values for all species. (2) Threats to species are coded against the new IUCN-CMP unified classification scheme for threat types. BirdLife scores the magnitude of each threat to each species using a system that considers timing, scope and severity, but this will be developed further as the new IUCN-CMP unified scheme for measuring threat magnitude. The new scheme will allow much easier logical consistency between the population trends for each species and the threats/magnitude coded for them.

Butcher°, G. S.; Niven, D. K.

Issues Related to Population Trend Assessments. Gregory Butcher, National Audubon Society, DC; Niven, D., National Audubon Society, Illinois. gbutcher@audubon.org.

Population trend information is highly desired for all bird species, but can be used and interpreted in a variety of ways. BirdLife/IUCN looks at population trends for 10 years or 3 generations, whichever is longer; PIF has used 40-year trends, but is considering a change to 30-year trends. We will look at some consequences of these differences. Rapid short-term losses are a valid indicator of immediate conservation risk for rare species, but some species with currently stable or increasing populations due to conservation actions are still far below desired population levels. We will suggest ways to recognize conservation-dependency and acknowledge species below desired population levels in assessment scoring.

Butcher°, G. S.; Niven, D. K.; Sauer, J. R.

Forty-year Decline of Grassland Birds in North America. Gregory Butcher, National Audubon Society, DC; Niven, D., National Audubon Society, Illinois; Sauer, J., U.S. Geological Survey, Maryland. gbutcher@audubon.org.

Both the Breeding Bird Survey (BBS) and Audubon Christmas Bird Count (CBC) show declines for the vast majority of grassland bird species that breed or winter in the contiguous United States and southern Canada. We present grassland bird indices for breeding and winter seasons, in addition to representative graphs for individual species. We compare trends of grassland birds to trends of other ecological groups of birds in North America (primarily shrubland, woodland, and wetland). We close with thoughts about conservation actions that might halt and reverse these declines.

Butler°, P. J.

Promoting Protection Through Pride. Paul John Butler, Global Programs, Arlington VA, pbutler@rareconservation.org

Some of the world's brightest minds and biggest investments go toward selling products like soda, toilet paper, and video games. So why not environmental conservation? The future of our global environment will ultimately depend on people's attitudes and behaviors, but tools for creating social change are in short supply. Rare has designed a program to support local conservationists managing outreach efforts around the world. Its flagship program for constituency building centers around what's called a Pride campaign. A hybrid of traditional education and private sector marketing strategies, Pride campaigns inspire people who live in the world's most bio-diverse places to embrace conservation. Rare Pride has achieved significant impact in more than 50 countries, and our methods are now being contracted by large conservation organizations who want to utilize social marketing techniques for local conservation efforts, including TNC, CI, WCS, and more. Campaigns utilize a charismatic flagship species, like the Saint Lucia Parrot or the Philippine Cockatoo, which becomes a symbol of local pride and acts as a messenger to build support for habitat and wildlife protection. Marketing tools – such as billboards, posters, songs, music videos, sermons, comic books, and puppet shows – make conservation messages positive, compelling, relevant, and fun for the community. Targeted awareness-raising initiatives can dramatically build momentum for conservation by creating the constituencies necessary for initiating policy changes, legislative reform, and new protected areas; by catalyzing in-country private and public sector funding; by shifting public behavior toward more sustainable practices; and by focusing public attention on critically threatened ecosystems and species.

Byrnes°, B.

Prioritizing and Monitoring Progress in Implementation of Conservation Plans at Important Bird Areas. Brian Byrnes, Audubon Pennsylvania, Audubon, PA. bbyrnes@audubon.org.

Audubon Pennsylvania partnered with the Keystone Conservation Trust to create a system for prioritizing the implementation of conservation plans at eighty-four Important Bird Areas in the Commonwealth. By evaluating the biological value of each site, the threats to the site, and identifying services provided by other conservation organizations, areas of greatest need (both geographical and service-based) are identified. A model gap analysis form was drafted to guide a regional coordinator through the full process of Important Bird Area implementation, from site identification and recognition to the creation of a sustainable framework in which the area is responsibly stewarded in a manner that engages all stakeholders. Both the prioritization tool and the gap analysis can be modified for use in other areas and are available upon request.

Canales-del Castillo*, R.; González Rojas, J. I. ; Favela Lara, S.; Klicka, J.

Relaciones Filogenéticas y Genética de Poblaciones del Gorrión de Worthen (*Spizella wortheni*) (Passeriforme; Emberzidae). Ricardo Canales-del Castillo, FCB/UANL, Monterrey, Nuevo León, México; González-Rojas, J., FCB/UANL, Monterrey, Nuevo León, México; Lara, S., FCB/UANL, Monterrey, Nuevo León, México; Klicka, J., UNLV, Las Vegas, NV. canalesrcc@gmail.com

El gorrión de Worthen pertenece al género *Spizella* donde se incluyen siete u ocho especies de gorriones que se distribuyen en Norteamérica, que con la posible excepción de *Spizella arborea*, forman un grupo monofilético. El Gorrión de Worthen (*Spizella wortheni*) endémico del altiplano mexicano es la única especie del género que no realiza movimientos migratorios y se encuentra actualmente amenazada por la reducción en su distribución y poblaciones declinantes. La taxonomía de la especie ha sido controversial por las similitudes morfológicas con *S. pusilla*, inclusive se le relegó como subespecie de esta. Los análisis filogenéticos del género mediante RFLP y secuenciación del DNA mitocondrial no han clarificado las relaciones entres los taxa del género. En ninguno de ellos se ha incluido a *S. wortheni* pero se ha predicho que formaría un taxón hermano con *S. pusilla*. El objetivo del presente estudio es determinar la relación filogenética de *S. wortheni* con *S. pusilla* y los demás taxa del género mediante los genes mitocondriales Cyt B y NDH2, así como la variación genética a través de la secuencia de la región control mitocondrial. Los resultados basados en la construcción de árboles de máxima parsimonia generados muestran que el gorrión de Worthen no es un taxón hermano de *S. pusilla* y que pareciera estar mas relacionado *S. breweri*.

Phylogenetic relationships and population genetics of the Worthen's Sparrow (*Spizella wortheni*) (Passeriforme; Emberizidae).

The Worthen's Sparrow belongs to the *Spizella* genus, where 7 or 8 species distributed in North America are included and form a monophyletic group, with the possible exception of *S. arborea*. Worthen's Sparrow (*Spizella wortheni*) is endemic to the Mexican Plateau and is the only genera member that does not undertake migratory movements. It is currently considered as threatened due to distribution and population reduction. This species' taxonomy has been controversial due to its morphological resemblance to *S. pusilla* and has even been placed as its subspecies. Phylogenetic analysis using mitochondrial sequences and RFLP have not solved relationship among taxa. None of these studies included *S. wortheni*, but is predicted as a sister taxon of *S. pusilla.* The objective of the present work is assessing the phylogenetic relationship among *S. wortheni*, *S. pusilla* and the rest of the genus members using Cyt B and NDH2, and genetic variation based on sequencing the hypervariable mitochondrial control region. Preliminary results based on maximum parsimony trees show that Worthen's Sparrow is not a sister taxon of *S. pusilla*, and seem to be more closely related to *S. breweri.*

Canales-del Castillo°, R.; Elizondo-Alejo, H.; González-Rojas, J. I.; and Ruvalcaba-Ortega, I.

Éxito Reproductivo y Nueva Área de Anidación del Gorrión de Worthen (*Spizella wortheni*), Nuevo León, México. Ricardo Canales-del Castillo, FCB/UANL, Monterrey, Nuevo León, México; Elizondo-Alejo, H., FCB/UANL, Monterrey, Nuevo León, México; González-Rojas J.I., FCB/UANL, Monterrey, Nuevo León, México; Ruvalcaba-Ortega, I., FCB/UANL, Monterrey, Nuevo León, México. canalesrcc@gmail.com

El Gorrión de Worthen (*Spizella wortheni*), endémico del altiplano mexicano, es una especie amenazada, cuyo rango de distribución es de aproximadamente 25 km^2, su población es estimada entre 100 y 120 individuos y su tendencia poblacional se encuentra en declive. Ante este panorama y la carencia de información, resulta indispensable contribuir al conocimiento de su biología reproductiva para establecer bases sólidas para su conservación. Se localizaron 33 nidos en la localidad La Carbo-

nera, en el municipio de Galeana, Nuevo León, de los cuales 28 se monitorearon para establecer el éxito reproductivo. El éxito de eclosión fue del 29.76% mientras que el de emancipación fue cero. La principal causa del fracaso en la anidación fue la depredación. El rango de puesta varió entre 2 y 4 huevos por nido. Los nidos se encontraron a una altura promedio de 20.2±9.9 cm. Asimismo, se obtuvieron otros parámetros como el periodo de incubación, medidas del nido y de los huevos. Se realizó una caracterización de la vegetación circundante a los nidos y de otros puntos al azar para establecer si existe una selección del sitio. Se utilizaron parcelas de 5x5 m para el estrato arbustivo y 1x1 para el herbáceo.

Reproductive Success and a New Breeding Site for Worthen's Sparrow (*Spizella wortheni*), in Nuevo León, México.

Worthen's Sparrow (Spizella wortheni), endemic to the Mexican Plateau, is the only member of the genus that does not migrate. Observations of the last 30 years have been made in localities from Coahuila and Nuevo León. It is a threatened species, whose distribution range is approximately of 25 km2, its population size is estimated in 100-120 individuals, and has a negative population trend. It is, therefore, necessary to study its breeding biology to establish solid basis for its conservation. We located 33 nests in La Carbonera locality, of which 28 were monitored to determine reproductive success. Hatching success was 29.76%, while fledging was zero. The main cause of failure was predation. Clutch size ranged from 2 to 4 eggs. Nests were found on shrubs at 20.2±9.9 cm height. We also obtained other parameters such as incubation period, and nest and eggs measurements. Finally, we characterized vegetation surrounding the nests and an equal number of randomly oriented points to determine if there is a site selection. We used 5x5 m plots for the shrub stratum and 1x1 m for the herbaceous layer.

Cantú-Guzmán, J. C.; Sánchez-Saldaña°, M. E.; Grosselet, M.; Silva-Gamez, J.

The Illegal Parrot Trade in Mexico. Juan Carlos Cantú-Guzmán, Defenders of Wildlife México, México; María Elena Sánchez-Saldaña°, Teyeliz, México; M. Grosselet, Birdinnet, México; J. Silva-Gamez, Jolotempa, Nayarit, México

Mexico has 22 species of parrots of which six are endemic and 20 are in some category of risk. Through interviews with parrot trappers, hoarders, parrot trappers' unions, and US and Mexican authorities, data was obtained on the volume of illegal trapping, how and where it is carried out, and how illegal trapping relates to the legal trade. An estimated 65,000 to 78,500 parrots are captured each year. The overall mortality rate for trapped parrots exceeds 75% before reaching a purchaser. The rate of parrot seizures by Mexican environmental police was assessed, and represents an average of about 2% of the annual illegal trade. The existence of legal trapping authorizations provided cover for the illegal trade. An estimated four to fourteen percent of the trapped birds are smuggled into the US. The report shows that national and international bans have not caused increased smuggling or increased prices of the affected parrot species over the last 10 years. Prices in Mexico and the USA have, in fact, generally decreased in that time period. Illegal trade is having a negative impact on parrot populations. Recommendations to stop the devastating impacts are discussed.

El Tráfico Ilegal De Pericos en México.

México tiene 22 especies de pericos de las cuales seis son endémicas y 20 están en alguna categoría de riesgo. A través de entrevistas con capturadores, representantes de sus uniones, acopiadores, y autoridades ambientales de México y los EUA, se obtuvo información sobre el volumen de la captura ilegal, cómo y en dónde se realiza, y cómo se relaciona el comercio legal con el ilegal. Se estima que se capturan entre 65,000 y 78,500 pericos cada año. La tasa de mortalidad general para pericos capturados del medio silvestre, excede el 75% antes de llegar al consumidor final. Se estimó la tasa de aseguramientos de pericos realizados por la Procuraduría Federal de Protección al Ambiente que representa un promedio de alrededor del 2% del tráfico ilegal anual. La existencia de autorizaciones de captura ha servido para encubrir el tráfico ilegal. Se estimó que entre el 4 y 14% de los pericos capturados son contrabandeados a los EUA. El reporte muestra que las vedas nacionales e internacionales no han causado un incremento en el contrabando o en los precios de las especies de pericos en los últimos 10 años. De hecho, los precios en México y en los EUA han disminuido durante ese periodo. El tráfico ilegal tiene un efecto negativo sobre las poblaciones de pericos. Se discuten recomendaciones para detener los devastadores impactos.

Carlisle°, J. D.; O'Sullivan, T. O.

Early Responses to Grazing Management Changes and Restoration by a Riparian Breeding Bird Community on Lava Lake Ranch in South-Central Idaho. Jay D. Carlisle, Idaho Bird Observatory, Boise, ID; O'Sullivan, T., Lava Lake Ranch, Hailey, ID. jaycarlisle@boisestate.edu

Lava Lake Land and Livestock is a private ranch in the Pioneer Mountains of south-central Idaho with five major parcels and associated leases of adjoining federal lands. Since the purchase in 1999, Lava Lake Ranch has enacted several changes in management with NRCS technical assistance, including removing cattle from four of the five parcels; a shift towards sheep ranching and a gradual reduction in sheep numbers; and the beginning of stream-bed restoration along some streams. Early vegetation responses have included increased cover of riparian woody shrubs, more annuals, and reduced bare ground. Here we examine initial responses by the riparian breeding bird community to management changes by comparing results from early June bird surveys conducted in 2006-07 vs. 2001-02. Most species have shown an increase since 2001, indicating a widespread positive response by the bird community. In particular, bird species most tied to near-ground vegetation (including low shrubs) in riparian areas, including Lazuli Bunting, MacGillivray's Warbler, Red-winged Blackbird, Song Sparrow, and Dusky Flycatcher, have shown the most dramatic responses. Meanwhile, a number of other species with habitat requirements already in place and/or that take longer to restore showed either no change or only moderate increases. These results indicate that the bird community is responding as quickly as the vegetation is recovering.

Las Respuestas Tempranas a los Cambios de la Administración y la Restauración por una Comunidad Ribereña de Pájaro en la Hacienda de Lago de Lava en Idaho del Sur-Central.

Lago de Lava es una hacienda privada en las Montañas de Pionero de Idaho del sur-central con cinco propiedades separadas y arrendamientos asociados de tierras federales adyacentes. Desde que la compra en 1999, Hacienda de Lago de Lava ha decretado varios cambios en la administración con ayuda técnica de NRCS, inclusive quitar vacas de cuatro de los cinco propiedades; un cambio hacia la ganadería de oveja y una reducción gradual en números de oveja; y el principio de la restauración de corriente-cama por algunos corrientes. Las respuestas tempranas de la vegetación han incluido la cubierta

aumentadas de arbustos leñosos ribereños, más vegetación anual, y menos suelo descubierto. Aquí examinamos las respuestas iniciales por los cambios de la administración de la comunidad de pájaros ribereños comparando los resultados de inspecciones de pájaro realizaron temprano de junio en 2006-07 vs. 2001-02. La mayoría de las especies han mostrado un aumento desde que 2001, indicando una respuesta positiva esparcida por la comunidad de pájaro. En particular, la especie de pájaro muy atado a la vegetación del cerca de-molió (inclusive arbustos bajos) en áreas ribereñas, inclusive *Passerina amoena*, *Oporornis tolmiei*, *Agelaius phoeniceus*, *Melospiza melodia*, y *Empidonax oberholseri*, ha mostrado las respuestas más dramáticas. Mientras tanto, varias otras especies con requisitos de hábitat ya implementado y/o eso toma más largo restaurar han mostrado o no cambio o sólo modera los aumentos. Estos resultados indican que la comunidad de pájaro responde tan rápidamente como la vegetación recupera.

Carlson°, M.; Bayne, E. M.; Stelfox, B.

Assessing the Future Wildlife Impacts of Conservation and Development in the Mackenzie Watershed. Matt Carlson, CBI, Canada; Bayne, E., University of Alberta, Canada;. Stelfox, B., Forem Technologies, Canada. mcarlson@borealcanada.ca.

Located in northwestern Canada, the Mackenzie watershed's intact Boreal ecosystems support a diversity of wildlife including hundreds of migratory bird species and sensitive mammals such as the woodland caribou. The watershed also contains abundant timber and hydrocarbon resources such as the oilsands region in northern Alberta and undeveloped gas fields in the Northwest Territories. We conducted a scenario analysis to explore the long-term impacts of natural resource development to the watershed's landscapes and wildlife. Land use simulations using the ALCES computer model compared a business-as-usual development scenario and a conservation scenario that increased protection and implemented practices to reduce the impact of forestry and energy development. The business-as-usual scenario was predicted to reduce older forest and increase anthropogenic footprint. These simulated landscape transformations caused declines in songbird species such as the Canada Warbler, Black-throated Green Warbler, and Ovenbird, and led to the extirpation of woodland caribou. By reducing landscape disturbance, the conservation scenario lessened the predicted impacts to wildlife. The scenario analysis demonstrates the importance of implementing effective conservation strategies prior to wide-scale development in Boreal ecosystems. The research is part of a broader effort by the Canadian Boreal Initiative and the International Boreal Conservation Campaign to improve understanding of threats to the region's ecosystems and strategies to mitigate key threats.

Caro°, D.; Quevedo, A.; Ines Lara, S.

Innovations in protecting Migrants and Threatened Birds in Colombia. David Caro, Fundacion ProAves, Colombia. dcaro@proaves.org.

Colombia contains one fifth of the planet's bird species yet their habitats are seriously threatened by habitat loss, accelerated by the demand for biofuels. This is reflected by 157 bird species being globally threatened. Colombia is also a strategic area for non-breeding Neotropical migrants, with 192 species registered including 51 priority Green List species, and wintering stronghold of the Cerulean Warbler. With the mission to protect birds in Colombia, for the past decade Fundacion ProAves (www.proaves.org) has undertaken an intensive research program to identify key sites and assess threats. Reacting to research and monitoring data, ProAves is implementing field conservation actions and directly protecting 68% of all threatened and 94 migratory bird species. Primarily, ProAves has intervened in extreme situations to acquire and protect critical sites for the most endangered species. Thanks to the support of ABC, NMBCA, and others, ProAves has established a network of 12 bird reserves protecting over 41,000 acres containing 59% of threatened species and over one-tenth of the planet's avifauna. Protected unique habitat that falls outside the national protected area system is crucial to the long-term survival of the rarest species, but ProAves also undertakes a comprehensive range of other activities to address all threats from raising awareness and sustainable development initiatives with rural communities, reforestation, capacity-building and training. Furthermore, ProAves has innovative initiatives such as the Parrot Bus (a mobile education unit), two national awareness campaigns, a Nest-Box Program for threatened parrots, Cerulean Warbler Conservation coffee, and ecological easements.

Innovaciones en la Protección de los Migrantes y de las Aves Amenazadas en Colombia.

Colombia posee una quinta parte de las especies de aves del planeta, sus hábitats se encuentran seriamente amenazados por la deforestación, acelerado por la creciente demanda de carburantes. Por esto 157 especies de aves están amenazadas. Colombia es una zona estratégica no-reproductiva para las aves migratorias, con 192 especies registradas, 51 están incluidas como especies prioritarias en la Lista-Verde, adicionalmente zona estratégica durante el invierno de la Reinita Cerúlea. Con la misión de proteger a las aves en Colombia, durante los últimos diez años la Fundación ProAves (www.proaves.org) ha llevado a cabo un programa de investigación para identificar sitios clave. Utilizando la investigación, ProAves sobre las regiones realiza acciones de conservación y la protección de 68% de las especies amenazadas de aves y 94 especies migratorias. Principalmente, ProAves ha realizado gestiones difíciles de adquisición y protección de lugares estratégicos de importancia crítica para la mayoría de las especies en peligro. Gracias al apoyo de ABC, NMBCA, y otras, ProAves ha establecido una red de 12 reservas protegiendo más de 41000 hectáreas incluyendo áreas de amortiguación que contienen 59% de las especies amenazadas y más de una décima parte de las aves del planeta. La protección de estos hábitat únicos presentes fuera del sistema nacional de áreas protegidas, es crucial para la supervivencia a largo plazo de las especies más raras, ProAves realiza una amplia gama de otras actividades para hacer frente a todas las amenazas, incluyendo la sensibilización y las iniciativas de desarrollo sostenible con las comunidades rurales, actividades de reforestación, la creación de capacidad y formación, iniciativas innovadoras como el Loro Bus (aula ambiental móvil de educación), anualmente dos campañas nacionales de sensibilización, para loros amenazados un programa de nidos artificiales con metas de aumento en esfuerzo reproductivo, café de conservación del Reinita Cerúlea incluyendo sombrío con especies nativas atractivas a las aves, y servidumbres ecológicas.

Carter°, M. F.; Rustay, C. M.

Playa Lakes Joint Venture Percent-of-Goal Setting Process for Priority Birds. Michael F.Carter, Playa Lakes Joint Venture, Lafayette, CO; Rustay C.M., Playa Lakes Joint Venture, Lafayette, CO. mike.carter@pljv.org.

The Playa Lakes Joint Venture (PLJV) sets bird population objectives to develop habitat objectives that are less focused on the accuracy of species population size and more centered on the acres needed to restore a species to a stated population

objective. We initially used PIF population estimates to determine needed acres, however we found this introduced unnecessary error into our process. Our process now models current carrying capacity via densities, uses all significant regional trend information to determine proportion of a population that may be missing, and assumes that lack of habitat is the limiting factor. We calculate the proportion of missing population by applying annual trend over 30 years and multiply that result by the current carrying capacity to determine a "population goal." This number is used to develop adequate links with density and carrying capacity to determine the amount of habitat needed to restore or maintain a population. Where an accurate population estimate exists such as for waterfowl, we use a different process that will be demonstrated along with its challenges and assumptions. All carrying capacity estimates are converted to a Percent-of-Goal which provides for apples-to-apples comparisons among priority landbirds, shorebirds, and waterfowl via the PLJV Hierarchical All Bird System (HABS) database. Using HABS, we model the effect of change needed in the condition or amount of habitat for one species on all other associated species, resulting in an optimal landscape prescription.

Playa Lakes Joint Venture: Procesos para Fijar el Porcentajede la Meta de las Aves Prioritarias

El Playa Lakes Joint Venture (PLJV) fija los objetivos de las poblaciones de aves para desarrollar objetivos del hábitat menos enfocados en la precisión del tamaño de las poblaciones de las especies y centrado en los acres necesarios para restaurar una especie a un objetivo de la población especificado. Inicialmente utilizamos estimaciones de poblaciones PIF para determinar los acres necesarios, pero este método introducía un error innecesario en el proceso. Ahora nuestro proceso: modela la capacidad de carga actual vía densidades, utiliza todos los datos significativos sobre las tendencias regionales para determinar la proporción que puede estar faltando de una población, y supone que la falta de hábitat es el factor limitante. Calculamos la proporción faltante de la población utilizando las tendencias anuales a través de 30 años y multiplicamos ese resultado por la capacidad de carga actual para determinar una "meta poblacional." Este número se usa para desarrollar las conexiones adecuadas entre densidad y capacidad de carga para determinar la cantidad de hábitat necesario para restaurar o mantener una población. Donde existe una estimación exacta de la población, como para aves acuáticas, usamos un proceso diferente que será demostrado junto con sus desafíos y suposiciones. Todas las estimaciones de capacidad de carga se convierten a un Porcentaje de la Meta que provee comparaciones de manzana con manzana entre aves terrestres, aves de humedales y aves acuáticas prioritarias vía la base de datos de PLJV Sistema Jerárquico de Todas las Aves (Hierarchical All Bird System, o HABS, por sus siglas en Inglés). Usando HABS, modelamos el efecto del cambio necesario en la condición o cantidad de hábitat para una especie sobre el resto de las especies asociadas, resultando en una prescripción optimizada a nivel del paisaje.

Cartes°, J. L.; Yanosky, A.; Cabrera, E.

Working with Local People: Experiences and Lessons Learned from Two IBAs from Paraguay. José L. Cartes, Guyra Paraguay; Yanosky, A., Guyra Paraguay; Cabrera, E., Guyra Paraguay. jlcartes@guyra.org.py .

Guyra Paraguay creates opportunities for the society to participate in conservation activities. Since 2005, through the Development Fair, organized by the World Bank, Guyra Paraguay carried out an innovative project with residents of Bahia Negra, in the Paraguayan Pantanal. Thanks to this project, the Eco Club, our Local Conservation Group (LCG) built a FM radio station to broadcast programs about conservation values and cultural identity to the local community. In 2006, thanks to Audubon, Birdlife and the Dutch Ministry of Foreign Affairs (DGIS), an outline for the collaborative development and work with the LCG of San Rafael, Interior Atlantic Forest was implemented. In this case, the outline of collaborative development and work based on social trust has been the main point of action. Trust was gained because of previous projects on sustainable agriculture, as well as surveys on social relief for the pride campaign, carried out by local stakeholders. In summary, through the implementation of these two projects, it is obvious that in Paraguay there is a deficiency in education at different levels making the training and strengthening of the LCGs, difficult. However, it also showed that when a small opportunity is given, the communities are capable of achieving important results. This is especially true regarding the access to modern technologies such as the Internet and GIS, creating means to improve income (regulations regarding soil use, donations, etc.).

Guyra Paraguay trabaja a través de la generación de oportunidades para que la sociedad participe activamente en las actividades de conservación. Desde el año 2005, gracias a la Feria del Desarrollo, organizado por el Banco Mundial, pudo llevar a cabo un proyecto innovador con los pobladores de Bahía Negra, pantanal paraguayo. A través de este proyecto, el Eco Club, nuestro Grupo Local de Conservación (GLC) implementó una radioemisora FM para transmitir valores e identidad cultural a los pobladores locales. También desde el año 2006, gracias a Audubon, BirdLife y el Ministerio de Asuntos Exteriores de Holanda (DGIS), también se desarrolló un esquema de trabajo conjunto con GLC de la zona de San Rafael, bosque atlántico. En este caso el desarrollo del trabajo basado en la confianza ha sido el principal frente de acción. Esta confianza se logró gracias a los trabajos realizados en desarrollo sustentable agrícola anteriores. También fue muy importante el desarrollo de las encuestas de relevamiento social para la campaña del orgullo, realizadas por los mismos actores locales. En definitiva, gracias a estos dos trabajos, se puede observar que en Paraguay existe una clara deficiencia educativa en todos los órdenes, que dificulta mucho la capacitación y fortalecimiento de los GLC. Sin embargo, también se demostró que si se proporciona una mínima oportunidad de desarrollo, ellos pueden ser capaces de lograr resultados de gran impacto. Especialmente esto es cierto en relación al acceso a los medios tecnológicos modernos como Internet y GIS, generando posibilidades de mejora de ingresos (regulaciones al uso del suelo, donaciones, otros).

Caruso*, K.; Buehler, D.

Developing a Management Conservation Strategy for the Golden-Winged Warbler in the Cumberland Mountains of Tennessee--Preliminary Results. Kelly Caruso, University of Tennessee, Knoxville, TN; Buehler, D., University of Tennessee, Knoxville, TN. kcaruso@utk.edu

Many of the wildlife species that inhabit early-successional habitats have experienced steep declines in recent decades in the Southern Appalachians. Research data indicates that wildlife species associated with these forests are in decline, partly because much of it has been converted to non-forest uses such as agriculture, and commercial and urban development. The golden-winged warbler (*Vermivora chrysoptera*) is one such species at risk. The Ruffed grouse (*Bonasa umbellus*) and American Woodcock (*Scolopax minor*) are also facing declines from loss of early-successional habitat. Currently, there is an

abundance of patchily distributed surface mined lands in the Cumberland Mountains of eastern Tennessee that no longer provide suitable habitat for numerous species dependent upon quality early-successional habitat. This provides a unique opportunity to compare the effectiveness of different management techniques in order to create the preferred habitat type that species like the golden-winged warbler need for breeding young. The general objectives of this study are to restore and enhance early-successional habitat using prescribed burning as a management tool, and monitor the response of golden-winged populations over the course of the next four years. We are working in partnership with local state and federal agencies in order to develop a long-term management strategy for the golden-winged and for the early-successional communities they inhabit.

Caruso*, K.; Buehler, D.; Ostermeier, D.

Golden-Winged Warbler Conservation Research—A Vehicle for Outreach Education in the Cumberland Mountains of East Tennessee. Kelly Caruso, University of Tennessee, Knoxville, TN; Buehler, D., University of Tennessee, Knoxville, TN; Ostermeier, D., University of Tennessee, Knoxville, TN. kcaruso@utk.edu

In the southern portion of the Appalachian Bird Conservation Region (TN, NC, GA), the population decline of the golden-winged warbler is undoubtedly linked to habitat loss from forest succession and land use change. Experimental habitat management in the southern Appalachians has proven to be successful at increasing golden-winged populations (N. Klaus, GA DNR, pers. comm.; Bulluck, Caruso, and Buehler, Univ. TN, unpubl. data). During the late winter/early spring of 2007, we initiated prescribed burn management, as a conservation tool, on four study sites in the Cumberland Mountains with the intent to create and maintain early-successional habitat for the golden-winged warbler and other community bird species. Additionally, we wanted to build community awareness and support of our conservation efforts, support for other area conservation programs (such as the Cumberland Habitat Conservation Plan), and other species of conservation concern (cerulean warbler). To achieve these objectives, we developed a preliminary avian education program that we initiated this past summer in Cove Lake State Park, as part of their summer program series. The public response was extremely positive. We intend to expand our program efforts this year into the local elementary schools, and are working in conjunction with the Coal Creek Watershed Foundation to establish a more cohesive working education relationship with these communities.

Casey°, D.; Casey, S.

Informing Land Management and CRP Program Delivery in the Intermountain West. Daniel Casey, American Bird Conservancy, Kalispell, MT; Casey, S., ABC, Kalispell, MT. dcasey@abcbirds.org

Partners in Flight Conservation Plans for individual western states, all prepared prior to the release of the Continental PIF Plan, identified priority habitats and species but generally stopped shy of establishing quantitative objectives. The eleven state coordinated implementation plans prepared by the Intermountain West Join Venture established geographic priority areas for conservation delivery, and established broad habitat objectives for these “Bird Habitat Conservation Areas”. Both efforts were served well by the Western Working Group (WWG) of PIF, which ensured ecoregional consistency across state boundaries. We are now developing refined ecoregional habitat objectives that are explicitly tied to habitat-population models for selected species of management concern. Preliminary decision support models for Grasshopper Sparrow and Long-billed Curlew used Gap, SW ReGap, and other Ecological Systems layers, standardized across the west, and associated density and occupancy rates to analyze the potential population effects of habitat conversion and enhancement in agricultural, grassland and shrub-steppe habitats. Combining this effort with mapped CRP acreages allowed us to inform CRP Species at Risk proposals, and to establish priority areas for expanded CRP program delivery, and to assess the avian population impact of Farm Bill programs. We are now working on more detailed pilot models for selected BCR/State polygons, to provide support for conservation delivery throughout the Joint Venture. We are using the WWG of PIF as the landbird science team for this effort.

Cassady°, G.

Let’s Get Real: Bird Conservation Through Market-based Influence. Ginger Cassady, Forest Ethics, Canada. ginger@forestethics.org

Bird conservation efforts in North America have traditionally focused on land-based protection, restoration, and management efforts. However, these traditional efforts have often ignored the arguably greater potential benefits of changing land-use plans and policies that promote harmful industrial extraction of natural resources. North America’s Boreal Forest Region, which contains one-quarter of the world’s remaining original forests, represents an unique opportunity to proactively conserve important bird habitats before they are disturbed by industrial development. However, this region is increasingly threatened, especially in Canada, where 30% of the nation’s Boreal Forest region has been allocated for oil, gas, mining, hydroelectric, or timber development. The Canadian Boreal is currently being logged at the rate of two acres per minute, with much of the wood being used to produce paper for catalogs and junk mail. ForestEthics has initiated a number of market campaigns aimed at changing business practices in the mail-order catalog industry to significantly reduce the amount of virgin boreal forest used to produce catalogs. These campaigns have been highly successful, with companies such as Williams-Sonoma, Dell, and Victoria’s Secret responding by implementing environmentally-friendly catalog practices. The Victoria’s Dirty Secret campaign will be presented as a case study to illustrate how market campaigns can be used as a powerful tool in the protection of important bird habitat in the Canadian Boreal.

Cavalieri*, V. S.; O'Connell, T. J.; Leslie, Jr., D. M.

Scale Effects on Occurrence and Relative Abundance of Forest Songbirds in Eastern Oklahoma. Vince Cavalieri*, OSU, Stillwater, OK; O’Connell, T., OSU, Stillwater, OK; Leslie, D.; OSU, Stillwater, OK. vince.cavalieri@-okstate.edu .

Several species of forest songbirds reach a western limit of their respective distributions in eastern Oklahoma. The relative influence of broad vs. fine scale forest cover on patterns of occurrence in this region may differ from those same influences in the core of species' ranges. We examined the influence of forest cover at fine and broad scales on the occurrence and relative abundance of a suite of forest songbirds. We sampled breeding birds with four, fixed radius point counts along 1-km transects at 75 eastern Oklahoma sites in 2006 and 2007 (150 sites total). We used a count removal model with program SURVIV to estimate species- and observer-specific detection probabilities for abundance comparisons. We selected sample sites to represent a gradient of forest cover from urban and agricultural landscapes

to entirely forested landscapes in the Ozark and Ouachita Mountains. Forest cover at fine scales varied by numerous structural characteristics (e.g., canopy height) as well as species composition (e.g., pines vs. hardwoods). For broad scale forest cover, we used National Landcover Data in 2-km buffers placed around the center point of each site in a GIS. Preliminary analysis indicates that fine scale vegetation structure explains a larger proportion of variability in avian occurrence and relative abundance than does broad scale forest cover.

Efectos de Escala en la Presencia y Abundancia Relativa de Paserinos en los Bosques del Este de Oklahoma.

Varias especies de paserinos residentes en los bosques alcanzan el límite occidental de sus distribuciones en el este del estado de Oklahoma. La influencia relativa de cobertura forestal de escala amplia o fina en matices de presencia en esta región posiblemente es distinta de las mismas influencias en el núcleo de la distribución de las especies. Examinos la influencia de cobertura forestal a escalas finas y amplias en la presencia y relativa abundancia de una gama de paserinos en los bosques. Investigamos la presencia de aves nidificantes con cuatro conteos de punto de radio fijo a lo largo de transectos de una largura de un kilómetro en 75 sitios en el este de Oklahoma en el 2006 y el 2007 (total de 150 sitios). Utilizamos un modelo de eliminación de conteo con el programa SURVIV para estimar probabilidades de detección específicas de especies y observador a fin de comparar las abundancias. Seleccionamos sitios de muestreo para hacer una representación de un gradiente de cobertura forestal desde paisajes urbanos y agrícolas hasta paisajes completamente cubiertos de bosques en las montañas de Ozark y Ouachita. La cobertura de bosque a escalas finas varía según numerosas características estructurales (por ejemplo, la altura del dosel del bosque) así como según la composición de especies (por ejemplo, los pinos o árboles caducifolios). Para la estimación de la cobertura forestal a escala amplia, utilizamos los Datos de Cobertura de Tierra Nacional (National Landcover Database) en zonas de amortiguamiento de dos kilómetros ubicadas alrededor del punto central de cada sitio en un SIG. Los análisis preliminarios indican que la estructura vegetativa a escala fina explica una proporción más grande de la variabilidad en la abundancia relativa que la cobertura forestal a escala amplia.

Caycedo Rosales°, P.; Salaman, P.; Pashley, D.

Current State of Knowledge of Cerulean Warbler Ecology in its Non Breeding Area as a Base for a Preliminary Conservation Plan. Perspective Future. Paula Caycedo Rosales Fundación ProAves, Salaman, P.; Pashley, D. American Bird Conservancy. pcaycedo@proaves.org.

Historically, Cerulean Warbler specimens and observations have predominantly been made in the Subandean humid forests of Colombia, followed by Venezuela, Ecuador and Peru. Based on recent information gathered by observers across the Andes and compiled by the Grupo Cerúleo and Fundacion ProAves, the Cerulean Warbler is largely restricted to the canopy of forest and agroforestry systems (e.g. shade coffee) in semi-humid subandean region, between 900 to 1800 m. This altitudinal range and habitat type coincides with the most transformed region of the Andes, if not South America, because of intensive agricultural production resulting in little intact natural habitat and what does is in most cases unprotected and heavily fragmented. Fortunately Cerulean Warbler population densities are high in shade coffee systems (ca.1 individual per acre) however changing land-use practices dictated by economic demands are resulting in large-scale conversion of shade to sun-variety coffees. Currently we know that in its wintering grounds the Cerulean Warbler forages in the canopy, and is more frequently observed following flocking birds as an facultative species, but also a solitary feeder. This and additional information is vital in order to try to enhance habitat quality and shade coffee management considering the Cerulean Warbler. In 2008 we shall start elaborating a comprehensive conservation plan as a template for future targeted conservation actions and refinement with additional data.

Cecil°, J.; Sanchez, C.; Sheehan, J.

Identification and Prioritization of Important Bird Areas in the U.S. John Cecil, Audubon, Ivyland, PA; Sanchez, C., Audubon, Ivyland, PA; Sheehan, J., Audubon, Ivyland, PA. jcecil@audubon.org.

Developed by BirdLife International, the Important Bird Areas (IBA) Program is a global effort that seeks to identify, prioritize, monitor, and engage a broad community of stakeholders in the conservation of sites essential for birds. The foundation of the program is the science-based process by which sites are identified, prioritized and assessed. In the U.S., the program is uniquely implemented on a state-by-state basis and further coordinated and guided by efforts at the national level. The IBA identification process begins at the state level, with a coordinator and experts using IBA criteria relevant to bird populations in the state. The sites identified using state-level IBA criteria are then prioritized using a global and continental IBA criteria framework. Ultimately the goal is to determine the overall biological significance of the sites from a bird perspective and utilize our limited conservation resources on the highest priority sites. To date, over 2,100 IBAs have been identified across the country, encompassing over 220 million acres. Prioritization of the state-level IBAs using the BirdLife Global IBA criteria is underway.

Cecil°, J.; Sanchez, C.; Sheehan, J.

Assessing the State, Pressure, and Response of IBAs in the U.S. John Cecil, Audubon, Ivyland, PA; Sanchez, C., Audubon, Ivyland, PA; Sheehan, J., Audubon, Ivyland, PA. jcecil@audubon.org.

The Important Bird Areas Program seeks to identify, protect and conserve a network of sites that are important for the long-term viability of naturally occurring bird populations. Key to IBA conservation is the understanding of how the actions taken to counter threats faced by birds and habitats are actually affecting conditions at these sites. The IBA Site Assessment framework provides a structured approach to tracking the status of birds, habitats, and threats at IBAs, so that the success of these actions can be measured and further actions modified. As is the case with other components of the IBA process, the site assessment is locally implemented and then linked to and integrated with local, regional, and global conservation initiatives. This framework serves as a tool toward better site-based management and threat reduction.

Cecil°, J.; Sanchez, C.; Sheehan, J.

IBA Adoption in the U.S. John Cecil, Audubon, Ivyland, PA; Sanchez, C., Audubon, Ivyland, PA; Sheehan, J., Audubon, Ivyland, PA. jcecil@audubon.org.

The implementation of conservation activities at Important Bird Areas relies on the engagement of IBA Adoption Groups, local groups with an interest in and stake in these crucial sites for birds. In the U.S., over 175 IBA Adoption Groups have been established across 22 states to date, with these groups conducting various activities at over 275 IBAs. Activities of these IBA

Adoption Groups range widely, and have involved habitat restoration, targeted bird monitoring, education and outreach, and advocacy. Efforts of IBA Adoption Groups have led to a variety of successes, including the protection of bird habitat through agreements with landowners, land acquisitions and easements, and established policy. IBA Adoption Groups continue to be established across the U.S, and conservation activities targeting the protection and management of key birds at these IBAs are ongoing.

Chadwick°, D.; Neel, L.; Sallabanks°, R.

State Wildlife Action Plans: A Platform for Enhanced Landscape-Scale Collaboration Among State Fish and Wildlife Agencies and Their Partners. Dave Chadwick, Association of Fish and Wildlife Agencies, Washington DC., Neel, L. NDW, NV; Sallabanks, R., IDF&G, Boise, ID. chadwick@fishwildlife.org

The state wildlife action plans identify the actions that are needed to prevent wildlife from becoming endangered in each state, including habitat conservation, management, restoration, and research and monitoring. Every state has completed an action plan, presenting an historic opportunity to improve the conservation of at-risk wildlife across the nation. Because the action plans are focused on preventing wildlife from becoming endangered, they can be a powerful platform for a range of collaborative conservation planning, management, and research activities.

Implementation of the wildlife action plans is already well underway in every state and territory. As a first priority, the state fish and wildlife agencies are seeking enhanced funding for wildlife diversity conservation, through the enactment of increased federal funding and through the development of new state and private sources of funding to match federal funds. In addition to enhancing their own capacity to implement the wildlife action plans, fish and wildlife agencies are also taking the wildlife action plans out to a broad spectrum of conservation partners, including other agencies, nongovernmental conservation groups, and private businesses. The linchpin to all of these efforts is the "Teaming with Wildlife" coalition, a broad-based coalition of organizations and agencies that works to publicize the wildlife action plans and secure increased funding for their implementation. At the national level, the states are working through the Association of Fish and Wildlife Agencies to coordinate their implementation efforts and pursue enhanced funding and partnerships.

Planes de Acción para Vida Silvestre Estatales: una plataforma para Colaboración Fortigicada a Escala de Paisaje entre Agencias de Pesca y Vida Silvestre Estatales y sus Asociados.

Los planes de acción de vida silvestre estatales identifican las acciones necesarias para prevenir que la vida silvestre llegue a ser amenazada en cada estado, incluyendo conservación de hábitat, manejo, restauración e investigación y monitoreo. Cada estado ha completado un plan de acción, lo que presenta una oportunidad histórica para mejorar la conservación de vida silvestre en riesgo en todo el país. Ya que los planes de acción se enfocan en prevenir que la vida silvestre llegue a estar amenazada, pueden ser una plataforma poderosa para un conjunto de actividades colaborativas de planeación de conservación, manejo e investigación.

La implementación de los planes de acción de vida silvestre se encuentra bien encaminados en cada estado y territorio. Como primera prioridad, las agencias de pesca y vida silvestre estan buscando un financiamiento mas grande para la conservación de la diversidad de vida silvestre a través de la aprobación de un aumento en el financiamento federal y a través del desarrollo de nuevas fuentes estatales y privadas que empaten a los fondos federales. Además de mejorar su capacidad de implementar planes de acción de vida silvestre, las agencias de pesca y vida silvestre también están llevando los planes de acción de vida silvestre ante un espectro amplio de compañeros de conservación, incluyendo otras agencias, grupos de conservación no gubernamentales e industria privada. El eje central de todos estos esfuerzos es la coalición de "Equipo con la Vida Silvestre" ("Teaming with Wildlife"), una coalición amplia de organizaciones y agencias que trabaja para publicitar los planes de acción de vida silvestre y asegurar el aumento al financiamiento para su implementación. A nivel nacional, los estados están trabajando a través de la Association of Fish and Wildlife Agencies para coordinar sus esfuerzos de implementación y buscar mayor financiamiento y asociaciones.

Chassot°, O.; Monge Arias, G.; Ruiz Melédez, A.; Mariscal Pueyo, T.

Turning the Great Green Macaw Conservation Plan into an Outreach Program: Creative Tools for the Establishment of a Network of Monitoring Children in Nicaragua and Costa Rica. Olivier Chassot, Centro Científico Tropical/Comité Ejecutivo del Corredor Biológico, San José, Costa Rica; Monge, A., Centro Científico Tropical/Comité Ejecutivo del Corredor Biológico, San José, Costa Rica; Meléndez, R., Fundación del Río, Nicaragua; Mariscal, T., Fundación del Río, Nicaragua. research@cct.or.cr.

Important fragments of primary and intervened forest in the El Castillo-San Juan-La Selva Biological Corridor (southeastern Nicaragua and northern Costa Rica) are being threatened by timber extraction and agricultural expansion. Since 2000, bonds between the Fundación del Río (Nicaragua) and the Tropical Science Center (Costa Rica) have been strengthened, resulting in a binational campaign focused on promoting the awareness of the ecology of the Great Green Macaw (*Ara ambiguus*) in the lowlands of the San Juan River. The primary objectives of the campaign have been: to conduct workshops on the biology, importance, threats and conservation of the Great Green Macaw and its habitat based on the information generated by the research project; to strengthen natural resources management by the environmental authorities of both countries using alliances built around the establishment of local and international biological corridors; and the organization of joint symbolic activities.

The most outstanding results to date have been the understanding, acceptance and concern of the major stakeholders regarding the challenges faced by the Great Green Macaw, and the urgent need of cooperative ventures to protect it from extinction in both countries. This process is meant to promote the participation of children and school teachers in 20 communities of El Castillo in monitoring and protection activities of the Great Green Macaw, and has generated 1100 observations between 2003 and 2007. This information has been fundamental for the local government of El Castillo to declare the Great Green Macaw the official municipal bird and to establish sanctions to those that intend to harm this magnificent bird.

Convirtiendo el Plan de Conservación de la Lapa Verde ed un Programa de Acercamiento: Herramientas Creativas Para el Establecimiento de una Red de Monitoreo por Niños en Nicaraqua y Costa Rica.

En el Corredor Biológico El Castillo-San Juan-La Selva, en el Sureste de Nicaragua y la Zona Norte de Costa Rica, importantes fragmentos de bosques primarios e intervenidos se encuentran amenazados por la extracción forestal y los avances

de la frontera agrícola. Desde el año 2000, se han estrechado vínculos entre la Fundación del Río (Nicaragua) y el Centro Científico Tropical (Costa Rica), estableciéndose una campaña binacional enfocada en la concientización sobre la ecología de lapa verde (*Ara ambiguus*) en la cuenca baja del Río San Juan. Los objetivos principales de la campaña han sido realizar talleres sobre la biología, importancia, problemática y conservación de la lapa verde y su hábitat a partir de la información generada por el proyecto de investigación, fortalecer la labor de gestión de los recursos naturales por parte de las autoridades ambientales de ambos países mediante la conformación de alianzas de corredores biológicos en el ámbito local y binacional, y la ejecución de actividades simbólicas conjuntas.

Los resultados más sobresalientes hasta la fecha han sido el entendimiento, aceptación y preocupación de los principales interesados en cuanto a la problemática de la lapa verde y la apremiante necesidad de protegerla de forma conjunta para evitar su extinción en ambos países. Este proceso consiste en promover la integración de niños, niñas y maestros de las escuelas en 20 comunidades del Municipio de El Castillo a la actividad de monitoreo, cuido y protección de las lapas, y ha generado 1100 reportes de avistamiento entre 2003 y 2007. Esta información fue instrumental para que el gobierno municipal promulgue a la lapa verde como ave emblema del municipio y estableciera sanciones a quienes causen daños a esta magnífica ave.

Chester°, C. C.

Borders from a Bird's-Eye View: A Century of Transborder Conservation for North American Migratory Birds. Charles Chester, Brandeis University, Waltham, MA. cchester@brandeis.edu.

Since Canada and the U.S. signed the 1916 Migratory Bird Treaty, North America has seen a rich history of transborder initiatives to protect migratory birds. Ranging from international treaties to regional nongovernmental cooperative agreements, over twenty such initiatives have been adopted between Canada, the U.S., and Mexico. One might interpret this plethora of international conservation measures as indicative of either bureaucratic schizophrenia or "power in diversity"—although both characterizations apply equally well. Given the inevitable confusion engendered by such a wealth of initiatives, this paper offers a "field guide" to assist conservationists in sorting out the world of transborder migratory bird conservation. The paper will also examine the various types of "effectiveness indicators" that these individual initiatives use to evaluate themselves, and will conclude by asking how these myriad activities can best be coordinated in order to maximize conservation results. In light of such threats as expanding avian disease and climate change, the chapter concludes by emphasizing the fundamental need for expanded protection of breeding, wintering, and stop-over habitats for migratory birds.

Cilimburg°, A.

Surveying for Flammulated Owls in Montana via Citizen Scientists and Technicians. Amy Cilimburg, Avian Science Center, UM, Missoula. amy.cilimburg@mso.umt.edu.

Flammulated Owl populations in the Intermountain West may be declining due to habitat alterations, yet their secretive nature and scattered distribution have made monitoring difficult. In 2005, the Avian Science Center (ASC) and the Northern Region of the U.S. Forest Service (USFS) initiated the first-ever Region-wide survey for Flammulated Owls in ponderosa pine and other lower elevation, dry forest types of Montana and northern Idaho. Sampling methods using GIS modeling proved effective, and we now have a clearer understanding of Flammulated Owl distributions. However, a long-term monitoring program using an established protocol is needed to understand habitat associations and population trends.

A citizen-science approach has the potential to provide a cost-effective means of collecting population data across a large area over time, and Flammulated Owl surveys are particularly appropriate for citizen monitoring because identification is straight forward, equipment is simple and inexpensive, and the public has a keen interest in both hearing owls and contributing to valuable science. In 2007, we initiated a successful pilot project using volunteers from local Audubon groups to survey "adopted" routes selected using the sampling methods developed previously. However, remote survey areas and more intensive sampling may best be accomplished using paid technicians. In 2008 the ASC and USFS plan to combine these two approaches in order to begin to assess the potential impacts of ponderosa pine restoration, particularly in the wildland urban interface.

Cilimburg°, A., Ellis, J.

Montana Birders become Global Warming Activists: How and Why. Amy Cilimburg, MT Audubon, Missoula, MT; Ellis, J., MT Audubon, Helena, MT. amy@mtaudubon.org.

As global warming and its potential threats to wildlife become clear, many conservation-minded individuals want to better understand the issues and work toward solutions. Montana Audubon members, though well-educated and often in search of educational opportunities, are a largely untapped voice for action.

Recently, the National Audubon Society provided seed funding to Montana Audubon for a grassroots organizing campaign to educate people across the state on the threats of global warming to birds and other wildlife. Through face-to-face talks and workshops, we demonstrate what "business-as-usual" in greenhouse gas emissions will likely mean for local birds, wildlife and habitat, discuss the urgency, and then share ideas for solutions. Auduboners have responded well to ideas about reducing their carbon footprint, including home energy use and low-carbon bird trips. But our main focus is influencing legislation, and we are seeing action there as well. Workshop participants have contacted their Senators and written, often for the first time, letters to newspaper opinion pages. We continue to look for ways to avoid preaching, and make it fun and worthwhile for individuals to reach out to friends, neighbors, schools, and elected officials.

Cimprich°, D. A.

Observations of Natal Dispersal for the Endangered Black-capped Vireo. David Cimprich, TNC, Fort Hood, TX. dcimprich@tnc.org.

Dispersal data for the Black-capped Vireo (*Vireo atricapilla*) is necessary for understanding the species' geographic distribution and metapopulation dynamics. From 1991 to 2006, biologists at Fort Hood Military Reservation in central Texas banded 3661 nestling Black-capped Vireos. Subsequently, 166 of these birds were recaptured as adults. Additionally, 46 of 403 individuals banded as age hatching year were recaptured as adults. I found evidence that HYs move >1 km from natal sites shortly after they become independent of their parents. Thus, dispersal data from these birds are not comparable to data from birds banded as nestlings. I found no evidence that median observed dispersal distances depended on the number of years elapsed

from banding to recapture. This suggests that either breeding dispersal distances were very small relative to natal dispersal distances or that breeding dispersal movements toward the natal site for some individuals were balanced by movements away from the natal site for others. Despite the increase in the Fort Hood population over this period, I detected no trend in observed dispersal distance over the years. Similarly, I found no evidence that hatch date influenced observed dispersal distance. Two individuals dispersed slightly over 70 km suggesting that the Fort Hood population acts as a source of immigrants for a large area of central Texas. Future analyses will attempt to correct for the effect of finite study areas.

Ciuzio°, E.; Ettel, T.

New Jersey's Important Bird Areas (IBA) Project: a Model for Identifying Site-based Habitat and Population Goals. Elizabeth Ciuzio, NJAS, Cape May Courthouse, NJ; Frank, C., NJAS, Cape May Courthouse, NJ; Ettel, T., NJAS, Princeton, NJ. beth.ciuzio@njaudubon.org

In 2004, the New Jersey Audubon Society initiated the Important Bird Areas Project to identify and protect sites essential to the long-term conservation of native bird populations. With 122 site identified, the project has transitioned into the conservation planning phase in which we develop models for comprehensive site-based conservation based on need and land ownership patterns. Using the Mannington Meadows IBA as an example, we will present our model for site-based conservation of an area in a mainly private ownership pattern. This on-the-ground model integrates land preservation, habitat restoration, and community design to protect the viability of the IBA by building partnerships with organizations that offer the particular expertise necessary to protect a site. The results of two years of outreach thus far is 350 acres of habitat restoration projects in process or planned, 2500 acres of land targeted for preservation, and significant improvements in zoning and land use regulations made by the local communities.

Our model also includes specific habitat restoration goals that identify target species, population objectives and corresponding habitat objectives for target species. Using priority species identified by the State Wildlife Action Plan and population goals identified by PIF, New Jersey's IBA model is achieving the goals of regional and nation plans on the local level and within priority sites.

Proyecto de Áreas Importantes para las Aves (IBA) de New Jersey: un Modelo para Identificar Metas de Población y Hábitat Basadas en Sitios.

En 2004, la New Jersey Audubon Society inició el Proyecto de Áreas de Importancia para las Aves para identificar y proteger sitios esenciales para la conservación a largo plazo de poblaciones de aves nativas. Con 122 sitios identificados, el proyecto ha pasado a la fase de planeación de conservación, en el que desarrollamos modelos para conservación incluyentes referidos a un sitio, basados en la necesidad y los patrones de tenencia de la tierra. Usando el IBA de Mannington Meadows como un ejemplo, presentaremos nuestro modelo para conservación basada en un sitio en un área con un patrón principal de propiedad de tierras privadas. Este modelo en sitio integra preservación del suelo, restauración de hábitat y diseño comunitario para proteger la vialibilidad del IBA mediante la construcción de asociaciones con organizaciones que ofrecen la experiencia particular necesaria para proteger un sitio. Los resultados de dos años de trabajo con la comunidad son 350 acres de proyectos de restauración de hábitats en proceso o en planes, 2500 acres de tierras destinadas a la preservación y mejoras significativas en la zonación y normatividad de uso de suelos hecha por las comunidades locales.

Nuestro modelo también incluye metas de restauración específicas de hábitats que identifican especies meta, objetivos de población y los objetivos de hábitat correspondientes para las especies meta. Usando las especies prioritarias identificadas por el Plan de Acción Estatal de Vida Silvestre y las metas de población identificadas por PIF, el modelo de IBA de New Jersey está alcanzado las metas de los planes regional y nacional a nivel local y dentro de los sitios prioritarios.

Cohen°, E.

Climate Change, Birds and the Role of Conservation. Ellie M. Cohen, PRBO Conservation Science, Petaluma, CA. ecohen@prbo.org.

Human-caused climate change is accelerating and birds are experiencing its impacts. PRBO biologists are documenting nest abandonment, reduced reproductive effort and mismatches in predator-prey timing in western United States and the California Current marine ecosystem. Our long term data sets also reveal significant changes in spring and fall songbird arrival dates as well as correlations between decreased nest success and El Nino. Climate change models predict more extreme weather events and these impacts appear to be driven by severe drought, anomalous precipitation events, highly variable ocean currents and changing wind patterns.

Bird research and monitoring provide early warning as to how and where change is occurring and might occur, and guide effective restoration and management with significant ecological and economic benefits. Riparian restoration decreases flood damage, replenishes groundwater and provides fish nurseries; expanded tidal wetlands reduce flood and sea level rise affects, filter out pollutants and sequester carbon; and protecting marine food webs could slow impacts from increased ocean variability. To help maintain ecosystem integrity during rapid change for birds, other wildlife and humans, we must rely on a range of conservation approaches including long term data collection; modeling demographic responses of species to both climate and habitat change; facilitating species shifts; developing bird species of *future* concern plans; prioritizing ecosystem function over single species management; increasing partnerships to maximize outcomes; expanding web-based information sharing; and growing citizen science initiatives.

Collazo°, J. A.

Advancing Our Understanding of Functional Connectivity with Empirical Studies and its Implication for Avian Conservation. Jaime A. Collazo, USGS, Raleigh, NC; Kelsey P. Oberneufemann, NCSU, Raleigh, NC. jaime_collazo@ncsu.edu

Functional connectivity plays a central role in avian conservation given its relevance to fitness and persistence. Broadly, it refers to the degree to which the landscape facilitates or impedes movement among resource patches. The challenge then becomes defining the scale at which resource patches are connected and the relative influence of physical and biological constraints upon the process. Most of the work to date report structural measures of connectivity (e.g., inter-patch distance). Few report functional measures of connectivity or behavioral responses to landscape elements. Admittedly, studies focused on how movement behavior and landscape spatial structure interact are rare. While most of the factors that influence functional connectivity are well known for some species (e.g, *Dendrócopos boreális*), it is poorly known for most. The challenge assumes another dimension when dealing with habitat requirements for

species during migration. We present results of an empirical study on migratory shorebirds to illustrate how two metrics, daily survival and movement probability, were estimated as a function of the spatial context in which they occurred. The work also illustrates how behavioral responses were incorporated and measured in the context of management schemes designed to enhance habitat quality. The work can be viewed as an example of a "hybrid patch-landscape scale" empirical study, an approach aimed at reducing sampling intensity at the landscape level. We will discuss several other approaches design to elucidate the scale at which functional connectivity occurs and the how to integrate advances to habitat prioritization schemes such as the one developed by Partners in Flight.

Adelantando Nuestro Entendimiento Sobre Conectividad Functional con Estudios Empiricos y sus Implicaciones a la Conservacion de Aves.

Conectividad funcional juega un papel central en la conservación de aves dada su relevancia a parametros de supervivencia y reproducción, y persistencia. En términos generales, se refiere al grado en que el paisaje facilita o impide movimiento entre parchos de recursos. El reto se convierte entonces en definir la escala a la cual los parchos están conectados y la influencia relativa de factores físicos y biológicos sobre el proceso. La mayoría de los trabajos al presente informan medidas estructurales de conectividad (e.g., distancia entre parchos). Pocos informan medidas funcionales o respuestas de comportamiento a elementos paisajistas. Se reconoce que estudios enfocados a como el conducta de movimiento y estructura espacial del paisaje interaccional son raros. Aunque la mayoría de los factores que influencian connectividad funcional se conocen para algunas especies (e.g., *Dendrócopos boreális*), para la mayoría de las especies no se conoce. El reto asume otra dimensión cuando se trata de requisitos de hábitat de aves durante la migración. Nosotros presentamos los resultados de un estudio empírico de playeros migratorios para ilustrar como dos medidas, la probabilidad de sobrevivir diariamente y movimiento, fueron estimadas como función del contexto espacial del paisaje. El trabajo también ilustra como las respuestas de comportamiento fueron incorporada y medidas en el contexto de manejo de hábitat diseñado a enaltecer su calidad. El trabajo se puede considerar un ejemplo de un estudio empírico "híbrido a escala parcho-paisaje", un acercamiento para reducir la intensidad de muestreo a nivel paisajista. Se discutirán varios acercamientos para dilucidar la escala a la cual exite conectividad funcional y como integrar avances sobre nuestro entendimiento del mismo a esquemas de conservacion de habitat como el de Compañeros en Vuelo.

Contreras°, S.; Ballard, B. M; Kuvlesky, Jr., W. P.; Brennan, L. A.; Morrison, M. L.; Boydston, K. K.

Dynamics of Bird Migration Along the Lower Texas Coast. Suzanne Contreras, CKWRI, Kingsville, TX; Ballard, B. M, CKWRI, Kingsville, TX; Kuvlesky, W. P., Jr., CKWRI, Kingsville, TX; Brennan, L. A., CKWRI, Kingsville, TX; Morrison, M. L.; Boydston, K., TPWD, Austin, TX. scon356@yahoo.com

The Texas Gulf Coast provides important stopover habitat for millions of migratory birds annually. Future coastal development in this region may change the quantity and quality of stopover habitat, which could significantly affect migratory birds. Therefore, we initiated a three year study to examine the temporal and spatial patterns of bird migration along the lower Gulf Coast of Texas. We plan to use an avian radar system at two study sites to collect site-specific data on chronology, magnitude, and dispersion of bird migration. In fall 2007, we initiated an avian radar unit to operate continuously at a study site in Kleberg County. A second study site in Cameron County will be included in the project in spring 2008. Radar units will be operational during fall from 15 August to 1 November, and during spring from 15 March to 1 June to document bird migration dynamics. This baseline data on the migration patterns will provide information that will assist in the management and conservation of migratory birds.

Contreras°, S.; Santana Castellón, E.; Schondube, J.; Cruz, J.; Verdugo, H.; Villalpando, N.; Cruz, B.

Comparison of Populations of Varied Buntings in Lowland Riparian Forest and Montane Scrub in West Central Mexico. Sarahy Contreras; Santana, E.; Schondube, J.; Cruz, J; Verdugo, H.; Villalpando, N.; Cruz, B. Instituto Manantlan de Ecologia y Conservacion de la Biodiversidad, Universidad de Guadalajara-CUCSUR, Mexico. sarahy.contreras@cucsur.udg.mx.

We compared populations of migratory Varied Buntings (Passerina versicolor) based on a sample of 113 captures in montane habitats obtained over a 12-year period (1992-2004) and 694 captures in riparian lowlands obtained over a 2-year period (2004-2006) in the Sierra de Manantlán region of western Mexico. Varied Buntings are migratory winter residents in our study areas; individuals begin to arrive in October, although the largest population influx occurs in December. By the end of May all individuals have left both study areas. Painted Buntings were significantly more abundant in the lowland riparian habitat than in the montane scrub (3.92 captures/100 mistnet-hours vs. 0.61 captures/100 mistnethours). Other parameters also differed among both populations; individuals in montane scrub had significantly longer wing chords than those in lowland riparian areas. However, lowland individuals, although smaller, had a better body condition as they weighed on the average 0.4 g more their upland counterparts (2.53±0.07 g in lowlands vs. 12.02±0.09 in uplands). Of 32 individuals recaptured in more than one winter, one had a minimum age of 10 years, four had a minimum age of seven years, and twenty eight had a minimum age of 2 – 5 years. At least one individual was known to remain at its wintering site for at least 6 month and six individuals remained for at least four months. Conservation of riparian areas in an agricultural matrix is fundamental for the conservation of many migratory species like the Varied Bunting.

Comparación de poblaciones de Passerina verssicolor en bosques ribereños de planicies y matorral de montaña del centro-oeste de México Comparamos poblaciones de Passerina versicolor con base a una muestra de 113 capturas obtenidas en hábitats montanos a través de un periodo de 12 años (1992-2004) y 694 capturas obtenidas en las áreas ribereñas de planicies a través de un periodo de 2 años (2004-2006) en la región de la Sierra de Manantlán en el Occidente de México. P. versicolor son residentes de invierno en nuestras áreas de estudio, los individuos empiezan a llegar en octubre, aunque el insumo mayor a la población ocurre en diciembre. Para el final de Mayo ya todos los individuos se han ausentado ambas áreas de estudio. P. versicolor eran significativamente más abundantes en los hábitats ribereños de planicies que en los matorrales de montaña. Otros parámetros también difirieron entre poblaciones; individuos del matorral montano tenían alas significativamente mas largas que los individuos de las zonas bajas. Sin embargo, estos individuos de las zonas bajas si bien eran más pequeñas, tenían mejor condición corporal ya que median en promedio 0.4 g. mas que sus contrapartes de las montañas. De 32 individuos

ecapturados en más de un invierno, uno tenía una edad mínima de 10 años, cuatro de siete años, y 28 tenían una edad mínima de 2 -5 años. Al menos un individuo fue residente en su ámbito hogareño por al menos 6 meses durante un invierno, y seis individuos se quedaron pr cuatro meses. La conservación de áreas ribereñas en una matriz de agrícola es fundamental para la conservación de muchas aves migratorias como Passerina vesicolor.

Cooper°, R. J.; Mordecai, R. S.; Mattsson, B. G.; Conroy, M. J.; Pacifici, K.; Peterson, J. T.; Moore, C. T.

Design for a Region-wide Adaptive Search for the Ivory-billed Woodpecker with the Objective of Estimating Occupancy and Related Parameters. Robert J. Cooper; Mordecai, R. S.; Mattsson, B. J., UG, Athens, GA.; Conroy, M. J.; Pacifici, K.; Peterson, J. T., USGS, and UG, Athens, GA; Moore, C.T., Patuxent Wildlife Research Center, Athens, GA. rcooper@warnell.uga.edu.

We describe a survey design and field protocol for the Ivory-billed Woodpecker (*Campephilus principalis*) search effort that will: (1) allow estimation of occupancy, use, and detection probability for habitats at two spatial scales within the bird's former range, (2) assess relationships between occupancy, use, and habitat characteristics at those scales, (3) eventually allow the development of a population viability model that depends on patch occupancy instead of difficult-to-measure demographic parameters, and (4) be adaptive, allowing newly collected information to update the above models and search locations. The approach features random selection of patches to be searched from a sampling frame stratified and weighted by patch quality, and requires multiple visits per patch. It is adaptive within a season in that increased search activity is allowed in and around locations of strong visual and/or aural evidence, and adaptive among seasons in that habitat associations allow modification of stratum weights. This statistically rigorous approach is an improvement over simply visiting the "best" habitat in an *ad hoc* fashion because we can learn from prior effort and modify the search accordingly. Results from the 2006-07 search season indicate weak relationships between occupancy and habitat (although we suggest modifications of habitat measurement protocols), and a very low detection probability, suggesting more visits per patch are required. Sample size requirements will be discussed.

Diseño de una Búsqueda Adaptable a toda la Región del Picamaderos Picomarfil con el Objetivo de Determinar la Ocupación y los Parámetros Relacionados.

Describimos un diseño de estudio y un protocolo de campo para la tarea de búsqueda del picamaderos picomarfil (*Campephilus principalis*) que: (1) permitirá determinar la ocupación, el uso y la probabilidad de detección de hábitats en dos escalas espaciales dentro del área de extensión anterior del ave, (2) evaluar las relaciones entre las características de ocupación, uso y hábitat en esas escalas, (3) finalmente permitirá el desarrollo de un modelo de viabilidad de población que depende de la ocupación de terrenos en lugar de los parámetros demográficos difíciles de medir, y (4) será adaptable, permitiendo que la información recientemente recolectada actualice los modelos y las ubicaciones de búsqueda anteriores. El enfoque presenta la selección aleatoria de terrenos para realizar la búsqueda a partir de un marco de muestreo estratificado y pesado según la calidad del terreno, y requiere varias visitas por terreno. Es adaptable dentro de una temporada en la que se permita la mayor actividad de búsqueda dentro y alrededor de las ubicaciones de pruebas visuales y/o auditivas contundentes, y adaptable en las temporadas en que las relaciones de los hábitats permitan la modificación de los pesos de los estratos. Este enfoque estadísticamente riguroso es una mejora de la tarea de simplemente visitar el "mejor" hábitat de manera *ad hoc* porque podemos aprender del esfuerzo anterior y modificar la búsqueda conforme a ello. Los resultados de la temporada de búsqueda 2006-07 indican relaciones débiles entre la ocupación y el hábitat (aunque sugerimos modificaciones de los protocolos de medición de hábitat), y una probabilidad de detección muy baja, lo que sugiere que se requieren más visitas por terreno. Se tratarán los requisitos del tamaño de las muestras.

Crewe°, T. L.

Using Migration Monitoring to Detect Changes in Boreal Bird Populations. Tara L. Crewe, Bird Studies Canada, Canada. tcrewe@bsc-eoc.org.

The Canadian Migration Monitoring Network (CMMN) is a coast to coast network of independent stations which monitor the spring and/or fall migration of landbirds each year. As of 2007, 16 stations were in operation for 10 or more years. Data collected by CMMN stations is useful for monitoring bird population trends over large geographic areas, particularly for boreal breeding songbirds which are not well sampled by established breeding bird surveys. A strong correlation between migration monitoring trends at Long Point, Ontario and Breeding Bird Survey (BBS) trends for species that breed in southern Ontario, where BBS coverage is good, supports that migration monitoring is providing a reliable estimate of population change. Further, a lack of correlation between migration monitoring trends and BBS trends for boreal breeding birds, which are not well-covered by BBS, suggests that migration monitoring data might provide a more accurate estimate of population change for boreal birds. Using the past ten years (1996-2005) of migration monitoring data, trends in boreal bird populations tended to be variable among CMMN stations, but many species showed spatial patterns in the direction of trend (positive or negative) from western to eastern Canada. Ongoing feather isotope analysis will help delineate the approximate breeding origin of individuals captured at each CMMN station, which will provide insight into possible factors influencing regional population trends.

Criado°, J.; Sánchez, J. E.; Sandoval, L.; Sánchez, C.; Biamonte, E.; Martínez, D.; Zook, J.; Barrantes, G.; Araya, H.; Marín, M.; Monge, G.

Participation in Bird Conservation in Costa Rica. Juan Criado, UNOR-CR, San José, Costa Rica; Sánchez, J.E.,UNOR-CR, CR; Sandoval, L.,UNOR-CR, CR; Sánchez, C., UNOR-CR, CR; Biamonte, E., UNOR-CR, CR; Martínez, D., UNOR-CR, CR; Zook, J., eBird, CR; Barrantes, G.,UCR, CR; Araya, H.,UNOR-CR, CR; Marín, M., FUNGAP, CR; Monge, G.,CCT, CR. jcriado@fungap.org.

Since April 2006, the Costa Rican Ornithologist Union (UNOR-CR) is developing the IBA Program in the country, with the support of BirdLife International, the Foundation for Participatory Environmental Management (FUNGAP) and the Tropical Science Centre (CCT). The main objective of UNOR-CR is to contribute to bird conservation and to improve knowledge in bird conservation biology. The outcomes of the first phase of the IBA Program in Costa Rica are astonishing: over 54 % of the territory qualifies as Important Bird Area according to the scientific criteria agreed at international level. 21 bird species meet the A1 criteria

(Globally Threatened Species), 84 bird species meet the A2 criteria (Restricted Range Species), 102 species for A3 (Biome Restricted) and 94 species are considered for A4 (Congregatory).

In addition, 58 migratory bird species are of special importance for conservation in Costa Rica (out of the 260 migratory bird species occurring in the country) in conformity with the following criteria:

- Globally Threatened Species (BirdLife International 2006)
- Birds of Conservation Concern (USFWS 2002)
- Watch List species of Partners in Flight (Panjabi *et al.* 2005)
- High Concern waterfowl species (Kushlan *et al.* 2002)
- Highly Threatened shorebirds (US Shorebird Conservation Plan 2004)

Finally, we reviewed the Global Conservation Status of Globally Threatened Species in Costa Rica and updated a State list of Threatened Species. These preliminary results highlight the extraordinary importance of bird conservation in Costa Rica. It is a major challenge for all of us to reach sustainability maintaining the rich bird diversity in Costa Rica. We are establishing coordinated and participatory conservation strategies at national and international level, to connect and link extensive natural areas identified as IBA in the country.

Cruz-Angón°, A.; Greenberg, R.; Sillett, T. S.

Epiphytes and Avian Diversity: Experimental Results from Shade Coffee. Andrea Cruz Angón, CONABIO, Mexico; Greenberg, R., Migratory Bird Center, Smithsonian Institution, Washington, DC; Sillett, T.S., Migratory Bird Center, Smithsonian Institution, Washington, DC. acruz@conabio.gob.mx

Epiphytes are a common habitat feature of neotropical humid forests and agroforest canopies such as shade coffee plantations. Epiphytes have been proposed as key element that promotes higher bird diversity in tropical versus temperate forests. We conducted an experimental assessment in order to test the importance of epiphytes supporting birds' diversity and abundance, and their role as a key habitat feature. Two matching pairs of epiphyte removal and control plots were settled in a shaded Mexican coffee agroforest. We conducted bird censuses (2000 – 2001) to compare bird abundance and diversity among experimental plots. We used multistate, capture – recapture models to investigate how the experimental removal of epiphytes affected monthly survival and habitat selection based on the presence of epiphytes of individually colour banded Golden Crowned Warblers (GCWA) and Common Bush Tanagers (CBTA).

Overall 91 species of birds were recorded, 45 residents and 47 migrants. Bird abundance was significantly reduced in epiphyte-removed plots. We found that 11 resident species and 7 migrants were more abundant in plots with epiphytes. Only 2 migrants; and 1 residents were more abundant in epiphyte-removed plots. Hummingbirds and tanagers were primarily restricted to plots with epiphytes.

Capture – recapture models showed that survival rates were not dependent on the presence of epiphytes. However, CBTA were at least 5 times more likely to emigrate from plots where epiphytes were removed compared to control plots. Habitat-specific movement patterns were not detected in the GCWA. Unlike the warbler, CBTA depend upon epiphytes for nest sites and for foraging. These dispersal patterns imply that active habitat selection based on the presence or absence of epiphytes occurs in the CBTA on our study area. Our results emphasize the importance of epiphytes as a bird resource in Neotropical coffee agroecosystems.

Cruz-Nieto°, M. A.; Barajas, N.

Manejo de Pastizales en el Noreste de México. Miguel Angel Cruz-Nieto, Pronatura Noreste A.C., Mexico; Barajas, N., TNC, San Felipe, Chihuahua, México. mcruz@pronaturane.org

Presentamos las diferentes acciones y resultados relacionados al manejo de pastizales en cuatro regiones prioritarias para la conservación de las aves del Desierto Chihuahuense. Entre ellas se incluye la planificación de conservación a diferentes escalas. Pero especialmente se enfoca en las negociaciones y resultados de la participación activa de los propietarios en planes de conservación a nivel regional y de predio. Entre las acciones mas importantes resaltan la iniciativa de establecer un banco de forraje en el Rancho El Uno (18,500 ha), Janos Chihuahua. Modelos de restauración pasivos en llanos de Coahuila, Así como la restauración de pastizales aprovechando los escurrimientos de las lluvias. También el manejo del agua para restaurar los niveles y flujos hidrológicos y ecosistemas de pastizales inundables. Mostramos modelos comunitarios para el uso eficiente del agua a través de sistemas de riego por goteo y micro aspersión. El aprovechamiento de la madera de mezquite con fines artesanales. También incluyen acciones específicas parra el manejo de aves de pastizal vulnerables como el gorrión de Worthen (Spizella wortheni), cuyo éxito reproductivo es muy bajo. Además de la solución a conflictos en las fuentes de agua entre el hombre y el Zarapito de Pico Largo (Numenius americanus).

Cruz-Nieto°, M. A.; Ortíz-Machiel, S. G.

Ecotourism and Conservation of Old Growth Forests and Endemic Birds of Sierra Madre Occidental. Miguel Angel Cruz. Pronatura Noreste A.C, Monterrey, N.L. Mexico; Ortiz-Machiel, S. G. ITESM, Monterrey, N.L., Mexico. mcruz@-pronaturane.org.

We showed the results of 11 years of work related to tendencies in breeding populations; 700 nests of Rhynchopchyta. pachyrhyncha, a species in danger and associated to the scarce old-growth forest remnants in the Sierra Madre Occidental. We have focused on the negotiation process and the process to achieve the integration of three ejido communities to the conservation process. This includes incentives for environmental compensation, payment of environmental services, establishing ejido reserves, create several mechanisms related to Natural Protected Areas, permanent surveillance of the sites, control of cattle and hunting activities and illegal forestry logging, control of damaging fires, erosion control, establishing community nurseries and restoration of ecosystems, including experimental translocations to recuperate populations north of their distribution range, including the south of the United States. It also offers ecotourism opportunities and conservation benefits that have derived to other endemic birds and to indigenous people communities

Ecoturismo y Conservación de los Bosques Antiguos y las Aves Endémicas de la Sierra Madre Occidental.

Mostramos los resultados del trabajo de 11 años relacionado a la tendencia de la población reproductora; 700 nidos de Rhynchopchyta. pachyrhyncha, especie en peligro y asociada a los escasos remanentes de bosques antiguos de la Sierra Madre Occidental. Nos enfocamos en el proceso de negociación y la forma en como logramos la integración de tres comunidades

ejidales en el proceso de conservación. Lo cual incluye incentivos de compensación ambiental, pago de servicios ambientales, establecimiento de reservas ejidales, creación de diferentes figuras de Áreas Naturales Protegidas como
Santuarios, vigilancia permanente de los sitios, control del ganado y de la caza y aprovechamiento forestal ilegal, control de fuegos dañinos, obras para control de la erosión, establecimiento de viveros comunitarios y la restauración de ecosistemas, incluyendo traslocaciones experimentales para recuperar las poblaciones al norte de su rango de distribución que incluye el sur de Estados Unidos. Además de las oportunidades de ecoturismo y los beneficios de conservación que se han derivado hacia otras aves endémicas y comunidades indígenas.

Cruz-Nieto°, M. A.; Ortíz-Machiel, S. G.

Protection of Old-Growth Forest in the Sierra Madre, Mexico. Miguel Angel Cruz-Nieto, Pronatura Noreste A.C., Mexico. mcruz@pronaturane.org.

We present an innovative mix of legal tools that have been implemented for the protection of the last old-growth forests in northern Sierra Madre Occidental. This region has suffered one of the highest extinction rates in North America; some of the strongest images are those of the Imperial Woodpecker and of various native communities still found in this region. These forests shelter the highest concentrations of charismatic birds such as the Thick-billed Parrot, Eared Trogon, Northern Goshawk and Spotted Owl. The protection tools that we have implemented in the last 10 years include creating Sanctuaries, Biosphere Reserves, reclassification of Natural Protected Areas, and implementing Action Plans to rescue priority conservation birds. The project addresses a process currently under way to create a network of reserves through Acquisition of Forestry Rights, Incentives for Environmental Services (water harvest and those derived from biodiversity), Conservation Contracts, Acquisition of Possessions, Conservation Certificates and incentives for Environmental Compensation. Other actions include follow-up of the delicate negotiations with owners and long-term agreements that include indigenous communities, restrictions and burdens imposed on private and ejido lands, and long-term monitoring and surveillance.

Mostramos una novedosa mezcla de esquemas legales que se han implementado para la protección de los últimos bosques antiguos al norte de la Sierra Madre Occidental. Una región que ha sufrido una de las mayores tasas de extinción de Norte América, donde sobresale las imágenes revividas del Carpintero Imperial y de diversas comunidades autóctonas - algunas cuales aun persisten en esta región. Estos bosques albergan las mayores concentraciones de aves carismáticas como Thick-billed Parrot, Eared Trogon, Northern Goshawk y Spotted Owl. Los esquemas de protección que hemos implementado en los últimos 10 años incluyen la creación de Santuarios, Reservas de las Biosferas, recategorizaciòn de Áreas Naturales Protegidas y la implementación de Planes de Acción para el rescate de aves prioritarias de conservación. El proyecto se enfoca en el proceso que se ha llevado a cabo para crear una red de reservas a través de: Adquisición de Derechos Forestales, Incentivos por Servicios Ambientales (cosecha de agua y derivados de la biodiversidad), Contratos de Conservación, Adquisición de Posesiones, Certificados de Conservación e incentivos por Compensación Ambiental. Además del seguimiento de las delicadas negociaciones con propietarios y de los acuerdos a largo plazo que incluyen a las comunidades indígenas y de las restricciones y gravámenes impuestas a los terrenos tanto privados como ejidales y del monitoreo y vigilancia a largo plazo.

Dale°, B. C.; Wiens, T. S.; Hamilton, L. E.

Abundance of Two Grassland Songbirds in an Area of Natural Gas Infill Drilling in Alberta, Canada. Brenda C. Dale, CWS, Canadian Wildlife Service, Canada; Wiens, T.S., CWS, Canada; Hamilton, L.E., U of A., Canada. Brenda.dale@ec.gc.ca

The Canadian Wildlife Service conducted a biophysical inventory at CFB Suffield in 1994 and 1995 in preparation for creation of a National Wildlife Area (NWA). A low density of gas wells was present then but infill drilling began in 1997 and by 2005 the number of wells had doubled in most of the area and increased 4 fold in some portions. Annual monitoring of a portion of the NWA began in 2000. There is almost no published literature on the effect of gas wells and associated infrastructure or activities on grassland bird populations. We examined our biophysical and monitoring data for possible responses to the infill drilling. We focused our attention on two species with very different requirements. Sprague's Pipit (*Anthus spraguei*) occurs only in the Great Plains and is intolerant of bare ground or non-native vegetation. Savannah Sparrow (*Passerculus sandwichensis*) occurs in grasslands throughout North America and tolerates non-native grasses and rank cover. We compared years with similar precipitation histories but different well densities. Repeated measures testing found significant differences between low and high well densities in the number of Sprague's Pipits and Savannah Sparrows observed. During the Biophysical inventory Sprague's Pipit was common and Savannah Sparrow was rare. By 2005 Sprague's Pipit had declined and Savannah Sparrow had increased as is consistent with observed effects of the industrial activity and known habitat preferences of these two species. Mapping of territory boundaries in 2007 indicated pipit territories rarely crossed roads or trails.

Abundancia de dos Aves Canoras de Pastizal en un área de Perforación de Gas Natural en Alberta, Canadá.

El servicio canadiense de vida silvestre llevó a cabo un inventario biofísico en CFB Suffield en 1994 y 1995 en preparación para la creación de un Area Nacional de Vida Silvestre (NWA). En esos años la densidad de pozos de gas era baja, pero en 1997 inició la perforación de relleno y para 2005 el número de pozos se había duplicado en la mayor parte de el área e incluso se cuatriplicó en algunas zonas. En el año 2000 se inició el monitoreo anual de una porción del NWA. Existe muy poca literatura publicada sobre el efecto de los pozos de gas, así como de la infraestructura y actividades asociadas, en poblaciones de aves canoras de pastizal. Examinamos nuestros datos biofísicos y de monitoreo para identificar posibles respuestas a las perforaciones de relleno. Centramos nuestra atención en dos especies con requisitos muy diversos. *Anthus spraguei* habita solamente en las Grandes Planicies y es intolerante al suelo desnudo o a la vegetación exótica. *Passerculus sandwichensis* habita en pastizales alo largo de Norteamérica y tolera pastos exóticos y cobertura espesa. Comparamos años con historias similares de precipitación pero differentes densidades de pozos. Análisis de medidas repetidas mostraron diferencias significativas en el número de individuos observados entre años con densidades de pozos bajas y años con densidades altas, para ambas especies. Durante el inventario biofísico *A. spraguei* era común y *P. sandwichensis* era raro. Para 2005 *A. spraguei* había declinado y *P. sandwichensis* había aumentado, resultados que sonconsistentes con los efectos observados de la actividad industrial y con las preferencias conocidas del hábitat de estas dos especies. El mapeo de los límites territoriales en 2007 indicó que los territorios de *A. spraguei* raramente cruzan caminos o senderos.

Daley°, S.; Gallitano, L.; Tomas, S.

Maximizing the Economic and Conservation Potential of Birding Trails with Business and Community Training. Salinda Daley, NCWRC, Raleigh, NC; Gallitano, L., Audubon NC, Raleigh, NC; Tomas, S., NCSU, Raleigh, NC. info@ncbirdingtrail.org.

Birding trails have the potential to strengthen local economies due to increased tourism-related revenues. One way to maximize the benefits that birding trails can bring to a community is to provide tools and training to business and community interests to help them cater to the niche market of visiting birders and nature tourists. Such training can help to establish a local network of interested individuals, increase cooperative marketing opportunities, and provide a source of local support and information sharing. These trainings can also establish a sample population who can be tracked in the future to document changes in economic factors used to measure the success of birding trails (e.g., increased spending, increased visitation rates, new business ventures). The North Carolina Birding Trail (NCBT) offers a case study on this topic. The NCBT has established a Birder Friendly Business/Community training program designed to maximize the benefits of the Birding Trail as it is implemented statewide. Through focused presentations and group work, this one-day training covers topics such as birding basics, birders as clients, enhancing your business and community for birders, hospitality and etiquette, and conservation practices. The degree to which training ideas are implemented by participants, post-training, seems to relate to the degree of personal commitment, community connectivity and networking at the training.

Maximizando el Potencial Económico y de Conservación de los Senderos para la Observación de Aves, con Entrenamiento a Comercios y Comunidades.

Los senderos para la observación de aves tienen el potencial de fortalecer las economías locales debido a rentas provenientes del turismo. Una manera para máximizar los beneficios que los senderos para la observación de aves pueden brindar a una comunidad, es proveer herramientas y entrenamiento a comercios y comunidades para ayudarlos a proveer al mercado un nicho para observadores de aves que visitan el área y turistas con interés en la naturaleza. Un entrenamiento como este puede ayudar a establecer una red local de personas interesadas, aumentar oportunidades de colaboración para la venta de servicios, y proveer una fuente de apoyo local e intercambio de conocimiento. Los talleres de entrenamiento también pueden constituir una población de muestra para monitorear los cambios ocurridos en los factores económicos utilizados para medir el éxito de los senderos para la observación de aves (por ejemplo, incremento de gastos, incremento en la tasa de visitas, nuevos negocios). El Sendero de Observación de Aves de Carolina Norte (NCBT, por sus siglas en inglés) ofrece un ejemplo como este. El NCBT ha establecido un programa de entrenamiento para comerciantes y comunidades "Amistoso para los Observadores de Aves." El programa esta diseñado para maximizar los beneficios provenientes de estos senderos al implementarlos a lo largo del Estado. A través de presentaciones focalizadas y trabajo en grupo, este taller de un día incluye temas básicos sobre observación de aves, observadores de aves como clientes, mejoramiento de comercios y comunidades para recibir -y ofrecer servicios a- observadores de aves, hospitalidad y etiquetado, y practicas de conservación. El nivel en que las ideas del taller están siendo implementadas por los participantes al concluir el taller parece estar relacionado con el grado de compromiso personal, la conectividad de la comunidad, y los contactos realizados durante el taller.

Dauphiné*, N.

Impacts of Domestic Cats on Migratory Birds in North America. Nico Dauphiné, UG, Athens, GA. dauphine@uga.edu.

American birds face an estimated 120 million exotic predators in the form of free-roaming domestic cats (*Felis catus*), which are estimated to kill between 0.5 and 3 billion birds every year in the U.S. Free-ranging cats have contributed to declines and extinctions of birds worldwide, and, after habitat destruction, may be the single biggest cause of global bird extinctions. In this presentation, I review recent scientific research on the impacts of free-ranging cats on bird populations in North America, with an emphasis on migratory birds. Studies have shown that cats pose significant threats to many bird populations through predation of adult, nestling, and juvenile birds, as well as through competition with native predators such as raptors. Evidence indicates that cats are the most important predators of birds in many rural areas and the single most significant threat to some bird populations, especially grassland birds and other species that forage or nest on or near the ground. Recent research has also shown that birds demonstrate population-level responses to predation risk by altering behavioral and reproductive traits. Thus, in addition to direct mortality, cats may moreover cause sub-lethal reductions in fecundity or survival associated with stress in prey species, with the resulting potential to further reduce bird populations. Birds affected include PIF Watch List and federally endangered species. Taking effective action for bird conservation in this context will require strengthening and enforcing laws that prohibit free-ranging cats as well as substantially increasing public education and outreach efforts about this issue.

Dauphiné*, N.

The Live Bird Trade in Northern Peru. Nico Dauphiné, UG, Athens, GA. dauphine@uga.edu.

Peru is one of many Neotropical countries where trapping and selling wild-caught birds provides a major source of income to rural people who may find few other income opportunities. Although laws are in place to regulate the trade, these laws appear to be little-known and poorly enforced in northern Peru. Between 2003 and 2005, I found evidence of a ubiquitous and thriving live bird trade in the northern Peruvian departments of Loreto and Amazonas, both in remote, rural areas, and in urban centers such as Iquitos and Bagua. Wild-caught birds observed in captivity included a number of species of Columbidae, Psittacidae, and Ramphastidae, as well as passerines, raptors, and species not traditionally considered to be targeted for the pet trade, such as Yellow-tufted Woodpecker *Melanerpes cruentatus* and Shiny Cowbird *Molothrus bonariensis*. Trapping of birds for the pet trade appears to occur wherever there are human populations, including protected areas such as the Allpahuayo-Mishana National Reserve, where wildlife is protected by law from commercial exploitation. However, trade in live birds was observed less frequently in indigenous-controlled areas of northern Peru than in other areas. Further research needs are discussed, as well as obstacles and potential approaches to improving bird conservation in the context of the live bird trade in northern Peru.

El Comercio de Aves Vivas en el Norte del Perú.

Perú e uno de los muchos países tropicales de América en donde la captura y venta de aves silvestres proporciona una fuente importante de ingresos a las personas de zonas rurales,

personas que pueden encontrar muy pocas oportunidades en donde obtener ingresos. Aunque las leyes para regular el comercio han sido promulgadas estas leyes estas leyes parecen ser poco conocidas y apenas aplicadas en el norte del Perú. Entre el año 2,003 y el año 2,005, yo encontré pruebas de un común y próspero comercio aves vivas en los departamentos de Loreto y Amazonas en el norte de Perú, tanto en remotas áreas rurales como en las ciudades de Iquitos y Bagua. Las aves silvestres capturadas que se observaron en cautividad incluían diferentes especies de palomas (Columbidae), loros (Psittacidae) y tucanes (Ramphastidae), también incluyeron otros pájaros (passerinas), aves de presa y otras especies no buscadas ni consideradas por el comercio de mascotas, tales como: el Carpintero Emplumado Amarillo , *Melanerpes cruentatus*, y el Tordo Brilloso, *Molothrus bonariensis*. La captura de aves para el comercio de mascotas parece ocurrir donde quiera que encontremos poblaciones humanas, incluyendo áreas protegidas tales como la Reserva Nacional Allpahuayo-Mishana, en donde la ley protege a la fauna silvestre de la explotación comercial. Sin embargo, el comercio de aves vivas fue observado con menos frecuencia en zonas controladas por indígenas en el norte del Perú que en otras áreas. Las necesidades de investigar más allá son discutidas, también los obstáculos y potenciales acercamientos para mejorar la conservación de aves en el contexto del comercio de aves vivas en el norte del Perú.

Dauphiné*, N.; Cooper, R. J.

Conservation Meets the Cat Lady: Protecting Bird Species of Continental Importance in Our Own Backyards. Nico Dauphiné, UG, Athens, GA; Robert J. Cooper, UG, Athens, GA. dauphinen@forestry.uga.edu.

We present results of bird monitoring and domestic cat (*Felis catus*) trapping in a residential lot over multiple years. The study site is a 0.12 ha suburban yard located in Athens, Georgia, which features tree and shrub cover, artificial water sources (bird baths) and bird feeders that are regularly maintained. Between 2003 and 2007, we detected a total of 75 native bird species at the site, including 18 Partners in Flight Watch List species. The site provides year-round habitat for breeding species including Brown-headed Nuthatch, Carolina Wren, and Brown Thrasher, stopover habitat for Neotropical-Nearctic migrants such as Wood Thrush, Prothonotary Warbler, and Canada Warbler, and wintering habitat for species such as Yellow-bellied Sapsucker and White-throated Sparrow. Between 2004 and 2005, we observed evidence of numerous bird predation events and attempts at the site by free-roaming cats of unknown ownership, and an associated decrease in bird abundance. Between 2005 and 2007, we trapped and removed 28 cats from the site, of which 26 (93%) were feral (unsocialized) or stray (unclaimed). People who attract birds to their yards in the presence of free-roaming cats may unwittingly expose birds to high predation risk. We urge people to be aware of the value of their own backyards to breeding, migrating, and wintering birds, to understand the serious threats posed to adult, juvenile, and nestling birds by cat predation, and to take action to protect birds from the large and increasing numbers of free-roaming cats in human-dominated environments.

Dauphiné*, N.; Cooper, R. J.

Understory Bird Community Responses to Non-mechanized Selective Logging in Neotropical Forests. Nico Dauphiné; Cooper, R.J., UG, Athens, GA. dauphine@uga.edu.

We examined the effects of non-mechanized selective logging on understory bird communities in humid Neotropical forests in the departments of Amazonas and Loreto, northern Peru. Between February and November 2005, we sampled birds using constant-effort mist netting at 21 forest sites with different logging histories between 100 and 800 m in elevation. Birds in forests logged 1, 5, and 9 years previously were compared with those in unlogged forests using a sample effort of 4439 net-hours. We made 1106 captures of 130 species belonging to 21 families. The Thamnophilidae (typical antbirds) and Trochilidae (hummingbirds) were the best-represented families, with 30 and 20 species, respectively. Rare species, which were defined as those comprising less than 2% of total captures, made up the majority (86%) of captures, and included 3 Neotropical-Nearctic migrant species (Canada Warbler, Swainson's Thrush, and Gray-cheeked Thrush). We assumed that not all species were detected and used a jackknife method to estimate species richness for each site based on empirical species abundance distributions from our capture data. In Amazonas, understory bird species richness increased between 1-5 years after selectively logging 2-3 trees/ha without the use of heavy equipment; however, species richness in both post-logging treatments was similar to that in unlogged forest. In Loreto, species richness in 1-yr-old logged forest and 9-yr-old logged forest was lower than in unlogged forest, while species richness in 5-yr-old logged forest was similar to unlogged forest. We discuss the implications of these results for forest management for bird conservation in the Neotropics.

Dauphine°, N.; Diaz Alvan, J.; Cooper, R. J.; Brooks, D. M.

Distributions of Wintering Neotropical-Nearctic Migrants in Western Amazonia. Nico Dauphine, UG, Athens GA; Diaz Alvan, J., Instituto de Investigaciones de la Amazonía Peruana, Iquitos, Peru; Cooper, R.J., UG, Athens GA; Brooks D.M., Houston Museum of Natural Science, Houston TX**.** dauphinen@forestry.uga.edu

We present and discuss records of long-distance Neotropical-Nearctic migrants wintering in western Amazonia, including: Blue-winged Teal *Anas discors*, American Golden Plover *Pluvialis dominica*, Spotted Sandpiper *Actitis macularia*, Black-billed Cuckoo *Coccyzus erythropthalmus*, Yellow-billed Cuckoo *Coccyzus americanus*, Western Wood Pewee *Contopus sordidulus*, Alder Flycatcher *Empidonax alnorum*, Red-eyed Vireo *Vireo olivaceus*, Swainson's Thrush *Catharus ustulatus*, American Redstart *Setophaga ruticilla*, Canada Warbler *Wilsonia canadensis*, Summer Tanager *Piranga rubra*, Scarlet Tanager *Piranga olivacea*, and with a special focus on Gray-cheeked Thrush *Catharus minimus*. Records of Neotropical-Nearctic migrants are from two sources: fieldwork conducted between 2004 and 2005, and a review of museum collections between 1923 and 1987. Fieldwork included transect counts and constant-effort mist netting in humid tropical forest sites in Amazonas and Loreto departments, northern Peru, between October 2004 and November 2005, for a total sample effort of 150 hours of field surveys and 4439 mist net-hours. Gray-cheeked Thrush, which we recently recorded for the first time in Allpahuayo-Mishana, is a rare and inconspicuous boreal winter resident in lowland forests of northern South America, where it appears to occur at low densities in forest understory; habitat loss on its wintering grounds has resulted in serious conservation concerns. Findings of Neotropical-Nearctic migrants detected within the areas surveyed are discussed with an emphasis on habitat conversion and possible conservation strategies on wintering grounds.

Dayer*, A. A.

Population Objectives and the Human Mind: Educational and Social Marketing Value of Numbers. Ashley Dayer, KBO, Ashland, OR. aad@klamathbird.org.

In order to gain various constituents' support for bird conservation efforts, it is necessary to foster awareness and, in many cases, encourage attitude change. The process of conducting educational and social marketing activities to lead to attitude change is referred to as persuasion in the field of social psychology. Persuasion literature can provide insight into how this process occurs and how to effectively utilize the attractiveness of measurable objectives in persuading constituents to support bird conservation. Research in the field of human dimensions has revealed that the public prefers allocation of conservation funds to wildlife in decline over those that are common. Further, psychology literature indicates that the persuasive power of an argument can be enhanced through quantitative data. Yet, caution is prudent as quantitative evidence can also lead to disagreement and lack of persuasive effectiveness. Given such theory and past research, we will discuss implications for implementing education and outreach programs to advance conservation through the use of population objectives.

Dayer*, A. A.; Alexander, J. D.; Stephens, J. L.

Engaging Educator Expertise in Decision Support Tool Delivery. Ashley Dayer, KBO, Ashland, OR; Alexander, J., KBO, Ashland, OR; Stephens, J.L., KBO, Ashland, OR; aad@klamathbird.org.

In translating science to land managers and landowners we aim to activate bird conservation goals in practices on the ground. The accomplishment of preferred outcomes, such as incorporation of conservation objectives into federal land management plans and projects, relies on effective communication and education techniques. Successful communications campaigns and conservation education efforts involve phases of planning, implementation, and evaluation—each of which include multiple steps. We will review these steps and offer examples of potential communication strategies and actions and teaching techniques found most appropriate for adults. This information will aid biologists in science delivery and also suggest opportunities for integration with the education community. Educators are skilled in following such principles for effective communication and education. We will discuss how educator expertise can be harnessed in decision support tool delivery to lead to the shared goal of bird conservation. The recently developed and growing Bird Education Network offers great potential for linking biologists and educators in such a manner.

Dayer, A. A.; Burris*, E.

Linking Birding Trails with Communities: Place-based Youth Education. Ashley Dayer, KBO, Ashland, OR; Burris, E*, SOU, KBO, Ashland, OR. aad@klamathbird.org.

Birding trails have been embraced as a tool for tourism and economic development throughout the United States. These routes connecting areas rich with birds are often in the backyards of rural communities unaware of bird conservation issues. Tourists are often the target audiences for trails; yet, the trails are ideal for cultivating place-based education efforts, appreciation of local natural treasures, and the next generation of wildlife watchers and conservationists. Novel efforts in rural southern Oregon and northern California along two trails demonstrate the effectiveness. Nonprofit science, education, and environmental organizations have joined together with local schools, state extension service, county government, and visitor bureaus. Birding trail curriculum and resources have been developed, garnered local support, and demonstrated success through evaluation. Thus, these community development initiatives have been embraced locally not only for economic benefits but for education benefits and local natural appreciation as well. Creating place-based education around birding trails and local wildlife hotspots offers great potential for the future throughout the country.

Conectando Senderos para la Observación de Aves con Comunidades: Educación de Jóvenes de las Comunidades Locales.

Los senderos para la observación de aves han sido utilizados como herramienta para el turismo y el desarrollo económico a lo largo de los Estados Unidos de Norte América. Estas rutas que conectan áreas con riqueza de aves, están ubicadas muchas veces cerca de comunidades rurales que suelen desconocer asuntos de conservación de aves. Con frecuencia, los turistas son la audiencia objetivo de estos senderos. Sin embargo, los senderos también son ideales para cultivar esfuerzos de educación integrando a las comunidades locales, apreciar las bellezas naturales del lugar, y formar la próxima generación de observadores de vida silvestre y conservacionistas. Esfuerzos innovadores en áreas rurales del sur de Oregon y el norte de California en dos senderos para la observación de aves han demostrado su efectividad. Organizaciones no gubernamentales que trabajan en ciencia, educación y medio ambiente, han unido esfuerzos con escuelas locales, el servicio de extensión del estado, el gobierno local, y la oficina de visitantes. En este caso se desarrollaron materiales y recursos educativos sobre senderos de observación de aves, se obtuvo apoyo local, y se demostró su éxito a través de evaluación. Así, estas iniciativas de desarrollo comunitario han sido usadas localmente no sólo para obtener beneficios económicos sino también para fines educativos y para apreciar la belleza natural del lugar. La educación a través de senderos de observación de aves y vida silvestre integrando a las comunidades locales puede ofrecer un potencial excelente para el futuro a lo largo del país.

Delaney°, D.

Wind Farms and Bird Populations of The Lower Gulf Coast of Texas: A Landowner's Perspective. Dave Delaney, King Ranch, Inc., Kingsville, TX. ddelaney@king-ranch.com.

Kenedy County lies in the Texas Gulf Coastal Bend which has been referred to as the "Last Great Habitat". The biodiversity of this area is similar to other protected national treasures such as the Florida Everglades and the Yellowstone Ecosystem. Today the region is faced with the construction of at least two wind energy developments located adjacent to the Laguna Madre. Approximately 60,000 acres of relatively pristine natural grasslands could potentially be converted to industrial land that includes hundreds of wind turbines as well as the road and transmission line infrastructure associated with these developments. Some of the potential negative effects of sitting these facilities immediately adjacent to the Laguna Madre will include: habitat fragmentation, migratory and resident bird mortality, endangered or threatened species "take", wetland destruction, and hydrological disruption. Unfortunately, flora and fauna have no voice in the political process and it is difficult to put a financial value on the societal benefits of undeveloped property. In addition, no State or Federal agency has assumed responsibility for permitting, sighting, monitoring and oversight, or environmental bonding which are usually mandated for industrial sites with a smaller footprint Fortunately, individual conservation groups and property owners (who take a generational view of their stewardship re-

sponsibility) have refused to "undersell" these values and benefits by granting perpetual easements in sensitive habitat for the sake of short term economic gain. It will be my intention in this paper to address some of the risks and what is at stake in this particular geographic area.

Dettmers, R.°; Hartley, M. J.; Hodgman, T. P.

An Assessment of PIF Population Estimates for Forest Birds in Northern Maine. Randy Dettmers, USFWS, Hadley, MA; Hartley, M.J., USFWS, Hadley, MA; Hodgman, T.P., MDIFW, Bangor, ME. randy_dettmers@fws.gov.

Hagan et al. (1997) estimated bird populations in a 1,270 km^2 landscape in Northern Maine dominated by industrial forestland, from two visits to 387 point counts distributed across forest types. Data from six Breeding Bird Survey routes in the same landscape were used to generate PIF population estimates (Rosenberg and Blancher 2005). Of 85 species observed, population estimates for 93% of species were higher according to Hagan et al. Over 70% of species had population estimates that were >5 times higher than PIF estimates; the median ratio between the two indices was >8:1. Six species had higher population estimates using the PIF method; three of these were rare species not detected by Hagan et al. The two most likely reasons for discrepancies between survey methods are: 1) greater detection rates by Hagan et al. using 10-minute count periods and two visits, and 2) the likelihood that Hagan et al. overestimated abundances within 50m-radius circles. When these biases were corrected in the data, estimates by Hagan et al. averaged about twice as high as PIF estimates. Though PIF population estimates are generally considered to be indices, they have been used to set population and/or habitat objectives at the continental and regional scale. Such objectives will be more meaningful if we increase our understanding of how PIF population estimates compare to actual values.

Dettmers°, R.; Altman, B.

Population Objectives: A Biological Perspective. Randy Dettmers, USFWS, Hadley, MA; Altman, B., American Bird Conservancy, Corvallis, OR. randy_dettmers@fws.gov.

The concept of setting wildlife population objectives as part of a process for setting the direction for wildlife management and conservation activities has been evolving within the wildlife management community for many years. From Aldo Leopold's land ethic with its implicit biological objectives of sustaining healthy wildlife communities, to early game management approaches focusing on habitat objectives intended to produced desired population levels, to direct population objectives as recovery targets for rare and endangered species, the rigor and explicitness with which population objectives are developed has been increasing over time. With the advent of and refinements to the North American Waterfowl Management Plan, Partners in Flight, and other bird conservation initiatives, explicit population objectives have been promoted as necessary starting points for developing detailed conservation and management plans within decision-making and adaptive management frameworks where population responses are the ultimate measures of success. In this presentation we will review some of the numerous reasons for setting population objectives, discuss the intersection of biology and socio-economic factors that influence population objectives, and review approaches that have been used throughout conservation biology for developing population objectives. We will also provide examples of the positive value that population objectives can provide to management and conservation efforts, including examples from endangered species, waterfowl, other game species, and nongame species.

Díaz-Méndez°, S. N.

The Caribbean Endemic Bird Festival: An Effective Outreach Tool for the Conservation of Birds in the Region. Sheylda N. Díaz-Méndez, Utuado, PR. otoarina77@yahoo.com

The Society for the Conservation and Study of Caribbean Birds (SCSCB) celebrated the 6th edition of the Caribbean Endemic Bird Festival (CEBF) from 22 April to 22 May 2007. A total of 18 countries participated, including 6 new countries, a record success! We accomplished our purpose of increasing public awareness of the region's high endemism and rich bird life through many activities. Caribbean coordinators reported celebrations that included bird ecology games, art competitions, movie nights, bird costume competitions, birding field trips, radio quizzes and new talk show in 2 countries! A total of 6 organizations received small grants from SCSCB to help them carry out festival activities. For the first time we adopted a conservation theme, Climate Change. The theme proved to be the perfect opportunity to educate about this issue—how it affects our region's birds and the actions we could take to counter the threat. Most of us used the Global Warming fact sheet and the poster designed exclusively for the CEBF and materials from IMBD that included a climate change education booklet among others.

El Festival de Aves Endémicas del Caribe: Una Herramienta Effectiva para la Conservación de las Aves en Nuestra Región.

La Sociedad para la Conservación y el Estudio de las Aves del Caribe (SCSCB) celebró su 6ta edición del Festival de Aves Endémicas del Caribe (CEBF) desde el 22 de abril hasta el 22 de mayo del 2007. ¡Un total de 18 países participaron incluyendo 6 nuevos países, un éxito récord! Cumplimos con nuestro propósito de aumentar la conciencia del endemismo de cada región y la rica biodiversidad en aves de cada país a través de distintas actividades. Los coordinadores del Caribe reportaron actividades que incluyen juegos ecológicos de aves, competencias de arte, noches de película, competencias de disfraces de aves, viajes de campo para observar aves de bosque y marinas, quizzes por radio y nuevos programas de radio para 2 países! Un total de 6 organizaciones recibieron becas de la SCSCB para ayudar en la realización de sus actividades del festival. Por primera vez adoptamos un tema de conservación, el Cambio Climático. El mismo probó ser un excelente foro para educar sobre este tema, sus efectos en nuestras aves y lo que podemos hacer para contrarrestar esta amenaza. La mayoría de nosotros utilizamos la hoja de datos sobre el Cambio Climático y el afiche diseñado exclusivamente para nuestro CEBF además de utilizar los materiales del Día Internacional de Aves Migratorias que incluía una revista educativa sobre el Calentamiento Global entre otros.

Dietsch°, T.

Assessing Conservation Value in Shade-Grown Coffee Landscapes: A Model for Market-Based Conservation Efforts and Ecosystem Management in a Global Context. Thomas Dietsch, UCLA, CA, Thomas.Dietsch@-ucla.edu.

Eco-friendly certification is an expanding addition to traditional conservation efforts. Market-based conservation programs can be viewed as ecosystem management in a global context. Ecologists can provide a critical feedback role to these efforts by evaluating their relative contribution to conservation. Such research is needed to help consumers identify those programs that

are most effective and to encourage certification programs to adjust criteria to meet specific conservation needs. As an early effort in a globally-traded commodity, shade-grown coffee certification is an important test case for evaluating such programs. With a growing literature, there is now considerable research available to review coffee certification. A general research approach for assessing conservation value in coffee agroecosystems should include the use of a conservation standard. Using tropical montane forest to evaluate conservation value for birds, I discuss changes in the bird community across a gradient of coffee management systems found in Chiapas, Mexico. Using a similar analytical method, a recent meta-analysis of research conducted throughout Central America supports the within-farm habitat approach used for most shade coffee certification. Finally, shade coffee certification should be considered along side other sustainable coffee programs competing for consumer attention, including Organic and Fair-trade certification. Landscape level results suggest that these seemingly separate certification efforts are not only compatible, but can be linked to ease consumer decision-making.

DiGaudio°, R.; Hickey, C.; Geupel, G. R.

Measuring Bird Response to Easement, Restoration, Enhancement, and Incentive Programs in California's Central Valley. Ryan DiGaudio, PRBO, Petaluma, CA; Hickey, C., PRBO, Petaluma, CA; Geupel, G., PRBO, Petaluma, CA. rdigaudio@prbo.org

In California's Central Valley, approximately 94% of land is under private ownership, including the majority of its important wildlife habitats. To evaluate private lands programs in the Central Valley (e.g., NRCS's Wetlands Reserve Program), we monitored avian use of restored native grassland, riparian, and managed wetland habitats for three years (2004-2006) during spring and summer. We also monitored post-harvest flooded croplands during the fall migration period in 2005 and 2006. A total of 140 species were detected in managed wetlands, 65 in flooded croplands, 66 in grasslands, and 117 in riparian. A total of 18 special status species were detected for all habitat types combined. In riparian habitat, bird species diversity was significantly higher at restoration sites ≥5 years old than sites <5 years old. Predictive linear models showed that many riparian bird species appeared to respond to local habitat features such as percent shrub cover, tree species richness, and specific plant species. We will also discuss how flooded croplands can provide an effective surrogate habitat for both migrant and resident waterbirds in the Pacific Flyway, especially during fall migration when most managed wetlands are dry. These results provide important insights into management practices and how private lands programs are beneficial for multiple species in the Central Valley, including many species of special concern.

Dobson°, A. F.; Madeiros, J.

The Effect of Climate Change on Bermuda's Breeding Seabirds. Measures to Assist Future Breeding Success. Andrew F. Dobson, Bermuda Audubon Society, Bermuda; Madeiros, J., Dept. of Conservation Services, Bermuda. adobson@-warwickacad.bm

Only three migrant species of breeding birds occur in Bermuda. All of them are seabirds: Bermuda Petrel Pterodroma cahow, White-tailed Tropicbird Phaethon lepturus and Common Tern Sterna hirundo. All three species have suffered a serious decline in populations since human settlement in the early 1600's. Today, global warming poses a further threat to these species with rising sea levels and an increased frequency and intensity of severe storms. Hurricane Fabian in 2003 had a significant effect on cliff nest sites. However, measures were already underway to mitigate the effect of such storms and increase breeding success. The success of artificial burrows, styrofoam igloos and the translocation of birds will be explained.

Doodnath°, L. W.

Is Conservation of Birds in Trinidad and Tobago Necessary? Lester W. Doodnath, The University of the West Indies, St. Augustine, Trinidad and Tobago. doodnathlw@-hotmail.com.

There are 467 species of birds recorded for the Caribbean islands of Trinidad and Tobago with only one endemic present. The majority of these birds are also found in the nearby South American mainland or in the Antillean chain of islands. Therefore, conservation efforts for these species are not of immediate concern. Of the 467 species, 92 are rare locally; the greater percentage of these 92 species is migratory. The avifauna of Trinidad comprises 443 species of which 168 are regular migrants. Migratory birds in Trinidad may be threatened by habitat loss, hunting and pollution. A rice field study (2001–2002) found 83 species of birds, of which 35 were migrants. Conservationists should focus their efforts on identifying substitute wetland habitats, such as rice fields, for these migrant birds.

Dorr°, Brian S.; Washburn, B. E.; Olexa, T. J.

Assessing Bird-aircraft Strike Hazard (BASH) Risk Associated with Breeding and Migrating Osprey. Brian S. Dorr, USDA/APHIS/WS/NWRC, Mississippi State, MS; Washburn, B.E., USDA/APHIS/WS/NWRC, Sandusky, OH; Olexa, T.J. brian.s.dorr@aphis.usda.gov

The Osprey (*Pandion haliaetus*) is one of the most widely distributed and well studied bird species of the Northern Hemisphere; however, little is known about their potential impacts to military flight operations. A Department of Defense Legacy Natural Resources Program-funded multi-agency research project examining the strike-risk posed by breeding and migrating Osprey was initiated in 2006. During the 2006 nesting season, six adult Osprey were live-captured, fitted with GPS-capable satellite transmitters, and released from selected nest locations near Langley Air Force Base, Virginia (U.S.A.), in the Mid-Atlantic Chesapeake Bay Region. We monitored satellite-tagged Osprey movement patterns of fitted Osprey by tracking them during the breeding, migration, and wintering periods via the ARGOS satellite network. Movement information collected from breeding Osprey was cross referenced to Langley Air Force Base flying operations to assess the risk breeding Osprey pose to military aircraft near the airfield. In addition, migratory patterns of Osprey were evaluated to assess the risk migrating Osprey to military aircraft operations along the Eastern seaboard. Incorporation and integration of Osprey movement information (e.g., timing, travel routes) into military flight mission planning systems will increase pilot awareness of potential Osprey-aircraft strikes during critical time periods and will allow for military flight operations to occur at times and locations that minimize the risk of Osprey-aircraft collisions.

Drew°, C. A.; Stanton, J.; McKerrow, A.

Conserving King Rail in the Roanoke-Tar-Neuse-Cape-Fear Ecosystem: Using Bayesian Belief Networks to Guide Research and Management Efforts. C. Ashton Drew, NCSU Zoology, Raleigh, NC; Collazo J., NCSU-USGS, Raleigh, NC; Stanton, J., USFWS, Columbia, NC; McKerrow, A., NCSU Zoology, Raleigh, NC. cadrew@ncsu.edu

To fulfill its conservation mandate, the US Fish and Wildlife Service must be able to step-down broad, nationally-defined population and habitat objectives to management actions and measures of success on individual refuges. Yet, species and environmental data are rarely available at the necessary spatial extent and grain to inform local management decisions. Therefore, we are developing and testing methods to enhance the predictive resolution of species distribution maps using Bayesian Belief Networks (BBN). BBN are commonly employed in situations where risk-prone, value-laden decisions must be made with incomplete data. In our models, initial beliefs constructed from literature review and expert opinion, will then be tested and updated with each season's field data. Using our King Rail (*Rallus elegans*) model, we will demonstrate how this approach could help refuge managers (1) see how their terrestrial and aquatic habitats contribute to broader-scale objectives, (2) identify research priorities to reduce decision uncertainty, and (3) facilitate coordination among partner agencies within an adaptive management framework. We will highlight the methods used to solicit and evaluate expert opinions, to account for variability in uncertainty due to experts' personal experience, and to validate the models.

Para llevar a cabo su mandato de conservación, el Servicio de Pesca y Vida Silvestre Federal tiene que traducir objetivos amplios y definidos a nivel nacional sobre poblaciones y hábitats a acciones de manejo y medidas de éxito para refugios individuales. No obstante, es rara la vez que se cuenta con datos sobre especies y factores ambientales a la escala y resolución para informar esas decisiones locales. Por lo tanto, nosotros estamos desarrollando y poniendo a prueba métodos para mejor la resolución de mapas que predicen distribución de especies utilizando redes de creencias Bayesianas (RCB). RCB son empleadas comúnmente en situaciones donde decisiones de alto riesgo o cargada de valores tienen que hacerse con poca información. En nuestros modelos, las creencias iniciales son construidas a base de una revisión de literatura y la opinión de peritos, y luego puestas a prueba y actualizadas estacionalmente con datos de campo. Utilizando nuestro modelo de la gallinuela de agua dulce (Rallus elegans), nosotros demostraremos como este acercamiento puede ayudar a administradores de refugios a (1) ver como sus habitats terrestres y humedales contribuyen a los objetivos mas amplios, (2) identificar prioridades de investigación para reducir la incertidumbre asociada con decisiones, y (3) facilitar coordinación entre agencias colaboradoras dentro del marco de manejo adaptativo. Nosotros resaltaremos los métodos utilizados para solicitar y evaluar opiniones de peritos, como manejamos la variabilidad debido a la incertidumbre generada por la experiencias personales de los peritos, y como validar los modelos.

Drilling°, N.

Climatic Moisture Cycles and Marsh Bird Conservation in the Great Plains. Nancy Drilling, RMBO, Brighton, CO. nancy.drilling@rmbo.org.

Throughout west-central North America, including BCR 11, 17, 18, and 19, a major climatic factor is the wet-dry cycle, a 15 - 20 year cycle of drought - 'normal' moisture - high moisture - normal moisture, and back again. As a result, most wetlands and their associated marshes cycle through high water levels/no marsh - moderate water level/marsh present - mostly/completely dry, and back again, depending on basin morphology and hydrology. This spatial and temporal variability in moisture regime, and thus marsh habitat availability, undoubtedly impacts marsh bird distribution and abundance at all spatial levels. Yet little is known of the wet-dry cycle's effects on marsh bird populations or of species-specific evolutionary adaptations to this natural source of variability in habitat availability. Possible implications of our lack of knowledge for marsh bird conservation efforts in the Great Plains include an increase in the complexity and uncertainty of habitat models, a need for larger sample sizes in monitoring, and greater difficulty in interpreting causes of bird population or distributional changes. An increased understanding of marsh bird responses to this dynamic shifting of available habitat will result in improved conservation planning and better management decisions.

Driscollº, M. J. L.; Forbes, A.

Use of Geographic Information Systems in Identifying and Prioritizing IBAs in LA. Melanie J.L. Driscoll, LSU Museum of Natural Sceince, LA. mdriscoll@audubon.org

Important Bird Areas in Louisiana, rather than being relatively small, discrete patches of habitat within an unfriendly mosaic, tend to be more contiguous, landscape-scale sites. The traditional method of getting public nominations for landscape-scale sites proved unwieldy and overwhelming, even to most land managers. In order to make the process more objective, we used the GIS-based IBA site identification process done in Missouri as a model to identify and prioritize IBAs in Louisiana. We used public sources for many data layers including National Land Cover Data, aerial photos, protected lands, hydrology and Natural Heritage Program species of conservation concern. We created a data layer from all bird abundance data we could access to ascertain where bird abundance was highest, acknowledging that abundance data were limited to sites that had been surveyed. We delineated sites based on habitats, not bird abundance, but used the abundance data, where available, to justify IBA status, to prioritize IBAs, and to reduce gaps in coverage where public nominations may have not covered private lands. We will discuss results as well as
advantages and disadvantages of GIS-based site identification.

Duberstein°, J. N.

Ecotourism as a Conservation Tool: Bird Guide Training Workshops in Northwest Mexico. Jennifer N. Duberstein, Sonoran Joint Venture, Tucson, AZ. Jennie_Duberstein@fws.gov

Combined with an overall habitat protection and restoration effort, birding ecotourism has the potential to be an important piece of a larger solution to the issues facing bird populations in the Sonoran Joint Venture (SJV) region. This project aims to link habitat protection and restoration efforts and developing local ecotourism efforts in northwest Mexico with established birding tour operators in the United States and other countries. Although birding ecotourism is not a panacea for problems related to habitat loss and degradation in the region, it does provide an effective way for some landowners and communities to gain additional income from their land by protecting birds and bird habitat.

Ecoturismo como Herramienta de Conservación: Talleres de Entrenamiento para Guías de Aves en el Noroeste de México

En combinación con un esfuerzo de protección y restauración del hábitat, el aviturismo tiene el potencial de constituirse en parte importante de una solución mayor a los factores que afectan las poblaciones de aves dentro de la región del Sonoran Joint Venture (SJV). Este proyecto intenta conectar esfuerzos de protección y restauración de hábitat y esfuerzos locales de desarrollo de ecoturismo en el noroeste de México, con operadores turísticos de observación de aves ya establecidos en los Estados Unidos de Norte América y en otros países. Aunque el aviturismo no es una panacea para los problemas relacionados con la pérdida y degradación de hábitat en la región, puede proveer una manera efectiva de generar ingresos adicionales para algunos propietarios y comunidades, a través de proteger las aves y su hábitat.

Duberstein°, J. N.

Partnerships Role in Building Birding Trails: An Example from Southeastern Arizona. Jennifer N. Duberstein, USFWS, Tucson, AZ. Jennie_Duberstein@fws.gov.

Southeastern Arizona has long been known as a birders' mecca, drawing people from around the world to observe the unique birds and habitats of the region. The Southeastern Arizona Birding Trail Map was created in an effort to promote the region and increase the interest of birders to the area. The Southeastern Arizona Birding Trail Committee (SABTC) is a diverse consortium of 20 organizations, agencies, and individuals who worked together to create the map. Partners contributed funding, expertise, and time to this collaborative effort that brought varied groups to the table who otherwise would not have the opportunity to communicate with each other. Collectively this consortium was able to accomplish what would have been a difficult task for any single entity.

El Papel de las Alianzas en la Construcción de Senderos para la Observación de Aves: Un ejemplo del Suroeste de Arizona.

El Suroeste de Arizona es considerado desde hace tiempo como una meca para la observación de aves. Gente de todos partes del mundo se congregan allí para observar las aves y hábitat únicos de la región. El Mapa del Sendero para la Observación de Aves del Suroeste de Arizona fue creado como un esfuerzo para promover la región y aumentar el interés de observadores de aves en el área. El Comité del Sendero para la Observación de Aves del Suroeste de Arizona es un consorcio diverso conformado por 20 organizaciones, agencias, e individuos, quienes trabajaron conjuntamente para elaborar el mapa. Los socios contribuyeron con financiamiento, capacidades, y tiempo, a este esfuerzo cooperativo que reúne grupos diversos en la misma mesa, quienes de otro modo no tendrían oportunidad de comunicarse entre si. Este consorcio pudo alcanzar colectivamente lo que habría sido una tarea difícil para cualquier entidad participante por si sola.

Duffe°, J. A.; Zimmerling, R. J.; Paquette, J.; Kennedy, J.; Ziemba, K.

Modelling Bird Habitat Using Satellite-Derived Data for Area-Based Habitat Conservation Plans. Jason A. Duffe, Environment Canada, Ottawa, ON; Zimmerling, R.J., Zimmerling Ecological Services, Arnprior, ON; Paquette, J., Environment Canada, Ottawa, ON; Kennedy, J., Environment Canada, Gatineau, QC; Ziemba, K., Environment Canada, Gatineau, QC. jason.duffe@ec.gc.ca

Understanding habitat associations as well as ecological and geographic distributions of bird species in the boreal forest is crucial to the implementation of sustainable, ecosystem-based forest management planning. Here we used satellite-based remote sensing data from Landsat (30m pixels) and Ecological Niche Models (Maximum Entropy) to predict from areas of known occurrence (point count data) across a landscape using environmental variables. MaxEnt uses known occurrence points and relevant environmental and ecological variables represented in raster grids derived from Landsat imagery or Digital Elevation Models (DEM). Using artificial intelligence algorithms, MaxEnt produces an ecological niche model for a species which is then projected over the entire landscape to obtain a prediction of the species geographical distribution for a given area. We modeled predicted occurrence of priority species (PIF) in two Canadian forest ecosystems (Eastern Boreal and Interior Douglas-Fir) and outlined sample bird conservation plans based on area of potential habitat at various scales within the BCR. Advantages of using satellite based data include the ability to create standardized, high resolution environmental variables over large extents that can be monitored and updated through time. Landscape models using satellite data can produce a map over an entire region regardless of land ownership issues (public/private) or political boundaries (provincial), and integrate the true multi-stressor environment that exists in these active landscapes (forestry, exploration, mining, etc).

Duron°, M.; Evers, D., ; Braun D.; Brown, M.; Driscoll, C.; Hames R.; Lee, C.; Loukmas, J.; McFarland, K. P.; Rimmer C. C.; Sauer, A.; Schoch, N.; Taylor, R.

Songbirds as Indicators of Environmental Mercury Loads in the Northeast. Melissa Duron, BRI, Gorham, ME; Evers, D., BRI, Gorham, ME; Braun D., TNC, Albany, NY; Brown, M., TNC, Keene Valley, NY; Driscoll, C., Syracuse University, Syracuse, NY; Hames R., Cornell Unviersity, Ithaca,NY; Lee, C., TNC, New Paltz, NY; Loukmas, J., NYS DEC, Albany, NY; Mc Farland, K., VCE, Norwich, VT; Rimmer C., VCE, Norwich, VT; Sauer, A., Syracuse University, Syracuse, NY; Schoch, N., WCS, Ray Brook, NY; Taylor, R., TAMU, College Station, TX. melissa.duron@briloon.org.

It is established that avian piscivores in aquatic ecosystems accumulate high levels of mercury that affect reproduction and behavior. Breeding avian invertivore populations in a terrestrial ecosystem may be suffering the negative effects of multiple stressors such as habitat fragmentation, acidic and mercury (Hg) deposition, as well as other human-caused environmental changes. The effects of air pollutants, available calcium and sensitive habitats in breeding avian invertivores, such as Red-eyed Vireo, Palm Warbler and Wood Thrush, in northeastern forests are examined. In 2005-2007, we collected soil, litterfall, invertebrates and bird tissues (blood and feather) to test for mercury. We show results for avian invertivores throughout the northeastern US. We further demonstrate links among Hg depo-

sition and soil and songbird levels, habitats and geographical areas at greatest risk, and other factors that contribute to mercury contamination in songbirds.

Easton°, W. E.; Lambie, V.; Janatunen, J.

Characterizing Northern Songbird Migration. Wendy E. Easton, CWS, Canada; Lambie, V., MNO, Canada; Janatunen, J., MNO, Canada. wendy.easton@ec.gc.ca.

Hundreds of landbird species migrate annually from Canada's north to southern climates; over 140 species from British Columbia alone. Yet, our understanding of how songbirds use landscapes and the limiting factors during their long migrations is limited. Using standard protocols, we banded over 30,000 landbirds of more than 90 species during fall migration from 1997-2007 at Mugaha Marsh in northern British Columbia, including 32 priority species poorly covered by other traditional bird surveys. We demonstrate how migration monitoring data can be used to evaluate conservation efforts at two scales: at the local scale where environmental stressors and management actions often affect vital rates without substantial time lags; and at a broader, longer-term scale to provide a better understanding of normal patterns of population variability, distinguishing anthropogenic changes from 'natural' fluctuations in populations. Both scales are critical for making effective management recommendations. We present trends in Neotropical migrants, including Wilson's Warblers and Orange-crowned Warblers, Alder and Dusky Flycatchers, including variation in timing of migration depending on age and moult condition, and variation in numbers depending on local conditions.

Eisermann°, K.; Avendaño, C.

Conservation Prioritization in Guatemala Through the Identification of IBAs. Knut Eisermann, Sociedad Guatemalteca de Ornitología, Guatemala Ciudad, Guatemala; Avendaño, C., Sociedad Guatemalteca de Ornitología, Guatemala Ciudad, Guatemala. knut.eisermann@avesdeguatemala.org

The designation of IBAs, a prioritization scheme developed by BirdLife International, is based on four criteria: (1) globally threatened species, (2) restricted-range species, (3) biome-restricted species, and (4) congregatory species. About 47% of Guatemala fulfill IBA criteria. A total of 21 areas were delimited based on spatial habitat requirements of key species, under agreements with local authorities. Guatemalan IBAs are crucial for the conservation of bird species endemic to the northern Central American highlands. The Guatemalan IBA network covers habitat for 26 range-restricted species and 10 globally threatened species. Although none of the IBAs supports exceptionally high numbers of congregatory waterbirds, some sites support 1% of the biogeographic population of waterbird species. Guatemalan IBAs are rather large, ranging from 44 to 21,000 km^2, and include not only intact habitat (60% of the area of all IBAs), but also areas where efforts should be invested to restore habitat (40%). Long-term habitat conservation in the half of the country is challenging. Guatemala's population increased 35% from 1994 to 2002, indicating increasing pressure on natural habitat.

A need for successful conservation on the long term is to raise the education level among the Guatemalan society (28% of the population aged over 15 years are analphabets). Incentives by the National Forest Institute of Guatemala for the conservation of primary forests and for reforestations are a valuable measure for IBA conservation on the short term.

Elfner°, M. A.; Burgos, K.

From Georgia to Pernambuco (Brazil), Shared Species and Experiences Leading to Site Conservation. Mary A. Elfner, Georgia IBA, Savannah, Georgia, U.S.A; Burgos, K., Partners of America (Pernambuco section), Centro de Preservação Ambiental de Bonito-CEPAB (Bonito-PE), Pernambuco, Brazil. georgia.iba@gmail.com;

In 2000, the Georgia IBA Program was formed by the Atlanta Audubon Society, and since has identified 49 IBAs representing over 2 million acres of diverse habitat in this largest state east of the Mississippi River. Many of these IBAs are in coastal ecosystems such as the Okefenokee Swamp, Ossabaw Island and the Altamaha River Delta. In the community of Bonito, located in the state of Pernambuco, Brazil, remnants of an important Atlantic Forest with several migratory and endemic bird species will be under survey during the years 2007-2008. In early 2007, the Georgia IBA Program and the Bonito CEPAB's Program have been forming a Partners of the Americas partnership to identify common species and how to bolster protection of these sites through this international partnership. This presentation will detail our organization's respective backgrounds, common species, and how this international partnership, through a Partners of the Americas agreement, has helped us to further site conservation of these unique areas.

Da Geórgia a Pernambuco, Experiências Compartilh-adas para a Preservação Ambiental.

No ano 2000, o programa do AIA (Áreas de Importância às Aves) foi estabelecido pela Audubon Society em Atlanta, Geórgia, e desde então identificou 49 AIA que representam aproximadamente 2 (dois) milhões de acres em diversidade de habitats neste estado ao leste do Rio Mississipi. Muitos destes ecossistemas são litorâneos, a exemplo do pântano de Okefenokee, Ilha de Ossabaw e o delta do Rio Altamaha. No município de Bonito, localizado no estado brasileiro de Pernambuco, resquícios de importante Mata Atlântica de altitude com diversas espécies de aves migratórias e endêmicas estará sob pesquisa nos anos de 2007-2008. No início deste ano, a AIA da Geórgia e o CEPAB de Bonito em Pernambuco, iniciou uma parceria, através dos Companheiros da Américas, para identificar espécies de aves comuns nos dois estados, além de fortalecer suas relações de trabalho, buscando formas para preservar e estudar seus ecossistemas – sob uma abordagem internacional. A apresentação tem como objetivo detalhar o histórico de ambas entidades, revelar estudos sobre espécies comuns de aves e explicitar como a cooperação internacional, através dos Companheiros da Américas, trará benefícios à conservação de suas singulares e importantes áreas de preservação.

Elizondo°, P.

Observación de Aves en Costa Rica: Implicaciones Económicas y de Desarrollo. Pablo Elizondo. Asociación Ornitológica de Costa Rica, Costa Rica. jpelizondo@zeledonia.org.

Las aves llevan a cabo su migración cada ano, pero con ellas una importante cantidad de turistas viajan a diferentes lugares del trópico con el fin de observarlas, fotografiarlas y disfrutar de ellas, en el año 2001 se estimó en 46 millones de observadores de aves sólo en Norteamérica, en 2005 1,5 millones de turistas viajaron a Costa Rica, de los cuales cerca del 50% lo hicieron por motivos de placer y ocio, y 37% de estos estuvo integrado por observadores de aves.

Se analiza la composición y comportamiento del mercado de observadores de aves en Costa Rica basados en estadísticas

gubernamentales y se determinan los diferentes factores de infraestructura requeridos por la industria, así también se toman en cuenta los factores de sostenibilidad, dimensión e impacto en la economía costarricense.

Bird Watching in Costa Rica: Economic and Development Implications.

Birds migrate every year, but along with them an important number of tourist travel to different places in the tropics to observe, photograph and enjoy them, in 2001, 46 million birdwatchers were estimated just in north America, in 2005 1,5 million people travel to Costa Rica, 50% of them travel for pleasure, and 37% of them were birdwatchers.

I analize the composition and behavior of the birdwatchers market in Costa Rica, based on government statistics, and I determinate the different infrastructure needs, as well as the sustainability, dimensions and impact on the Costa Rica economy.

Elliott°, A. B; Uihlein, B. W.; Tirpak, J. M.; Whiffen, H. J-H.

The Utility and Application of Conservation Databases in Linking Site-scale Activities with National Bird Conservation Plans: A Joint Venture Example. A. Blaine Elliott; Uihlein, W. B. III; Tirpak, J.M.; Whiffen, H. J-H., Lower Mississippi Valley Joint Venture Office, Vicksburg, MS. blaine_elliott@fws.gov.

Implementation of integrated bird conservation along with the increasing emphasis on biological and organizational accountability requires the conservation community to be more reliant on coordinating information technologies that track, disseminate, distribute, and communicate conservation activities across partners, space, and time. The Lower Mississippi Valley Joint Venture ecoregional partnership has assumed the responsibility for cooperative achievement of landscape sustainability consistent with national and international bird plans and relies on both habitat and population-based data tracking systems to achieve this mission. We will introduce several of these products (e.g., the geo-Reforestation Tracking System, a web-based geospatial relational database) to highlight some of the challenges associated with their development and implementation (e.g., end-user utility and relevance) of these database products, and discuss how the data is collected and used to provide management tools (e.g., the Forest Breeding-bird Decision Support Model) and inform management decisions that link habitat objectives to plan population goals (e.g., optimization of reforestation to maximize benefits area sensitive bird species).

Utilidad y Aplicación de Bases de Datos de Conservación para Vincular Actividades a Escala de Sitio con Planes Nacionales de Conservación de Aves: Ejemplo de un Esfuerzo Conjunto (Joint Venture).

La implementación de conservación integrada de aves, a la vez de un aumento en énfasis en responsabilidad organizacional y biológica, requieren que la comunidad conservacionista dependa mas en la coordinación de tecnologías de información que sigan, diseminen, distribuyan, y comuniquen actividades de conservación a través de socios, espacio y tiempo. La asociación eco-regional del Esfuerzo Conjunto del Valle Bajo del Mississippi (Lower Mississippi Valley Joint Venture) ha asumido la responsabilidad de realizar en forma colaborativa la sostenibilidad paisajista de la región, de acuerdo con planes nacionales e internacionales de aves, y dependiendo de sistemas de datos basados en hábitat y poblaciones de aves para cumplir esa misión. Introduciremos varios de estos productos (ej. el sistema de seguimiento de geo-reforestación, el cual es una base de datos relacional y geo-espacial en Web) para resaltar algunos de los desafíos asociados con el desarrollo e implementación (ej. utilidad y relevancia al usuario) de estas bases de datos, y discutir como los datos son recolectados y utilizados para proveer herramientas de manejo (ej. modelo de apoyo de decisión para aves de bosque en temporada reproductiva) e informar decisiones de manejo que vinculen metas poblacionales en los planes con objetivos de hábitat (ej. optimización de reforestación para maximizar beneficios a especies de aves sensitivas al área).

Ellis°, G.

The Impacts of Feral and Free-Roaming Cats on Migratory Birds. Grant Ellis, ABC, Washington, DC. gellis@abcbirds.org.

There are more than 90 million pet cats in the U.S., the majority of which roam outside at least part of the time. In addition, millions of stray and feral cats roam our cities, suburbs, and rural areas. Scientists estimate that free-roaming cats kill hundreds of millions of birds, small mammals, reptiles and amphibians each year. In response to the growing concern of cat predation on wild birds, ABC launched the Cats Indoors! Campaign for Safer Birds and Cats in 1997 to educate cat owners, decision makers, and the general public that cats, wildlife and people all benefit when cats are kept indoors. ABC works with federal, state, and local agencies and individuals to curb the threat of cat predation on birds in areas of high migratory bird occurrence. Species that ABC has collaborated with partners to protect include Piping Plover, Snowy Plover, Least Tern, Black Skimmer, and Painted Bunting. In 2006, ABC released a five-state review of the impacts of cat predation on bird species of conservation concern based on research conducted in California, Florida, Hawaii, New Jersey, and New York. The review sheds light on the species commonly affected in the targeted sites, and illustrates the need for broader-reaching policies and guidelines to address the issue. The review also provides a list of recommendations for biologists and conservationists on how to help educate the public about responsible pet ownership and generate support for predator management projects.

El-Moghrabi°, L.; Al-Omari, K.; Hamidan, N.; El-Halah, A.; Azar, J.; Hasani, I.

National Waterbird Census in the Hashemite Kingdom of Jordan, A Review of the first years of research (2000-2007). Laith El-Moghrabi, RSCN, Amman, Jordan; Al-Omari. K., RSCN, Jordan; Hamidan, N., RSCN, Jordan; El-Halah, A., Jordan River Foundation, Amman, Jordan; Azar, J., RSCN, Jordan; Hasani, I., RSCN, Jordan. laith.elmoghrabi@rscn.org.jo.

The national waterbird census in Jordan was initiated in autumn 2000 in order to primarily evaluate the status of huntable waterbird species in the country. Later on, it became one of the major annual monitoring programmes that the Royal Society for the Conservation of Nature (RSCN) in Jordan carries out. In addition to providing valuable data about all the wetlands of the country and the varying significance for each one of them for the different waterbird species that use them, the programme has become the main training tool to build the capacity of young bird researchers, a public awareness raising tool and the base for several other bird research initiatives.

Recensement National des Sauvagines Dans le Royaume Hachémite de Jordanie, un Bilan des Premières Années de Recherche (2000-2007).

Le recensement national des sauvagines en Jordanie a été lancé en automne 2000 afin d'évaluer en premier lieu le statut des espèces chassables. Par la suite, il est devenu l'un des principaux programmes de contrôle annuels effectué par la So-

ciété royale pour la conservation de la nature (RSCN) en Jordanie. En plus de fournir des données valables au sujet de tous les marécages du pays et la signification de chacun d'entre eux pour les différentes espèces de sauvagines qui y vivent, le programme est devenu l'outil principal de formation des jeunes ornithologues, le moyen d'élever la conscience publique et la base pour plusieurs autres initiatives de recherches.

Endara-Osejo, E.; Loor-Vela°, S.

Conformación de Grupos de Apoyo Local (GAL) para la Conservación de Tres Áreas Importantes para la Conservación de las Aves (IBAs) en Ecuador. Eugenia Endara Osejo, Aves & Conservación, Quito, Ecuador; Loor-Vela, S., Aves & Conservación, Quito, Ecuador, eendara@avesconservacion.org.

El Programa de las IBAs en el Ecuador, coordinado por Aves & Conservación, identificó 97 IBAs continentales. Tres de ellas, ubicadas en el noroccidente de la Provincia de Pichincha, constituyen el área de influencia del proyecto: EC040 Río Caoní, EC041 Los Bancos Milpe y EC043 Mindo y Estribaciones Occidentales del Volcán Pichincha. La primera fase del proyecto supuso el desarrollo de una estrategia de acercamiento a la zona de intervención y a los actores claves de cada una de las IBAs, el reconocimiento y levantamiento de información geográfica de las áreas, el establecimiento de contactos con los principales actores institucionales y sociales y el acrecentamiento del conocimiento del equipo sobre cada una de ellas, la socialización del proyecto, la formación de los GAL y el establecimiento de los primeros acuerdos de co-participación en el Proyecto y de colaboración interinstitucional. La segunda, se caracterizó por la construcción colectiva de la Estrategia de Capacitación con base a un equipo interdisciplinario de técnicos facilitadores. La tercera, en la que nos encontramos actualmente, ha estado marcada por el inicio de la ejecución del Plan de Capacitación constituido por cuatro módulos enfocados principalmente en formar observadores de aves y guías de aviturismo, así como en crear conciencia local sobre la importancia de conservar estas IBAs. La siguiente fase del proyecto y objetivo final del mismo es desarrollar de manera participativa una Estrategia de Conservación para cada área y definir los mecanismos para implementarla.

Formation of Site Support Groups (SSG) to Conserve Three Important Bird Areas in Ecuador.

The IBA program in Ecuador, leaded by Aves & Conservación, identified 97 continental IBAs. Three of them, located in the northwestern area of the Pichincha Province, comprise the implementation area of this project. They are: EC040 Río Caoní, EC041 Los Bancos Milpe, and EC043 Mindo and the Western Slopes of the Pichincha Volcano. First phase of the project was aimed at developing a working strategy to involve key stakeholders of each IBA in the project, carrying out field surveillances and improving geographical information for each area, establishing contacts with the main institutional and social stakeholders, increasing the knowledge of the project staff about each IBA, socializing the project, establishing the SSG and reaching agreements of joint implementation and inter-institutional collaboration for the project. During the second phase of this project, the Capacity-building Strategy and its Implementation Plan were collectively developed by an inter-disciplinary team of facilitators, who are also responsible for its implementation. The Capacity-building Strategy and Plan, divided in four training modules, are mainly focused on training birdwatchers and birding guides, as well as in raising local awareness on the importance of conserving these IBAs. We are currently in the third phase of the project that consists on the implementation of the Capacity-building Plan. During the fourth and last phase of the project, we foresee that each SSG, with our assistance, will collectively design a Conservation Strategy for each IBA, and together we will identify their implementation mechanisms, reaching the main goal of the project.

Erickson°, T. A.; Uyehara, K. J.

Farm Bill Programs Aid in the Recovery of Hawaii's Endangered Birds Terrell A. Erickson, NRCS, Washington, D.C.; Uyehara, J.K., Kailua-Kona, HI. Terrell.erickson1-@wdc.usd.gov

Population recovery goals of endangered Hawaiian waterbirds are constrained by lack of suitable habitat. Farm Bill Programs, particularly Wetlands Reserve Program (WRP) and Wildlife Habitat Incentives Program (WHIP) are playing an important role in endangered species recovery through restoration and management of a diversity of "endangered habitats" on non-Federal lands. Benefits to endangered waterbirds can occur within days (foraging, loafing) or two years (successful breeding) following restoration. On the Island of Hawai'i, endangered Hawaiian duck use was higher on WRP wetland complexes (81%) than on agricultural ponds (41%) on private lands. At the Hamakua Marsh State Wildlife Sanctuary on O'ahu, using WRP and nonprofit grants, an overgrown riparian pasture was restored to a productive breeding ground. At this site, the State found that endangered Hawaiian coot, stilt, and moorhen breeding pairs and chicks increased two to ten times pre-restoration baselines. On Kaua'i the first perpetual WRP easement holds the greatest potential for four of the six endangered waterbird species in Hawaii. Under WHIP, NRCS has cost-shared restoration and management of taro patches to enhance endangered waterbird habitats, promoting synergy between native Hawaiian culture and endangered species. Each and every Farm Bill project is unique in its benefit to the private landowner, the environment, and the future conservation of endangered species and wetlands in the islands.

Erickson°, W. P.; Johnson, G. ; Young, D.; Poulton, V.; Bay, K.

Bird Mortality at U.S. Wind Projects and Comparison to Other Anthropogenic Sources. Wallace P. Erickson; Johnson, G.; Young, D.; Poulton, V.; Bay, K., WEST Inc., Cheyenne, WY werickson@west-inc.com.

We provide an update to our previous 2001 publication on bird mortality from wind turbines and other anthropogenic sources. All publicly available studies of bird mortality at wind energy facilities are reviewed, and summaries are provided for fatality rates, species composition, and timing of mortality. Publicly available estimates of mortality from other anthropogenic sources are reviewed and critiqued. Assumptions to estimation of mortality are reviewed. Approaches to investigate the significance of the levels of bird mortality from wind turbines are explored and recommendations are made.

Etterson°, M. A., Niemi, G. J., Danz, N. P.

Does Detection Heterogeneity Influence Landscape-scale Patterns Inferred from Point Count Data? Matthew Etterson; Niemi, G.; Danz, N., NRRI, Duluth, MN. etterson.matthew-@epa.gov

Detection heterogeneity and overdispersion have received considerable recent attention in the design and analysis of avian point count data. To study the importance of both of these complicating factors we used data from over 17,000 point counts

over 16 years in three national forests in the upper Midwest, USA to examine landscape-scale distribution patterns for ten species of forest songbirds. We compared parameter estimation and model selection under a two by two factorial design, where the first 'factor' was the estimation and inclusion of detection heterogeneity (or not) and the second 'factor' was to model abundance using a Poisson versus negative binomial distribution. For each species we compared 24 models that specified mean abundance as varying functions of habitat, national forest, and year. We also considered various models for detection heterogeneity and overdispersion. For all ten species we typically found extremely high correlations ($R > 0.99$, $P \approx 0$) in the performance of abundance models regardless of whether detection heterogeneity was included, the functional form under which it was estimated, or distributional assumptions for abundance. We conclude that, at the landscape scale and with large data sets, inference about distribution and trends is robust to detection heterogeneity and overdispersion.

Eubanks°, T. L.

Bird Conservation – Opportunities through Open-Sourced Engagement. Ted Lee Eubanks, Fermata Inc., Houston, Texas. eubanks@fermatainc.com

Bird conservation efforts have historically engaged an infinitesimally miniscule percentage of the general population. For example, memberships of conservation organizations such as The Nature Conservancy, American Bird Conservancy, and National Audubon Society represent single-digit percentages of the U.S. population, even when combined. The funding necessary for mass media engagement is rarely available, and therefore conservation organizations have been forced (or have chosen) to preach to their own choirs. In this paper I will discuss how to organize efforts aimed at engaging the general population through non-traditional (i.e., not mass media), open-sourced means. I will present one example of such an approach – an interpretive exhibit (Faces of Flight) within a major U.S. airport (Houston). I will discuss how to organize such an exhibit, how to attract funding, and how others might mount similar exhibits within their respective communities.

Conservación de Aves: Oportunidades para Involucrar a la Gente con Medios Gratuitos.

Los esfuerzos para la conservación de aves han involucrado históricamente un porcentaje diminuto de la población general. Por ejemplo, las membresías combinadas de organizaciones conservacionistas como The Nature Conservancy, American Bird Conservancy y National Audubon Society representan porcentajes de un solo dígito de la población estadounidense. Rara vez se encuentra disponible el financiamiento necesario para involucrar a esta población a través de medios de comunicación masiva y por eso las organizaciones conservacionistas se han visto obligados (o han elegido) predicar a su propia gente, la cual ya practica la conservación. En esta presentación mostraré cómo organizar esfuerzos para involucrar a la población general mediante medios no tradicionales (por ej. que no sean medios masivos) y gratuitos. Como ejemplo de esta estrategia mostraré una exposición interpretativa ("Caras del vuelo") dentro de un aeropuerto principal de los Estados Unidos (Houston). Discutiré cómo organizar esta exposición, cómo atraer el financiamiento y cómo otra gente podría crear exposiciones similares dentro de sus respectivas comunidades.

Eubanks°, T. L.

Birding Trails – A Historical Perspective. Ted Lee Eubanks, Fermata Inc., Houston, Texas. eubanks@-fermatainc.com

From an inauspicious beginning along the Texas coast in the early 1990s, birding trails have now blossomed into a global phenomenon. Initially conceived as a tourism project to attract nature travelers (especially birders) to the Texas coast, birding trails are now used to further economic development, education, and conservation goals as well. In this presentation Ted Eubanks, an originator of the birding trail concept, will discuss how birding trails began, how trails have evolved into their present form, and how future trails might be fashioned to encompass an even wider range of education, conservation, and social goals.

Senderos para la Observación de Aves: Una Perspectiva Histórica

Desde su inicio casi olvidado, a lo largo de la costa de Tejas a principios de los años 90, los senderos para la observación de aves han florecido hasta convertirse en un fenómeno mundial. Al principio nació como un proyecto turístico para atraer a la costa de Tejas a visitantes interesados en la naturaleza (especialmente a los observadores de aves). En la actualidad, los senderos también se utilizan para impulsar el desarrollo económico, la educación y también la conservación. En esta presentación, Ted Eubanks, uno de los fundadores del concepto de senderos para la observación de aves, discutirá el origen de estos senderos, cómo han evolucionado y cómo se podrían diseñar los senderos futuros para acomodar un espectro aún más amplio de objetivos educativos, sociales y conservacionistas.

Evers°, D. C.; Duron, M.; Cristol, D. A.; Boese, G.; Cal, R.; Piaskowski, V.; Reneau, R.; Reneau, S.; Teul, M.; Tzul, D.

iMercury in Neotropical Migrants – First-Time Comparisons between Temperate and Tropical Zones. David C. Evers, BioDiversity Research Institute, Gorham, ME; Duron, M., BioDiversity Research Institute, Gorham, ME; Cristol, D.A., College of William and Mary, Williamsburg, VA; Boese, G., Birds Without Borders, Belmopan, Belize; Cal, R., BWB, Belmopan, Belize; Piaskowski, V., BWB, Belmopan, Belize; Reneau, R., BWB, Belmopan, Belize; Reneau, S., BWB, Belmopan, Belize; Teul, M., BWB, Belmopan, Belize; Tzul, D., BWB, Belmopan, Belize. david.evers@briloon.org

Recent findings demonstrate that the availability of methylmercury (MeHg) to North America's avifauna is more pervasive than once thought. Current environmental mercury (Hg) loads are documented as having adverse behavioral and reproductive effects on piscivorous birds; evidence of such effects is also building for songbirds. Mercury point sources and habitats sensitive to long-range deposition of atmospheric Hg are collectively identified as biological Hg hotspots – areas where birds are negatively impacted by MeHg toxicity. Further identification of such areas is promptly needed to help direct regional, national and international policy decisions toward regulating the anthropogenic release of Hg into the landscape. We present evidence on songbird species, habitat types, and geographic areas that are of greatest conservation concern for MeHg toxicity in the eastern United States. Also examined is the first known dataset to profile Hg levels in tropical landbirds not associated with a Hg point source. Mercury levels for two neotropical migrants at the Belizean study site, the Hooded Warbler and Northern Waterthrush, exceeded adverse effect levels and were 10-20x higher than their northeastern United States breeding areas. We be-

lieve that some neotropical migrant songbirds may be ingesting dietary MeHg at toxic levels that cause behavioral, physiological, reproductive and survival effects in both their breeding and wintering areas. A standardized national program for monitoring Hg in birds is pending for approval by the United States Congress. This program and other efforts related to sustaining populations of neotropical migrants should include potential Hg-related stressors in tropical habitats as a factor for conservation concern.

Ewert°, D. N.; Wunderle, Jr., J. M.; Currie, D.; White, J. D.; Carey, E.; Huber, P. W.

The Kirtland's Warbler Research and Training Project. David N. Ewert, The Nature Conservancy, Lansing, MI; Wunderle, J.M., Jr., U. S. Forest Service, Palmer, Puerto Rico; Currie, D., Wilrijk, Belgium; White, J.D., Puerto Rico Conservation Foundation, San Juan, Puerto Rico; Carey, E., Bahamas National Trust, Nassau, Bahamas; Huber, P.W., U. S. Forest Service, Mio, MI. dewert@tnc.org

The Kirtland's Warbler Research and Training Project was initiated to (1) characterize winter habitat requirements of the endangered Kirtland's Warbler (*Dendroica kirtlandii*), and associated resident and migrant species, on the Bahamas wintering grounds, (2) train Bahamians to increase conservation capacity of The Bahamas and (3) evaluate linkages between breeding and wintering grounds of the Kirtland's Warbler.

From 2002 through 2007, we have banded Kirtland's Warblers wintering on Eleuthera, Bahamas. Based on observations of banded birds, sampling of food resources, use of radiotelemetry, use of remote imagery, and isotope analyses we are describing Kirtland Warbler use of the dry subtropical landscape on Eleuthera. Analyses of food selection and availability, habitat selection, movements, home ranges, and changes in distribution through the winter suggest that Kirtland's Warblers disperse to and concentrate at food-rich sites, especially in the relatively dry late winter period. We also located Eleuthera-banded Kirtland's Warblers on the breeding grounds in Michigan and Wisconsin. Our studies are coordinated with breeding season studies of Kirtland's Warblers and will further implementation of the Kirtland's Warbler Recovery Plan.

To facilitate application of findings from Kirtland's Warbler studies in The Bahamas, we are training students and initiating discussions regarding land use practices with major landowners.

Farquhar, C. C.; Schlitter°, D. A.

Texas - State Example of International Project. C. Craig Farquhar, Texas Parks and Wildlife Department, Austin, Texas; Schlitter, D.A., Texas Parks and Wildlife Department, Austin, TX. craig.farquhar@tpwd.state.tx.us

Many plants and animals of conservation concern in Texas have geographic ranges extending into Latin America. Especially for those taxa in decline or at risk it is of paramount value to engage fruitfully with biologists and policy-makers south of the border. To this end, a focus of the Endangered Species (Section 6) grant program at Texas Parks and Wildlife Department (TPWD) has been to strengthen cross-border ties between conservation partners such that greater strides in addressing critical recovery criteria may occur. Prior to 2001, when the first Section 6 funded contract was awarded to a Latin American researcher, TPWD had limited experience working directly with foreign countries. Since that time we have awarded approximately $500,000 in federal Section 6 grant funds to nine projects on various plant and animal taxa. Results from one of these projects has led to strengthening a recent decision to downlist a species from endangered to threatened. We have learned many lessons and have had to invent new tactics in the logistics of cross-border research, including language barriers, executing contracts, obtaining state authority, and paying invoices to foreign countries. Aside from research objectives accomplished one testament to our success has been the continual increase in proposal submissions from Latin America, now accounting for one-third of all entries. We will discuss the strengths and weaknesses of our program in hopes that others might benefit.

Fergusº, R.

Urban Bird Conservation: Linking Yards and Neighborhoods to Regional Bird Conservation Initiatives. Rob Fergus, National Audubon Society, Ivyland, PA. rfergus@audubon.org

The majority of North Americans (76% in Mexico, 81% in Canada and USA) live in urban areas. In the United States, urban areas cover over 3% of the contiguous 48 states, and an additional 25% (1.39 million km2) of the land is developed at exurban residential densities greater than one house per 40 acres. These areas include important habitat for at least 100 of the 178 species listed on the 2007 WatchList, and 110 of the 121 species recently identified by Audubon as Common Birds in Decline. This creates the duel challenges of a) engaging urbanites in bird conservation and b) protecting vulnerable bird habitats and populations in urban, suburban, and exurban settings. Audubon programs address these challenges by committing landowners to bird-friendly gardening and landscaping practices, and by teaching landowners how to manage their individual properties and local neighborhoods for birds of regional conservation concern. A survey of Audubon state programs and 490 local Audubon chapters identifies challenges and opportunities for engaging urban audiences in bird conservation and linking management of yards and neighborhoods to national, state, and regional bird conservation initiatives.

Figg, D.; Jacobs, B.°

Bottomland Forest Restoration in the Mississippi Alluvial Valley. Dennis Figg, Missouri Department of Conservation, Jefferson City, MO; Jacobs, B., Missouri Department of Conservation, Jefferson City, MO. dennis.figg@-mdc.mo.gov

The Mississippi Alluvial Valley was formerly a landscape of bottomland forests and swamps. Over 80% of the forest has been cleared and the land extensively drained for agriculture. Both Missouri and Tennessee identified specific geographies for bottomland forest restoration in their wildlife action plans. Action plan implementation in Missouri and Tennessee will deliver on the conservation goals of The Lower Mississippi Valley Joint Venture (LMVJV) through habitat restoration directed at Partners in Flight (PIF) bird targets. Information in the Heritage Database guided the selection of priority geographies and provides data on other taxa to integrate bird conservation with other species of conservation concern. This presentation demonstrates how conservation for PIF targets is made possible by integrating state wildlife action plans with Joint Venture and Bird Conservation Region goals and objectives.

Restauración de bosques de tierras bajas en el Valle Aluvial del Mississippi

Anteriormente el valle aluvial del Mississippi era un paisja de de bosques de tierras bajas y pantanos. Mas del 80% de los bosques han desaparecido y la tierra ha sido drenada con fines agrícolas. Tanto Missouri como Tennesee han identificado en sus planes de acción de vida silvestre geografías específicas para la restauración de bosques de tierras bajas. La implementación de los planes de Acción en Missouri y Tennessee

resultarán en la obtención de las metas de conservación de la Lower Mississippi Valley Joint Venture (LMVJV) a través de restauración de hábitat dirigido a las metas de aves de Partners in Flight (PIF). La información en la base de datos Heritage guió la selección de geografías prioritarias y proveyó datos sobre otros taxa para integrar la conservación de aves con otras especies de preocupación para su conservación. Esta presentación demuestra como es posible la conservación para las metas PIF integrando planes de acción de vida silvestre estatales con metas y objetivos de un Joint Venture de una Región de Conservación de Aves (Bird Conservation Region).

Figueiredo°, E.; Drummond, G.

The Bird Trade and Strategies to Protect the Critically Endangered Lear's Macaw in Brazil. Eduardo Figueiredo, Fundacao Biodiversitas, Brazil; Drummond, G. eduardo@-biodiversitas.org.br.

The Lear's macaw (*Anodorhynchus leari*) is Critically Endangered on both national and international Red Lists, and is one of the most threatened species of the world, restricted to a 20,000 acre area of the semi-arid in Northeastern Brazil. Due to its amazing beauty and large size, the species has been historically threatened by intensive poaching and illegal trade that feed the pet market worldwide. Highly specific, the macaw relies on sandstone cliffs to breed and roost, and forages in Licuri (*Syagrus coronata*) palm trees in farms as distant as 100 km from their roosting site. After four years working on conservation projects with the Lear's Macaw, Biodiversitas acquired a portion of the site to create the Canudos Biological Station in 1993, aiming for the protection of that sanctuary. In a partnership with ABC, the Station was expanded to approximately 3,700 acres in 2007, thus including within its borders all roosting cliffs in the Toca Velha region. Legal ownership and a consistent and careful monitoring, performed daily by Biodiversitas park guards, have contributed throughout these 14 years to significantly increase the size of the bird's population, from 70 birds in 1979 to 700 birds in 2007.

Classificada na categoria Criticamente em Perigo das Listas Vermelhas nacionais e internacionais, a Arara-azul-de-lear (*Anodorhynchus leari*) é uma das aves mais ameaçadas do planeta. Endêmica de uma área de 8 mil km^2 do bioma da Caatinga, o primeiro registro da ave em seu ambiente natural foi em 1979, sendo sua população estimada à época em 70 indivíduos (Sick *et al*., 1979). Devido à notável beleza de suas penas, a espécie tem sido historicamente ameaçada por caçadores e traficantes de animais silvestres, que alimentam o mercado negro mundial. Altamente específica, a arara utiliza os paredões de arenito de uma região denominada Toca Velha para nidificar e dormir, e sai em busca da palmeira Licuri (*Syagrus coronata*) em fazendas distantes até 100 km do seu local de descanso. Após 04 anos desenvolvendo projetos de conservação da Arara-azul-de-lear, a Biodiversitas adquiriu uma porção de 130 hectares da área, criando a Estação Biológica de Canudos (EBC), em 1993, com a intenção de proteger aquele santuário. Em uma parceria com a American Bird Conservancy (ABC), a EBC foi ampliada para uma área de aproximadamente 1.500 hectares em 2007, incluindo todos os paredões utilizados pela espécie na região da Toca Velha. A posse legal e a fiscalização constante e cuidadosa da área, realizada pelos guarda-parques da Biodiversitas, contribuíram, no decorrer destes 14 anos, para o aumento significativo da população da ave.

Finch°, D.

Overview of Forest Service Research and Assessments on Grassland Birds in the Interior West. Deborah M. Finch, USFS RMRS, Albuquerque, NM. dfinch@fs.fed.us

This presentation provides an overview of past US Forest Service (FS) research on bird ecology and stopover migration in grassland ecosystems. Patterns of species endangerment and species richness are identified at broad spatial scale. Results of one of the more recent studies suggest that the distribution of grassland bird species is influenced by a complex mixture of factors that include habitat area affects, landscape pattern and composition, and the availability of prey. The status, conservation and management of grassland birds in the Southwest are reviewed based on materials in the 2005 FS grassland assessment general technical report. Also covered are management strategies for grassland bird species potentially affected by ungulate grazing in the Southwest. New problems facing grassland bird species in the Interior West include conversion and homogenization of habitats as non-native plants such as cheatgrass and buffelgrass invade new areas, and consequent increases of fires that frequently result in further spread of invasive plants. Other significant threats to grassland birds are displacement of populations by urban and suburban expansion, disruption of migration corridors, long-term drought, loss of wetlands and drying of water courses, and climate change. Research needs are identified with the intent of developing new knowledge and decision-support tools to help managers conserve grassland bird populations affected by multiple agents of change.

Fink°, D.; Hochachka, W. M.; Nur, N.

Exploring bird Monitoring Data to Guide Management and Research Decisions: Predicting Relative Abundance with Decision Trees. Daniel Fink, Laboratory of Ornithology, Cornell University, NY; Wesley M. Hochachka, Laboratory of Ornithology, Cornell University, NY; Nur, N., PRBO Conservation Science, Petaluma, CA. df36@cornell.edu

The ability to predict and visualize patterns of relative abundance of birds is an important part of exploring bird monitoring data. We demonstrate how a decision tree-based data mining analysis can be used to model spatial and temporal variation based on large-scale monitoring data. Using data from eBird, a citizen-science bird monitoring project, we apply decision-tree analyses to data from several common species occurring in the continental U.S. To account for habitat-selectivity of birds, remotely-sensed habitat information compiled over several spatial scales is included in the analysis. Variation in detection rates is modeled as a function of effort spent watching birds, and variation in availability for detection is modeled as a function of the observation time of day and date. We estimate maps of relative abundance over a range of spatial extents and investigate how predictive performance is affected by observation density.

Fischer°, R. A.; Gauthreaux, S. A.; Guilfoyle, M. P.; Cohen, E.; Belser, C.; Moore, F.

Identification and Investigation of Migratory Bird Stopover Hotspot Habitats on U.S. Military Installations. Richard A. Fischer, USACE, Vicksburg, MS; Gauthreaux, S. A., Clemson University, Clemson, SC; Guilfoyle, M. P., USACE, Vicksburg, MS; Cohen, E., University of Southern Mississippi, Hattiesburg, MS; Belser, C.S., Clemson University, Clemson, SC; Moore, F., University of Southern Mississippi, Hattiesburg, MS. Richard.A.Fischer@-erdc.usace.army.mil.

Military lands in the United States provide some of the highest quality habitats available for a wide diversity of bird species. Although significant emphasis has been placed on the conservation and management of breeding and wintering bird habitat on military installations, relatively little attention has been paid to stopover habitats used by migratory birds during spring and fall migration. Even less is known about the locations and extent of important stopover sites (i.e., hotspots), or areas where birds concentrate heavily to rest during migration. By identifying where, when, how long, and in what concentrations migratory birds inhabit temporary stopover sites, installations will be able to improve both flight safety and species conservation. The objectives of this 3-year effort are to (1) use radar data to identify military installations that have important migratory bird hotspot habitats; (2) document the pattern of bird migration at these installations; (3) conduct intensive ground surveys to investigate these hotspots; (4) investigate habitat use by individual radio-collared landbirds, and (5) develop forecast models of bird migration at and around selected installations. The U.S. Army Engineer Research & Development Center, Environmental Laboratory; Clemson University Radar Ornithology Laboratory; and University of Southern Mississippi Department of Biological Resources have collaborated to, (1) develop maps that show the relationship of selected military bases to important stopover areas across the country, (2) delineate hotspot stopover sites via intensive on-the-ground investigations of radar-identified concentrations of migrant birds, (3) provide information on the stopover ecology of migrants within these habitats, (4) correlate radar data with ground census information, and (5) develop spring and fall migration forecast models that will allow managers to predict when dense migrations of birds are likely to occur, and assist in improving planning for flight training, and ultimately, flight safety. This work is also assisting natural resource managers in the management and conservation of military lands for migratory birds.

Fischer°, R. A.; Guilfoyle, M. P.

The Influence of Russian Olive on Seasonal Abundance and Distribution of Birds within USACE Habitat Management Units Along the Snake and Columbia Rivers, Washington and Oregon. Richard A. Fischer, USACE, Vicksburg, MS; Guilfoyle, M. P., USACE, Vicksburg, MS. Richard.A.Fischer@-erdc.usace.army.mi.

Non-native, invasive plants on federal lands are an increasing problem throughout North America. For example, Russian olive (*Eleagnus angustifolia*) is pervasive throughout riparian areas of the northwestern U.S. and there is significant concern about how this species is affecting native flora and faunal communities. From 2004 through 2006, we conducted extensive surveys of seasonal bird communities inhabiting Habitat Management Units (HMUs) managed by the U.S. Army Engineer District, Walla Walla. The goals of this investigation were to (1) provide Corps personnel with baseline information on the seasonal distribution and abundance of birds within riverside HMU's; (2) identify sites that serve as potentially important migratory stopover habitat or breeding habitat for bird communities, (3) evaluate the relationship between seasonal bird communities and Russian olive cover on a micro- and macro-habitat basis, (4) develop a Russian Olive Management Program for HMUs that is compatible with maintaining integrity of riparian bird communities, and (5) recommend control guidelines for Russian olive to prevent decline of avian populations and enhance avian habitat quality.

Folsom°, S.; Evers, D.; Schmerfeld, J.; Heffinger, G.; Lane, O.; Diener, J.; Edmonds, S.; Martz, T.

Assessment of Methylmercury Contamination and Effects in Songbirds on the North Fork of the Holston River (NFHR), Virginia. Sarah Folsom, BRI, Gorham, ME; Evers, D., BRI, Gorham, ME; Schmerfeld, J., USFWS, Gloucester, VA. sarah.folsom@briloon.org

Recent studies indicate that methylmercury (MeHg) accumulation via the insectivorous pathway is of significant concern. Mercury (Hg) contamination and accumulation in insectivorous songbirds along riverine systems may have long-lasting, population level effects. Investigations by the BioDiversity Research Institute (BRI) of other riverine areas with historical waterborne point sources indicate continued contamination of aquatic-based biota can occur in river habitats for many years and miles downstream of the point source. The North Fork of the Holston River (NFHR) is a waterbody contaminated by a waterborne point source of mercury from a chlor alkali plant. A pilot study conducted by BRI and in 2005 showed that, relative to a concern level of 1.18 ug/g, ww (wet weight), 32% and 38% of the songbirds sampled in the near- and far- downstream (of point source) areas, respectively, were above this critical threshold and warranted further investigation. From 2005-2007, approximately 650 songbirds were sampled and blood and feathers collected. Samples were analyzed for total Hg (95% Hg in blood and feather is MeHg). In addition, 100 eggs were collected along with female blood when possible, to examine MeHg egg/blood relationship. Finally, in 2007, a pilot study of reproductive success as it relates to Hg was undertaken in a few target species. This study evaluates the potential risks of anthropogenic releases of Hg to songbirds along the NFHR.

Forsell°, D.

Bird Mortality from Longline and Gillnet Fishing: Can We Reduce Bycatch to Minimal Levels? Doug Forsell, USFWS, Annapolis, MD. Doug_Forsell@fws.gov

Substantial numbers of waterbirds are killed annually in fisheries making waterbird bycatch a serious conservation issue and a violation of the underlying tenants of the Migratory Bird Treaty Act. Over 100 species of waterbirds, mostly seabirds and waterfowl are susceptible to being caught by two types of fishing gear: longlines and gillnets. The U.S. Fish and Wildlife Service has worked for over 25 years to reduce the bycatch of marine birds. First in the 1980's the Service evaluated and worked to eliminate the High Seas Squid and Salmon Gillnet Fishery and the Japanese High Seas Salmon Mothership Fishery that were responsible for killing hundreds of thousands of shearwaters and alcids each year in the North Pacific Ocean. In the past 15 years observations of gillnets in nearshore and freshwater habitats throughout the Americas indicate that mortality figures may be less dramatic, but the cumulative mortality on diving ducks, loons, grebes, and seabirds may be substantial. Longline fisher-

ies impact albatross and petrels across the Pacific as many species are caught as they try to feed on the baited hooks as they are being deployed or retrieved. Several examples will be presented of how some fishers have been able to dramatically reduce bird bycatch, and how for other fisheries there seem to be no solutions. Biologists throughout the Americas should try to ensure that gillnets be attended while fishing to reduce bycatch.

Froehlich°, D.; Sprong, E.; Norman, D. M.

Teens Band: Inspiring Teen Banders as Ambassadors for Bird Conservation. Daniel Froehlich, PSBO, Seattle, WA; Sprong, E. PSBO, Seattle, WA; Norman, D. M., PSBO, Seattle, WA. danielfroehlich@gmail.com

During the past five fall seasons, members of the Puget Sound Bird Observatory have, run a week-long banding workshop for high-school students in partnership with Seattle Audubon at five sites in Washington's Cascade Mountains. The avian data collected assesses the role of montane meadows for prebasic molt. At the same time, the program has trained 32 teens from four states in bird-banding techniques. Camping on the edge of wilderness areas while collecting meaningful data instills in these teens a sense of wonder for Nature and offers them a hands-on experience of the scientific method as a way to learn about it. Many of these students are now pursuing careers in conservation and wildlife biology. This year, we will expand our banding activity in order to sample multiple sites simultaneously and to better track meadow use by molting individuals, as well as to train more teen banders. Further, participants from Seattle Audubon Society's BirdWatch Student Naturalist Program for high school students, of which most of the trainees are members, have begun to translate their summer bird-banding experience into public outreach programming as banders and docents at a monthly bird-banding project at a nature center in an urban park with high public exposure. The excited and skilled teens engage visitors effectively and are powerful ambassadors for bird conservation.

Fullen°, K.; Chi, R.; Dahlgren, D.

Greater Sage-Grouse Response to WHIP-funded Sagebrush Treatments in South-Central Utah. Karen Fullen, Natural Resources Conservation Service, Salt Lake City, UT; Chi, R., USFWS, West Valley City, UT; Dahlgren, D., Utah State University, Logan, UT. karen.fullen@ut.usda.gov

NRCS encourages application of conservation practices on nonfederal lands to benefit at-risk species like sage-grouse. Farm Bill programs such as the Wildlife Habitat Incentives Program (WHIP) provide cost-share to landowners to implement conservation practices to improve wildlife habitat. NRCS needs information regarding the effects of specific conservation practices and technologies on at-risk species.

NRCS provided WHIP funding to a grazing association for three different types of sagebrush canopy cover reduction treatments and other range improvements. Utah State University graduate students conducted a research study to assess the effects of the brush treatments on sage-grouse use of historical brood-rearing habitat.

Sixteen plots within mountain big sagebrush stands with approximately 40% canopy cover and limited herbaceous understory were selected to receive one of four treatments (chemical, Dixie harrow, Lawson aerator, and control) with 4 replicates of each. Treatments were conducted in 2000 and 2001.

Overall, shrub cover decreased and grass and forb cover increased following treatments**.** Study plots were surveyed in 2003 and 2004 for the presence of sage-grouse pellets and by flushing birds with dogs. More pellet clusters were found in treated plots than in control plots.Most pellets were found within 30m of untreated sagebrush. Brood use was also higher treated plots than in control plots, markedly so in the chemical treatments.

Gaines°, W. L.

Restoration of Ponderosa Pine Habitats for Focal Bird Species in the Eastern Cascades of Washington. William L. Gaines, USFS, Wenatchee, WA. wgaines@fs.fed.us.

Several focal avian species inhabit ponderosa pine forests in the eastern Cascades and have reported population and/or habitat declines. Reasons for these declines include past forest management, human development, fire exclusion, and uncharacteristically severe wildfires. Monitoring has indicated that restorative treatments such as low thinning and prescribed fire, if designed properly, can results in positive numerical, functional, and survival responses of several avian focal species. Bayesian Belief Network models were developed for several focal avian species in order to evaluate the current condition of their habitats and to identify the priority areas for habitat protection and restoration. This information is being used to revise Forest Plans and to provide management guidance on the silvicultural tools that best accomplishes habitat restoration objectives. In this presentation I will discuss results of the monitoring completed on the effects of restoration treatments on avian focal species, decision support models used to evaluate habitat conditions and management alternatives, and management guidance being integrated into the revised forest management plans.

Gallagher°, S.; Reddy, M.; VerCauteren, T. L.

Utilizing Farm Bill Programs for Bird Conservation in Colorado. Seth Gallagher, RMBO, Ft. Collins, CO; Reddy, M., NRCS, Ft. Morgan, CO; VerCauteren, T.L., RMBO, Ft. Collins, CO. seth.gallagher@rmbo.org

In Colorado Farm Bill funds have historically been underutilized for the conservation of non-game birds. In recent years due to the efforts of the Rocky Mountain Bird Observatory, Colorado Division of Wildlife, US Fish and Wildlife Service and NRCS several initiatives have been developed to help better utilize Farm Bill programs including Environmental Quality Incentive Program (EQIP), Wildlife Habitat Improvement Program (WHIP) and the Conservation Reserve Program (CRP) for the conservation of non-game, at-risk bird species. To help address and facilitate wildlife conservation in Colorado, biologists came together to prioritize conservation needs and worked within the guidelines of the Farm Bill to identify programs and practices that would benefit at-risk wildlife, such as prairie grouse, shortgrass prairie birds and priority habitats including riparian areas and playa wetlands. These initiatives are modeled after similar efforts in New Mexico and Montana. The availability of Farm Bill funds for non-game, at-risk bird projects has vastly increased in recent years however, challenges still exist in implementing successful projects including; high cost share rates, landowner fear of future regulation, and quality control to ensure projects target and benefit at-risk wildlife.

Gardali°, T.; Stralberg, D.; Merkle, W.; Farrell, S.

Developing Habitat-based Landbird Models as Planning Tools for the Golden Gate National Recreation Area and the Point Reyes National Seashore. Thomas Gardali, PRBO, Petaluma, CA; Stralberg, D., PRBO, Petaluma, CA; Merkle, W.,

Golden Gate National Recreation Area, Sausalito, CA; Farrell, S., Golden Gate Parks Conservancy, San Francisco, CA. tgardali@prbo.org

Land mangers must constantly make important decisions based on little or no scientific information. Their tasks are often complex, requiring the simultaneous consideration of multiple competing natural, cultural, and recreational resource requirements. To guide and support these decisions, managers benefit from scientifically-based, appropriately scaled syntheses of available information, which may be referred to as decision support tools. Using comprehensive avian survey data (1996-2005) and data layers derived primarily from a National Park Service vegetation map, we developed spatial models of species distribution and diversity within areas managed by the Golden Gate National Recreation Area and the Point Reyes National Seashore. Our objective was to assist these National Parks with resource planning and management using landbirds as indicators. We used a California Partners in Flight focal species approach to select appropriate avian metrics, including the occurrence of disturbance-sensitive species, and species richness of focal species by habitat. The spatial predictions generated by this study are being used to identify priority areas for habitat conservation and potential habitat restoration and enhancement and to determine the level and extent of possible impacts of selected planned management activities on landbirds.

Garrido°, E.

Strengthening Protection of the Avifauna of the Sierra de Bahoruco National Park, Dominican Republic. Esteban Garrido, Grupo Jaragua, Dominican Republic. trujin97@yahoo.es.

Sierra de Bahoruco National Park is in a key site for Caribbean endemic birds and wintering migrants and one of only 12 Alliance for Zero Extinction in the West Indies. Located on the border with Haiti, it is under serious pressure from slash and burn agriculture, illegal squatters, wildfires, hunting, and capture of nestling parrots for the pet trade. Guided by the Park Management Plan, Grupo Jaragua, National Parks authority and others are involved in a two-year effort to upgrade protection of the park's biological resources. Funded by the Neotropical Migratory Bird Conservation Act (USFWS), we have established a protocol for park staff to patrol and protect the southern boundary of the Park from further incursions, and patrols have already begun. Other activities include to define the most critical areas for protection within the park; develop a plan to extend the park boundary along the northwestern border to include and protect critical habitat for endemic and migratory bird species; establish a monitoring program through training and building capacity of park staff to identify migratory and resident bird species; and develop a database of bird records resulting from this monitoring program.

El Parque Nacional Bahoruco es un sitio clave para las aves endémicas del Caribe y aves migratorias invernaderas, y es uno de solamente 12 sitios de la Alliance for Zero Extinction en las Antillas. Ubicado en la frontera con Haití, el parque sufre de una presión seria de agricultura "tala y quema", ocupantes ilegales, incendios, caza, y captura de los pericos para el trafico de vida silvestre. Dirigido por el Plan de Manejo del Parque, Grupo Jaragua, la autoridad del Parque Nacional y otros han hecho un esfuerzo de 2 años para mejorar la protección de los recursos biológicos del parque. Con fondos del Neotropical Migratory Bird Conservation Act (USFWS), establecimos un protocolo de patrullaje y protección del limite sur del parque por personal del parque, para evitar incursiones adicionales, y los patrullajes ya comenzaron. Otras actividades incluyen definición de las áreas más críticas para protección en el parque; desarrollo de un plan para la extensión del limite del parque más al noroeste para que incluya y proteja el hábitat fundamental para las especies endémicas y especies migratorias; establecimiento de un programa de monitoreo a través de capacitación de personal del parque en la identificación de las especies de aves residentes y migratorias; y desarrollo de una base de datos sobre registros de aves resulto del programa de monitoreo.

Gaston°, T.

Climate Change, Sea-ice and Arctic Seabirds. Tony Gaston, National Wildlife Research Centre, Carleton University, Ottawa, Canada. tony.gaston@ec.gc.ca.

A major symptom of climate change over recent decades has been the retreat of Arctic sea-ice. For those species of marine birds which are adapted to marine waters with seasonal sea-ice cover, changes in the timing of break-up and freeze-up represent important determinants of breeding opportunity and of the entire annual cycle. I describe the consequences for seabirds of recent ice-cover changes in both Low and High Arctic environments and make some extrapolations based on current models for Arctic sea-ice conditions in future.

Gauthreaux°, S A.; Belser C. S.

Stopover Areas of Migratory Birds: Topography and Habitat Characteristics. Sidney Gauthreaux, Clemson Univ., Clemson, SC; Belser, C., Clemson Univ., Clemson, SC sagth@clemson.edu

It is possible to detect with Doppler weather surveillance radar (WSR-88D) concentrations of migratory birds shortly after they initiate a migratory movement and climb into radar coverage, and for 30-45 minutes, the concentrations of departing migrants clearly "map" the areas just left. After this time, the migrants have moved well beyond the source areas and the concentrations have become more dispersed. We have monitored migratory exodus events within a 120 km radius of approximately 50 radar stations in the United States during spring and fall migration and delimited stopover area. We have also characterized the stopover areas with respect to geography, topography, landscape, and habitat type. Our analyses suggest that stopover areas are more easily detected during dense migration events when large numbers of migrants are involved. When migration densities are low it is more difficult to detect concentrations of migrants and delimit stopover areas. Stopover areas appear to be stable from year-to-year and tend to be associated with forested wetlands and floodplain habitat. In areas with extensive deciduous forest stopover areas are not concentrated but diffuse. There is a need to inventory and characterize stopover areas for migratory birds (waterbirds and landbirds) along migratory routes so that these important areas can be protected.

Gehring°, J.; Manville, II, A. M.

Avian Collisions with Communication Towers and Opportunities to Significantly Reduce the Risk. Joelle Gehring, MSU, Lansing, MI; Manville, II, A. M., USFWS, Arlington, VA. GehringJ@Michigan.gov.

For approximately 55 years researchers have documented songbird attraction to lighted communication towers resulting in collisions and fatalities. It is estimated that conservatively 4-5, to perhaps 40-50 million birds/year collide with US towers. Several tower variables contribute to the frequency of bird collisions including: height, lighting, siting within the landscape, and guy wire presence. Ongoing research has demonstrated that collisions

can be almost completely prevented by constructing self-supported, instead of guy-supported, towers, and that the frequency of collisions with guyed towers can be significantly reduced by 50-71% by eliminating non-blinking tower lights. The Federal Communications Commission, the licensing agency for communication towers, has proposed an official rule-making in the interest of avian conservation requiring towers to be lit only with blinking lights at night. However, the Federal Aviation Administration currently requires that red tower lighting systems include both blinking and non-blinking lights. Although white lighting systems do not require non-blinking lights, retrofitting towers from red to white lighting systems is cost-prohibitive to the tower industry. Current conservation efforts involving the tower industry and conservation groups focus on expanding opportunities to eliminate non-blinking tower lights in a cost-effective way; thereby, providing greater incentive and opportunity to comply with the Migratory Bird Treaty Act, the Endangered Species Act, and the Bald and Golden Eagle Protection Act. This paper reviews recent and ongoing research, findings, and recommendations.

George*, A. D.; O'Connell, T. J.; Hickman, K.; Leslie, Jr., D. M.

Avian Response to Old World Bluestem *Bothriochloa ischaemum* Monocultures in Mixed Grass Prairie. *Andrew D. George; O'Connell, T.J.; Hickman, K.; Leslie, D.M. Jr., Dept. Natural Resource Ecology and Management, OSU, Stillwater, OK. andy.george@okstate.edu.

Despite persistent and widespread declines of grassland birds in North America, few studies have assessed differences between native grasslands and seeded monocultures as songbird habitat. In the Great Plains, many fields enrolled in the Conservation Reserve Program have been seeded to Old World Bluestems (OWB), but there is evidence to suggest that OWB may not provide suitable conditions for several grassland bird species. The objectives of our study are to compare breeding bird communities in OWB monocultures to native mixed grass prairie, and to evaluate the influence of vegetation structure and composition on bird abundance and diversity in all seasons. In addition, we will quantify food availability by comparing arthropod community composition and biomass between the two habitat types. In 2007, we established 6 native mixed grass prairie and OWB fields in Garfield, Grant, and Alfalfa Counties, Oklahoma (U.S.A.). We used distance sampling to survey birds in each site throughout the 2007 breeding season, and will continue sampling approximately monthly through July 2008. Preliminary analyses from the 2007 breeding season suggest comparable avian diversity and abundance between OWB and native grass fields. Canonical Correspondence Analysis (CCA) identified maximum vegetation height, vertical obstruction, and variation in vegetation height as important factors influencing community composition.

Monoculturas de la Gramínea *Bothriochloa ischaemum* en la Zona Esteparia de Hierba Mixta (Mixed Grass Prairie).

A pesar de continuas y extendidas reducciones en las poblaciones de aves esteparias en Norteamérica, pocos han investigado las diferencias entre las estepas (prairies) nativas y las monoculturas sembradas como habitat para paserinos. En los llanos del centro de Norteamérica, muchos pastos incorporados en el Conservation Reserve Program han sido sembrados con *Bothriochloa ischaemum,* procediente del Viejo Mundo. Sin embargo, hay prueba de que esta gramínea no crea las condiciones adecuadas para varias especies de aves nidificantes de la zona esteparia. Los objetivos de nuestro estudio son la comparación de las comunidades de aves nidificantes en las monoculturas de *Bothriochloa ischaemum* con las de la zona esteparia de hierba mixta y la evaluación la influencia de la estructura y composición vegetal en la abundancia de aves durante todas las temporadas. Además, medimos la cantidad de nutrición presente en los dos tipos de habitat comparando la composición y biomasa de la comunidad de artrópodos. En el 2007, establecimos 6 campos de hierba mixta (nativa) y 6 de *Bothriochloa ischaemum* en los ayuntamientos de Garfield, Grant y Alfalfa en el estado de Oklahoma en E.E.U.U. Utilizamos el monitoreo a distancia para estimar las poblaciones de aves en cada sitio durante toda la temporada de nidificación en 2007 y continuaremos el monitoreo aproximadamente cada mes hasta julio del 2008. Los análisis preliminarios de la temporada 2007 sugieren abundancias de aves comparables entre campos de *Bothriochloa ischaemum* y los campos de hierba nativa. El Análisis de Correspondencia Canónica (CCA) identificó la estatura máxima de la vegetación, la obstrucción vertical y la variación en estatura vegetal como factores importantes e influyentes en la composición de comunidades de aves.

Geupel°, G. R.; Ballard, G.; Gardali, T.; Nur, N.

The Unexpected Values of Multi-species Monitoring Programs to Guide Conservation. Geoffrey R. Geupel, PRBO, Petaluma, CA; Ballard, G., PRBO, Petaluma, CA; Gardali, T., PRBO, Petaluma, CA; Nur, N., PRBO, Petaluma, CA. ggeupel@prbo.org.

Avian monitoring programs are often criticized for neglecting to define specific objectives that are linked to current management and conservation actions. Furthermore many agencies are currently recommending limiting monitoring to focus on species that are at risk. We examined four long-term (12 to 40 year) multi-species monitoring programs currently being operated by PRBO Conservation Science, in four different habitats (marine, tidal marsh, riparian, and coastal scrub) to compare original objectives with current objectives. We found many novel applications of results that were not considered in the original design. These 'retrospective analyses' include using birds as indicators of commercially valuable fish populations, guiding and changing habitat restoration projects, proactively identifying areas of high biodiversity, and developing population objectives for multiple species at different scales. Information obtained was of high value to management agencies and conservation organizations because a broad range of parameters were measured, from species richness to occupancy by focal species to demographic parameters that reflect key population processes and underlie population stability, parameters that vary in relation to habitat and landscape features. These examples show the inherent value of long-term, multi-species bird monitoring to address current and future--as yet unknown--threats to populations and ecosystems.

Geupel°, G. R.; Stralberg, D.

Central Valley Joint Venture Targets for Riparian Habitats. Geoffrey R. Geupel, PRBO Conservation Science, Petaluma, CA; Gardali, T., PRBO Conservation Science, Petaluma, CA; Stralberg S., PRBO Conservation Science, Petaluma, CA. ggeupel@prbo.org.

Pressures from a rapidly expanding human population, climate change, and other threats have made the conservation and restoration of riparian systems a high priority in California's Central Valley and throughout the West. To guide implementation we developed quantifiable population targets based on habitat

objectives for riparian focal bird species for the Central Valley Joint Venture and its partners. We derived current population sizes for 7 species in 8 basins from mean density estimates (corrected by detection coefficients) using off-road bird surveys (point counts) extrapolated over the amount of known riparian habitat in each basin. Assuming that most current densities were under estimates related to poor habitat condition, we used the 75th percentile of density estimates and extrapolated this estimate over the potential number of riparian hectares for each basin. Potential habitat was determined by using soil maps corrected for permanent habitat loss (e.g. development). We also analyzed data on reproductive success and survival from demographic monitoring efforts to set demographic targets for a subset of these species. Each target is then used to set, describe, and measure current and desired conditions. We are expanding this process to other habitat types and associated focal species in order to provide a complete multi-habitat approach at a watershed level. Propitiation targets are used to prioritize basins and proposals for conservation actions and to evaluate the effectiveness of management and restoration actions.

Gibbons*, R.E.

Ecology and Conservation of Birds in Peru's High Andean Peatlands: An Integrated Field and Niche Modeling Approach. Richard E. Gibbons, LSU, Museum of Natural Science, Baton Rouge, LA; rgibbo3@lsu.edu.

Information for birds in high Andean puna peatlands consists of anecdotal reports from expeditions spanning the last century. The peatlands within the puna biome include more than 70 species comprised of both breeding residents and non-breeding boreal and austral migrants. Basic ecological information such as population estimates, habitat preferences, and community species composition and interactions will be developed. This data, coupled with a peatland extent estimate, will be used to explore the effects of climate change using niche-modeling techniques.

Giocomo°, J. J.; Buehler, D. A.; Fitzgerald, J. A.

Integrating Grassland and Shrub Bird Conservation with the Northern Bobwhite Conservation Initiative for the Central Hardwoods Bird Conservation Region. James Giocomo; Buehler, D. A., UT, Knoxville, TN; Fitzgerald, J., ABC, Brentwood, MO. Jim.Giocomo@-tpwd.state.tx.us.

Much attention has been focused on conservation strategies to increase Northern Bobwhite habitat availability including the organization of the Southeast Quail Study Group Technical Committee and the creation of the Northern Bobwhite Conservation Initiative (NBCI). As NBCI moves from planning to implementation, there is a need to understand how management for Northern Bobwhite will affect populations of other priority bird species that use grassland and shrub/scrub habitats. Integrating habitat needs for those species with the NBCI will help the overall goal of Joint Ventures "to deliver full spectrum of bird conservation." The goal of this analysis was to provide decision support tools for the initial steps in Strategic Habitat Conservation for early successional bird species in the Central Hardwoods BCR. We built upon current population estimate methods to evaluate population goals for grassland and shrub-scrub songbirds in specific target areas within the Central Hardwoods BCR, and estimated the amount of habitat needed to achieve those goals. We compared the needed acreage with existing area of private lands enrolled in the Conservation Reserve Program (CRP). For many widespread focal species the amount of available habitat would need to be increased by 3 to 10 times current CRP levels to achieve population targets.

Golder, W.; Smalling°, C.

Prioritization of the Important Bird Areas of North Carolina for Conservation Utilizing the Metrics of the National Audubon Society Important Bird Areas Program Database. Walker Golder, Audubon North Carolina, Wilmington, NC; Smalling, C., Audubon North Carolina, Boone, NC. csmalling@audubon.org

Audubon North Carolina (ANC) released its first iteration of the publication The Important Bird Areas of North Carolina in 1994, which designated 92 IBAs statewide encompassing over 4.3 million acres of area. As the conservation phase of the IBA program begins in earnest, it became clear that an objective method was needed to prioritize limited resources to work in those areas were the most good could be done for the most and highest priority species and where successes might be more likely. Using metrics available in the National Audubon Society Important Bird Areas database, ANC developed a prioritization scheme that uses the components of that database to rank IBAs. Species diversity and priority, threat assessment, protection status of the lands with in the IBA, priority habitat coverage, and ownership are metrics utilized under this scheme. The process and results will be addressed in this presentation as well as some of the challenges and opportunities with this approach.

Grand°, James B.; Kleiner, K. J.; Vogt, Allison

A Decision Support Tool to Guide the Conservation of Open Pine Habitats in the East Gulf Coastal Plain. James B. Grand, USGS, Auburn, AL; Kleiner, K., Auburn University, Auburn, AL; Vogt, A., East Gulf Coastal Plain Joint Venture, Auburn University, AL. grandjb@auburn.edu.

Although the longleaf pine ecosystem once covered about 90 million acres in the southeastern United States recent estimates indicate this may have been reduced by as much as 97%. Several species of birds, reptiles, amphibians, and plants associated with longleaf and other open-canopy pine ecosystems are of great conservation concern. As a result, the East Gulf Coastal Plain Joint Venture has identified open-pine ecosystems as a priority habitat for conservation action. We used spatial data from Gap Analysis Projects and Breeding Bird Survey to develop a model for prioritizing areas for conservation actions. First we used a map of probable longleaf systems to determine where open-pine systems occur. We then masked unsuitable sites and those unlikely to be restored to determine where open-pine habitats could be restored. Finally, we prioritized areas for conservation through an integrated analysis of where sustainable populations of important species likely exist, where potential habitat exists that could be used to augment or create sustainable populations, where open-pine systems could be maintained in the long-term, where suitable sites exist for open-pine systems, and where open-pine systems are likely to be managed with frequent fire. Our method makes extensive use of density estimators with kernel sizes based upon ecological and management considerations to produce a high-resolution map of priority areas for conservation of birds associated with open-pine habitats. This map could be used in conjunction with current land use-land cover data to determine priorities for the implementation of on-the-ground conservation programs.

Greenberg°, R.

What Makes North American Coastal Marshes so Special? The Status of Endemic Avian Taxa. Russell Greenberg, Smithsonian Migratory Bird Center, National Zoological Park, Washington, D.C. greenbergr@si.edu

Coastal tidal marshes represent a strongly divergent selective environment, and therefore, endemism and local specialization are particularly well-developed. However, the amount and location of marshes throughout the Quaternary has been unstable and gone through distinct bottlenecks during periods of glaciations. Probably as a result of this most differentiation is at the level of the subspecies. Two species (Saltmarsh Sharp-tailed Sparrows, *Ammodramus caudacutus*; Seaside Sparrow, *Ammodramus maritimus*) are largely or completely restricted to coastal marshes, ten species have subspecies restricted to coastal marshes, and an additional two species are restricted to marshes in a large portion of their range, but without known differentiation. The endemic taxa are primarily Emberizid sparrows (six species), with members of the Trogolyditidae, Rallidae, Icteridae, and Parliduae comprising the remaining species. This number of endemic tidal marsh taxa has not been described from any other coastal region in the world. Because of the restricted distribution of coastal marshes, most of these taxa have relatively small population sizes (in the range of thousand to tens of thousands). Additionally, because of the myriad threats to coastal marsh ecological integrity (invasive species, changes in hydrology, contaminants, sea-level rise) all these taxa should be the focus of conservation concern. In this paper I will review what is known of the distribution and abundance, specific threats, and the established conservation status of endemic coastal marsh taxa. In addition, the existing survey programs that provide information about these taxa will be described so that coverage can be assured in future monitoring efforts.

Greenberg°, R.; Blancher, P.; Niven, D.; Droege, S.

Long-term Decline and Short-term Crash of the Once Abundant Rusty Blackbird. Russell Greenberg, Smithsonian Migratory Bird Center, National Zoological Park, Washington, D.C.; Blancher, P., Bird Studies Canada, Canada; Niven, D., National Audubon Society, Illinois; Droege, S., Patuxent Wildlife Research Center, Laurel, MD. greenbergr@si.edu.

The Rusty Blackbird (*Euphagus carolinus*), a formerly common breeding species of boreal wetlands, has exhibited the most marked decline of any North American landbird. North American Breeding Bird Survey (BBS) trends in abundance are estimated to be -12.5% / yr over the last 40 years, which is tantamount to a >95% cumulative decline. Trends in abundance calculated from Christmas Bird Counts (CBC) for a similar period indicate a range-wide decline of -5.6% / yr. Qualitative analyses of ornithological accounts suggest the species has been declining for over a century before the period covered by the estimated declines. Several studies document range retraction in the southern boreal forest, whereas limited data suggest that abundance may be more stable in more northerly areas. This pattern is both supported and contradicted by winter declines based in CBC data. The lower estimates of decline in the CBC data compared to BBS is consistent with the idea that the coverage of BBS is biased towards the southern boreal whereas CBC covers the entire winter range. However, the CBC declines are similar between the South Atlantic coast (with populations derived from the southeastern boreal) and the Mississippi Valley (populations from the northwest boreal). The major hypotheses for the decline include degradation of boreal habitats from logging and agricultural development, mercury contamination, and wetland desiccation resulting from global warming. Other likely reasons for decline include loss or degradation of wooded wetlands of the southeastern U.S and mortality associated with abatement efforts targeting nuisance blackbirds. We present a matrix of hypotheses and predictions that test them based on the geography of decline and more detailed indicators of population health which should form the strategic basis of future research.

Greenº, M.

Tricolored Blackbirds: Species Status and Conservation Activities. Michael Green, USFWS, Portland, OR. Michael_green@fws.gov

Tricolored Blackbirds (Tricolors) are perhaps the most gregarious landbird in North America. Colonies comprising 100,000 birds (25% of the global population) can be found in a 40 ha field. Loss of native habitat and a predilection for nesting in agricultural fields have led to steep population declines since the 1950's, however. The 2005 triennial survey suggested a global population near 250,000, larger than estimates in 2004 and 2000, but far below the millions that once thrived in California. Tricolors rank high on lists prioritizing birds in conservation need because of this population decline, a relatively small global population and distribution, and continuing threats. Twice in the past 15 years it has been proposed for listing (unsuccessfully) as endangered or threatened on State and Federal lists. A working group of agencies, NGOs, agricultural industries, and researchers has developed, *and is implementing*, a Conservation or Action Plan for Tricolored Blackbirds to improve the status of this species. This plan identifies goals, objectives, and tasks in 4 categories, Conservation and Management, Research and Monitoring, Data Storage and Management, and Outreach and Education. The several tasks in each category that will be started or completed in 2008 are described.

Grosselet°, M.; Gonzaléz Robles, R. O.; Ruiz, G.

Trends of Common Species in Central Valley of Oaxaca State, Mexico. Manuel Grosselet; Rosa O. Gonzaléz Robles.; Georgita Ruiz, Tierra de Aves, Mexico. birdinnet@-yahoo.com.mx.

After a 6 years of constant banding effort in the Botanical Garden of Oaxaca City, using the same protocol, the first medium term trends of 12 species are described, of which 3 show a tendency to decrease,6 species show increasing trends, and 3 show no significant trend. The trends of populations of bird species in Mexico is practically unknown, so we encourage the continuation of this banding effort throughout Mexico.

Grosselet°, M.; Pigeon, A.; Villa, B.

Road Casualities of Vertebrates on 1.2 kms of a Highway in Southern Oaxaca, Mexico. Manuel Grosselet; Alejandro Pigeon; Bernadino Villa, Tierra de Aves, Mexico. birdinnet@-yahoo.com.mx

During 50 days of daily monitoring the number of dead vertebrates along a 1.2 km stretch of highway that goes from the Transistmic highway towards Chiapas. 234 carcasses of vertebrates were recorded which appears to be one of the highest incidence of this sort of mortality reported. The true road impact is unknown for Mexico and other tropical countries. This work helps to better understand the impact and permits us to recommend mitigation measures for future road development projects.

Gutiérrez°, M.; Zolotoff-Pallais, J. M.

Avian Population Behavior in the Cloud Forest of Natural Reserve Volcan Mombacho: Five Years of a Monitoring Project. . Mariamar Gutiérrez, Fundación Cocibolca, Nicaragua; Zolotoff-Pallais, J. M., Fundación Cocibolca, Nicaragua. mariamargutierrez@hotmail.com.

The Natural Reserve Volcan Mombacho is of national importance by having one of the only two cloud forests of the Pacific of Nicaragua, giving refuge to a number of species of conservation importance of restricted distribution or particular habitat requirements. This monitoring project is set up within the MoSI national efforts and took place in the Mombacho cloud forest between December and March from 2002 to 2007. Aside from the objectives established by MoSI, the monitoring in Mombacho seeks to evaluate the behavior of resident bird populations. Seventeen families were sampled corresponding to 38 species (24 residents, 14 migratory).

The families with greatest richness were Parulidae (10) and Trochilidae (5). The most abundant species were Mountain Elaenia, Purple-throated Mountain-gem, and Wood Thrush. There were significant differences for richness ($F= 3.65328$, $p<0.05$), abundance ($F=4.3166$; $p<0.05$), and diversity ($F=6.72482$; $p<0.05$) between seasons, with Season IV (2005-2006) being the most different, probably due to the violent hurricane activity of that year. March presented the greatest difference in richness and abundance, possibly due to the increase of bird activity brought on by the start of the breeding season. Mombacho is an important refuge for migratory birds of conservation importance, by providing wintering and stopover habitat.

Comportamiento Poblacional de Aves en el Bosque Nuboso de la Reserva Natural Volcán Mombacho: Un Proyecto de Monitoreo de Cinco Años

La Reserva Natural Volcán Mombacho presenta importancia nacional al albergar uno de los dos únicos bosques nubosos de la vertiente del Pacífico de Nicaragua, dando refugio a numerosas especies de importancia para la conservación de distribución restringida o de requerimientos de hábitat particulares. Este proyecto de monitoreo se enmarca en los esfuerzos nacionales de MoSI y se realizó en el bosque nuboso del Mombacho entre los meses de diciembre y marzo desde 2002 al 2007. Además de los objetivos establecidos por MoSI, el monitoreo en Mombacho busca evaluar el comportamiento de las poblaciones de aves residentes. Se han muestreado 17 familias correspondientes a 38 especies (24 residentes, 14 migratorias).

Las familias con mayor riqueza son Parulidae (10) y Trochilidae (5). Las especies más abundantes son *Elaenia frantzii, Lampornis calolaema* e *Hylocichla mustelina*. Se encontraron diferencias significativas para la riqueza ($F= 3.65328$, $p<0,05$), abundancia ($F=4.3166$; $p<0.05$), y diversidad ($F=6.72482$; $p<0.05$) entre temporadas, siendo la Temporada IV (2005-2006) la de mayor diferencia, probablemente por la violenta actividad de huracanes en ese año. El mes de marzo presentó la mayor diferencia en riqueza y abundancia, posiblemente debido al aumento de actividad de las aves por el inicio de la época reproductiva. Mombacho es un importante refugio para aves migratorias, tanto como hábitat de invierno como hábitat de paso o migración.

Hagar°, J. C.; Altman, B.

Providing Habitat for Birds in Managed Conifer Forests of the Pacific Northwest. Joan Hagar, USGS, Corvallis, OR; Altman, B., American Bird Conservancy, Corvallis, OR. joan_hagar@usgs.gov.

Silvicultural practices influence habitat for forest songbirds by manipulating stand structure. Forests managed for timber production tend to have simplified structure compared to natural forests due to the emphasis on mid-seral stage conifers. Large diameter trees, dead wood, and floristic diversity are important habitat elements that provide food and cover for a diverse community of forest songbirds, yet typically are underrepresented in managed forests. Trees that develop complex structure over time offer an array of unique niches for foraging and nesting. Dead wood is a critical habitat element used by approximately one-third of the bird species in Northwest conifer forests. Floristic diversity, in particular the presence of shrubs and hardwood trees, provides important food and cover resources for a large number of forest bird species. Allowing greater development of non-coniferous vegetation in managed forests would make a significant contribution to the maintenance of songbird diversity. Management strategies that incorporate these key habitat elements can enhance habitat for songbirds throughout all phases of forest development.

Hahn°, D.

Conserving Birds on Private Lands – A National Perspective. Deb Hahn, Association of Fish and Wildlife Agencies, Washington DC. debhahn@fishwildlife.org.

The U.S. North American Bird Conservation Initiative (NABCI) Committee is a coalition of government agencies, private organizations, and bird initiatives in the United States working to advance integrated bird conservation. Realizing that 70% of the land in the U.S. is privately owned, one focus of the U.S. NABCI Committee is bird conservation on private lands.
Working at a national level entails a suite of challenges and opportunities. Conservation provisions of farm legislation (Farm Bill) offer opportunities to conserve and enhance bird habitat on private lands. The decentralized nature of agencies implementing Farm Bill programs [e.g., Natural Resources Conservation Service (NRCS) and Farm Services Agency (FSA)] and the U.S. Forest Service State and Private Forestry Program affects how these programs are delivered in the field and ultimately how birds are benefited. At the national level, we can promote specific conservation programs and funding levels for those conservation programs but it is at the state and local level that conservation action and program implementation decisions are made. We can work to encourage members of the bird conservation community to engage NRCS State Technical Committees. NABCI has can communicate consistent bird conservation messages to NRCS State Conservationists and FSA State Directors. The majority of conservation practitioners at the local level are not biologists. Effective conservation requires a collaborative effort among partners to determine the type and location of conservation efforts that will benefit birds.

Hahn°, D.

The Southern Wings Program - Conserving State Priority Birds on their Wintering Grounds in Latin American and the Caribbean, Deb Hahn, Association of Fish and Wildlife Agencies, Washington DC. debhahn@-fishwildlife.org.

Migratory birds are a shared resource in which many species rely on habitats in different regions and/or nations to sustain their annual breeding, migration and wintering needs. These species do not recognize geopolitical boundaries or organizational responsibilities during their annual migrations. Conservation responsibilities transcend state borders and national boundaries.

This principle is widely recognized for waterfowl. It is likely that many State Fish and Wildlife Agencies participate in conservation activities in Canada where most of the North America's waterfowl are produced. Waterfowl, however, are not unique in their dependence on habitats in widely varying geographies. The economic significance of migratory birds is also well known. State Wildlife Action Plans were recently completed by all states as mechanisms to guide broad spectrum wildlife conservation programming. Migratory birds were a high profile element of virtually all state action plans. A program will need to be developed to provide an opportunity for State Fish and Wildlife Agencies to participate in conservation activities in Latin America and the Caribbean. The program will need to (1) be based solidly on science, (2) allow for relatively easy and seamless financial participation by the states, (3) provide progress reports to the states, (4) provide match to state contributions, and (5) respect existing partnerships and initiatives.

El Programa Ala Surenas – La Conservacion de Aves Prioritarias Estatales en su Tierra de Invernacion en Latinoamerica y el Caribbe

Como un recurso compartido, las aves migratorias cuentan con los habitats en regiones y/u naciones distintas para sostener la anidacion anual, la migracion y las necesidades de vida durante el invierno. Estas especies no se recononcen los bordes geopoliticos ni responsabilidades de organizaciones durante ls migracion annual. Responsabilidades para la conservacion se trascienden los bordes estatales y fronteras nacionales. Se esta bien conocido este principio en cuanto a las aves acuaticas (los patos). Es posible que se participen muchas agencias estatales de pesca y vida silvestre en acitividades de conservacion en el canada donde la mayoria de las aves acuaticas de Norteamerica se estan producido. Las aves acuaticas, sin embardo, no son las unicas con dependencia de habitats en geografias bien distintas y separadas. Tambien, se esta bien conocido la significancia economica de aves migratorias. Los planes de accion estatales de vida silvestre se cumplieron recientemente todos los estados de Estados Unidos como mecanismo para guiar la programacion de conservacion de vida silvestre de ancho alcance. Se estuvieron sumamente un elemento de perfil alto de practicamente todos los planes estatales de accion. Un programa deberia ser dessarrollado para proveer la oportunidad de participacion en latinoamerica y el caribbe de las agencias estatales de pesca y vida silvestre. El programa deberia: 1)tener una base cientifica, 2)proveer una via de participacion facil y no complicada a los estados, 3) proporcionar reportes de actualizacion a los estados, 4) incluir contibuciones financiera de contrapartida a las de los estados, y 5) dar el debido respeto a las asociaciones y iniciativas ya existentes.

Hamel°, P. B.; Ozdenerol, E.

How the Spatial Filtering Process is Accomplished to Evaluate Nonbreeding Range of Rusty Blackbird. Paul Hamel, USFS, Stoneville, MS; Ozdenerol, E., Univ. Memphis, Memphis, TN; phamel@fs.fed.us.

During the nonbreeding period, Rusty Blackbird (Euphagus carolinus) occurs predominantly in forested wetland habitats in the southeastern United States. We used spatial filtering of Christmas Bird Count data to identify areas within the nonbreeding range where the species occurs at higher than expected probability. Spatial filtering is a modeling process developed in epidemiology for identifying concentrations of cases of a phenomenon against a null expectation developed using Monte Carlo simulation of existing data. Using separate data sets in which cases were identified as "Occurrence of at least 1 Rusty Blackbird" or as "Occurrence of at least 10 Rusty Blackbirds", we developed annual probability estimates of observed occurrence vs null simulations of existing number of cases distributed at random among locations at which Christmas Bird Counts were conducted. We were thus able to identify consistent concentrations of Rusty Blackbird occurrence in the Mississippi Alluvial Valley (MAV) and in the southeastern Coastal Plain of the Carolinas and Georgia. We were also able to identify and eliminate some of the noise created in the Christmas Bird Count data by the nonrandom or convenience sampling distribution of count circles. Spatial filtering is a method of considerable utility for investigating spatial distribution of birds and comparing the observed distribution with a null expectation.

Como se realiza el proceso de Filtración Espacial para evaluar el rango no reproductivo del ictérido Euphagus carolinus.

Durante el periodo no reproductivo el ictérido Euphagus carolinus ocurre mayormente en bosques pantanosos del sureste de los EEUU. Aplicamos un análisis espacial de filtración a los datos de Conteos Navideños para identificar áreas adentro del rango no reproductivo a donde se ocurre el ictérido con una probabilidad más alta que la esperada. La filtración espacial es un proceso de modelaje desarrollada para la epidemiología en donde se identifican concentraciones de ejemplares del fenómeno contra un modelo nulo que se calculó utilizando simulación Monte Carlo de datos existentes. Identificamos bases separadas de datos por casos de "Ocurrencia de al menos un ictérido" o de "Ocurrencia de al menos diez ictéridos" por Conteo Navideño. Hicimos cálculos anuales de probabilidad de datos realizados vs. simulaciones nulas de número realizado de casos distribuidos al azahar dentro de lugares de Conteos Navideños realizados en mismos años. Pudimos identificar ocurrencia regular de concentraciones de Euphagus carolinus en bosques húmedos de tierras bajas dentro del valle del Rió Mississippi y en la planicie costera de Georgia y las Carolinas. También pudimos identificar y eliminar algo de la variación ya existente en datos de Conteos Navideños introducida por la distribución no al azahar de lugares muestreados. Filtración espacial es una técnica muy útil para investigar la distribución espacial de aves y poder comparar una distribución realizada con un pronóstico nulo.

Hamel°, P. B.; Welton, M. J.; Smith, III, C. G; Ford, R. P. F

Effective Detection Distances for Cerulean Warbler in Bottomland Hardwood Forest. Paul B. Hamel, USFS, Stoneville, MS; Welton, M. J., Franklin, TN; Smith III, C. G., USFS, Stoneville, MS; Ford, R.P., USFWS, Memphis, TN. phamel@fs.fed.us.

Estimation of population sizes of North American avian species has been attempted in the PIF Flight Plan. Such estimated numbers have considerable conservation value as starting points to estimate extinction probability, as was done for Cerulean Warbler (*Dendroica cerulea*) during the US Fish and Wildlife Service evaluation of the petition to list the species as Threatened. Population estimates presented in the Flight Plan reflect assumptions applied to counts reported by observers on Breeding Bird Survey routes. One of these assumptions is the assignment of species to effective detection distance radii. We chose to test the assumption that effective detection distance of 125m for Cerulean Warbler was an adequate value in bottomland hardwood and other forests in the species' breeding range. We randomly selected roadside and offroad locations, visited each multiple times with multiple observers, and used hand-held GPS units to measure the distance between count station and

birds detected aurally. We used multiple covariate distance sampling to analyze these data in Program Distance. Our best estimate of effective detection distance is 100m (95% CI 91-110), significantly lower than 125m. Consequently, the total population estimate of Cerulean Warbler in the Flight Plan, 560,000, should be revised to approximately 875,000; assuming all other factors involved in the calculation of total population remain equal.

Distancias Efectivas de Detección para la Reinita Cerúlea (*Dendroica cerulea*) en Bosques de Tierras Bajas.

Estimar el tamaño de las poblaciones de aves en Norte América forma parte del Plan de Vuelo de la organización Compañeros en Vuelo. El valor de conservación de estos estimados reside en su utilidad como punto de partida para poder estimar probabilidad de extinción de especies como la Reinita Cerúlea (*Dendroica cerulea*). Esos estimados fueron utilizados durante el proceso de revisión que llevo a cabo el Servicio Federal de Pesca y Vida Silvestre para atender la solicitud de listado para la especie bajo el Acta de Especies en Peligro de Extinción. Los estimados poblacionales presentados en el Plan de Vuelo reflejan premisas aplicables a los conteos reportados en el censo anual de aves durante la época reproductiva (BBS, por sus siglas en ingles). Una de estas premisas consta de asignar cada especie a un radio efectivo de detección. En este trabajo evaluamos la validez del radio de detección de 125m establecido para la Reinita Cerúlea en distintos tipos de bosque dentro de su rango reproductivo. Seleccionamos localidades al azahar dentro y fuera de caminos las cuales visitamos en varias ocasiones con múltiple observadores y usamos unidades portátiles de GPS para determinar la distancia entre las estaciones de conteo y los individuos detectados auditivamente. Utilizamos muestreo a distancia en un diseño de covariables múltiples analizado en el programa Distance. El mejor estimado para distancia efectiva de detección fue 100m (95% CI 91-110) lo que es significativamente menor a 125m. Por tanto, los estimados poblacionales para la Reinita Cerúlea presentados en el Plan de Vuelo de 560,000 individuos deben ser modificados a unos 875,000, asumiendo que todos los otros factores envueltos en este cálculo permanezcan igual.

Hanni° D.; Sparks, R.; Sambuu, C.

RMBO Regional Access Node Decision Support Tools. David Hanni, Fort Collins, CO; Sparks, R.; Sambuu, C. david.hanni@rmbo.org.

Land managers are frequently making decisions when conducting on the ground habitat projects that impact bird populations. These decisions are made with limited knowledge on how bird populations are affected either positively or negatively. Rocky Mountain Bird Observatory (RMBO) has developed a regional access node (www.rmbo.org/public/monitoring) to the Avian Knowledge Network (AKN) that provides Decision Support Tools to the clients or end users. These tools provide information on habitat associations, count data and population estimates. The website is also capable of online data entry and downloads serving as a clearinghouse for RMBO monitoring data.

Hanni°, D.; Sullivan, B. L.; Geupel, G. R.; Stephens, J. L.; Ballard, G.; Alexander, J. D.

The Avian Knowledge Alliance (AKA): An Outreach Network for Education and Management. David Hanni, Fort Collins, CO; Sullivan, B., Cornell University, Ithaca, NY; Geupel, G., PRBO, Petaluma, CA; Stephens, J., KBO, Ashland, OR; Ballard, G., PRBO Petaluma, CA; Alexander, J., KBO, Ashland, OR. david.hanni@rmbo.org

The Avian Knowledge Alliance (AKA) is a group of partners committed to the compilation, management and dissemination of data hosted by the Avian Knowledge Network (AKN). One of the main roles of the AKA is to facilitate data transfer from a network of local and regional partners to the appropriate AKN access nodes. Once in the AKN, these data can be used to design and develop decision support tools to assist in the delivery of conservation by land owners, land managers, decision makers and the interested public. The main objectives of the AKA include 1) Develop and support partnerships to increase synergy and communication, primarily among regional NGOs increasing the effectiveness and efficiency of data acquisition, synthesis and analyses. 2) Realize the unique capacities of NGOs to help meet the monitoring needs of management agencies for purposes of stewardship and bird conservation. 3) Use birds as the primary tools for Decision Support Tools that deliver scientifically rigorous information in an adaptive management framework. The ability of the AKA to help direct conservation revolves around our full circle approach to bird conservation, beginning and ending with the client.

Hawthorne, J.; LeFebre°, M.

The Birth of BEN (the Bird Education Network): A New Chapter in Bird Conservation. Josetta Hawthorne, Council for Environmental Education (CEE) & Flying WILD, Houston, Texas; Marc LeFebre, CEE & Flying WILD, Houston, Texas. JosettaH@aol.com.

A new milestone was reached last year with the first national conference held specifically for professionals involved in bird education. At the conference, Bird Conservation through Education: A National Gathering, 155 individuals representing 106 organizations came together to network and strategize. Results from the conference include recognition of the need for future networking opportunities (including an annual meeting), the creation of a bird education list-serve, and the establishment of two resolutions—one calling for support of bird education and the other to develop a comprehensive bird education plan. This presentation will report on plans for organizing and structuring this new Bird Education Network (BEN), progress toward a national strategy, and opportunities and challenges for BEN in creating a bird conservation oriented society.

Heath°, S. A.; Shackelford, C. E.

Project Prairie Birds: Species Assessment for Wintering Grassland Birds on Texas Coastal Prairies. Susan A. Heath, GCBO, Lake Jackson, TX; Shackelford, C.E., TPWD, Nacogdoches, TX sheath@gcbo.org.

Coastal prairies are the primary winter destination for two dozen species of migratory grassland birds and losses of this habitat have proven detrimental to their populations. As a result, some of Partners in Flight's (PIF) highest priority birds are grassland species. To examine grassland bird use of coastal prairies, Project Prairie Birds was initiated in 1998. Avian surveys were conducted at 34 sites, each with multiple transects for a minimum of two years by all-volunteer three-person crews identifying all species flushed from vegetation. Seasonal vegetation surveys measured five variables using five one square-meter sample areas. We also measured vertical thickness using a density board. We selected nine sites with three or more years of survey data for analysis. Thirty-nine species were detected of which nearly 50% have PIF combined species assessment scores of 10 or above. In addition, 24% of the individuals were Le Conte's

Sparrows which are a PIF Tier II priority species. A multiple regression between abundance and vegetative data for these two species showed a weak but significant correlation between Sedge Wren and the 0.5m vertical thickness parameter (R^2=0.1544, p<0.0001) but no significant relationship for Le Conte's Sparrow. This is likely due to high variances in the data as over-wintering location choice for these species is a function of climatic variability. Further analyses of these data are ongoing.

Las pradera costera representa el hábitat invernal primario para como dos docenas de aves migratorias que habitan pastizales. Poblaciónes de dichas especies de aves han sido en disminución por la pérdida de hábitat. El resultado de eso es que algunas de las especies de alta prioridad en la evaluación del peligro de extinción de Compañeros en Vuelo (PIF). Para evaluar el uso de praderas costeras por aves que habitan pastizales se inició El Proyecto "Aves Praderas" en 1998. Monitoreo de aves se realizó en 34 sitios. Se monitorearon transectos multiples en cado uno de los sitios durante de un mínimo de dos años. Eso realizaron un equipo de tres observadores voluntarios. Identificaron todas las aves espantados y causados tomar vuelo. Se realizaron inventorios de la vegetación por temporada en cinco parches de un metro cuadrado según cinco variables en cada transecto. Tambien medimos densidad vertical usando una "tabla de densidad". Escogimos nueve sitios con más que tres años de datos colectados para analizar. Se encontraron 39 especias de las cuales casi 50% son evaluados con grados de 10 o mas en el sistema de PIF. Además, 24% de los individuales eran *Ammodramus leconteii* las cual es una especie del Nivel II en el sistema PIF de prioriedad. Mostró una correlación débil entre el tamanyo de población de *Cistothorus platensis* y el parámetro del 0.5 m gruesidad vertical de la estructura vegetal una prueba de regresión multiple (R^2 = 0.1544, p <0.0001). Al contrario no mostró niguna relación significante para *Ammodramus leconteii*. Es probable que eso sea debido a la variabilidad del clima.

Heinen, J. R.; O'Connell*, T. J.

Influence of Easstern Redcedar on Breeding Warblers in Crosstimbers Forest. Jason R. Heinen, Oklahoma State University, Stillwater, OK; O'Connell, T.J., Oklahoma State University, Stillwater, OK. jrhreaxis@yahoo.com.

Several species of North American wood-warblers with population centers in the eastern U.S. reach the southwestern limit of their breeding range in Oklahoma crosstimbers forest patches. Historically, the crosstimbers was dominated by post oak (*Quercus stellata*) and blackjack oak (*Q. marilandica*), but increasingly, these patches are influenced by eastern redcedar (*Juniperus virginiana*) encroachment. We investigated the influence of eastern redcedar on songbird community metrics and breeding density of three focal species of Neotropical migrant warblers: Kentucky Warbler (*Oporornis formosus*), Black-and-white Warbler (*Mniotilta varia*), and Louisiana Waterthrush (*Seiurus motacilla*). During May and June of 2007, we surveyed eight crosstimbers forest patches in Payne Co., OK. The patches represented a gradient of condition from low to high prevalence of redcedar in oak forest patches. We used repeated samples of a modified spot-mapping approach for focal species, and fixed-radius point counts to reflect the larger breeding bird assemblage. We also searched each patch for nests and fledgling groups to gauge reproductive success. Preliminary results suggest that overall songbird species richness and diversity, and breeding density of focal warblers, were negatively correlated with the abundance of eastern redcedar in crosstimbers forest patches. Breeding Black-and-white and Kentucky warblers were largely successful in 2007, but repeated nest flooding from heavy rains led to total nest failure of Louisiana Waterthrushes.

La Influencia del Arbol Conífero *Juniperus virginiana* en las Reinitas (Parulidae) Nidificantes de los Bosques de Transición del Crosstimbers.

Varias especies de chipes (Parulidae) que nidifican en Norteamérica y que tienen poblaciones centradas en el este de E.E.U.U. alcanzan el límite suroccidental de su zona de distribución veraniega en los bosques de transición Crosstimbers del estado de Oklahoma. Antiguamente, la zona del Crosstimbers era dominada por las especies de roble *Quercus stellata* y *Q. marilandica*. Sin embargo, *J. virginiana* incrementa cada vez más su rango de distribución en estos bosques. Investigamos la influencia de *J. virginiana* en las características de comunidades de paserinos y en la densidad de nidificación de tres especies de chipes migrantes neotropicales: el Chipe de Kentucky (*Oporornis formosus*), el Chipe Trepador (*Mniotilta varia*) y el Chipe-suelero Arroyero (*Seiurus motacilla*). Durantes los meses de mayo y junio del 2007, examinamos ocho areas boscosas en la zona de Crosstimbers en el ayuntamiento de Payne en Oklahoma. Las áreas representan una zona de transición de baja a alta presencia de *J. virginiana* en el subdosel en zonas cubiertas de roble. Utilizamos ejemplos repetidos del Modified Spot-Mapping Approach para las especies objetivas y conteos de punto con radio fijo para hacer una representación completa de la comunidad de aves nidificantes. También investigamos cada área para encontrar nidos y grupos de aves recien plumadas para medir el éxito de reproducción. Los resultados preliminarios sugieren que la diversidad y riqueza total en paserinos y la densidad de nidificación de los chipes objetivos tienen una correlación negativa con la abundancia de *J. virginiana* en las zonas boscosas del Crosstimbers. Los Chipes de Kentucky y Trepadores que nidificaron en el 2007 tenían bastante éxito, pero por las fuertes lluvias en 2007 la inundación repetida de los nidos significó para los Chipes-suelero Arroyeros que no llegaron a producir ningún nido en aquel año.

Hennessey°, B.

Assessing Threatened Species in South America. Bennett Hennessey, Asociacion Armonia-BirdLife, Santa Cruz de la Sierra, Bolivia. abhennessey@armonia-bo.org

Extinction rates are at a historical peak. Though there are excellent landscape, habitat, and protected area conservation programs many individual species are falling through the cracks of well intentioned conservation actions. Given this priority BirdLife International has been working with the IUCN to create the Bird Red List, placing threatened species in categories of priority from Critically Endangered, Endangered, Vulnerable and Near Threatened. Along with this threatened level of distinction, BirdLife has created the Preventing Extinctions Program in order to concentrate effort on the most threatened species. The development of the Preventing Extinctions program in South America has been assessing the conservation priority of the most threatened species- 47 Critically Endangered birds that all deserve priority attention. This work has resulted in a top ten list of priority South American bird species that need attention. The priority assessment weighs biological information and threat level, but must also way factors such as species charisma, chance of conservation success, dollar figure of present support, capabilities of local organization, political unrest, and other factors that should not play a part in conservation, but yet cannot be ignored.

Las tasas de extinción han alcanzado un nivel histórico. Aunque existen programas de conservación de paisajes, hábi-

tats y áreas protegidas muchas especies individuales están cayendo en la grieta de acciones de conservación bien intencionadas. Dada esta prioridad BirdLife International ha estado trabajando con la IUCN para crear la Lista Roja de Aves, colocando especies amenazadas en categorías de prioridad, desde en Peligro Crítico, en Peligro, Vulnerables y Casi Amenazadas. Junto con esta distinción de nivel de amenaza, BirdLife ha creado el Programa de Prevención de Extinciones con el fin de concentrar esfuerzos en las especies más amenazadas. El desarrollo del programa de Prevención de Extinciones en Sudamérica ha estado evaluando la prioridad de conservación de las especies más amenazadas – 47 aves en Peligro Crítico, de las cuales todas merecen atención prioritaria. Este trabajo ha dado lugar a un "ranking de las diez" especies de aves en Sudamérica que necesitan atención. La evaluación de prioridad toma en cuenta información biológica y nivel de amenaza, pero también, factores tales como carisma de la especie, oportunidad de éxito de conservación, la figura del dólar en el apoyo presente, capacidades de organización local, inquietud política y otros factores que no deberían tomar parte en conservación pero que aún no pueden ser ignorados.

Hennessey°, B.

Where a Park Won't Do: IBA Site Conservation in South America through Local Communities. Bennett Hennessey, Asociacion Armonia-BirdLife, Santa Cruz de la Sierra, Bolivia. abhennessey@armonia-bo.org.

Community-based conservation will be explored from the theoretical to the practical on-ground experiences in South America. Examples of IBA charismatic flagship species community-based tourism with the Red-fronted Macaw *Ara rubrogenis* and the Wattled Curassow *Crax globulosa* in Bolivia will be presented. But I will also present community-based conservation experiences where ecotourism is not an option. Examples of work and ideas will be demonstrated from the High Andean *Polylepis* forests IBA in Bolivia, conservation actions in the Boa Nova IBA in Bahia, Brazil, and work with the White-winged guan *Penelope albipennis* in Peru. The sustainability of these projects and actions will be discussed in each example.

Heredia Morales°, A. C.; Meave, J. A.; Rodriguez, V.

Avifauna Diversity During Secondary Succession of a Tropical Dry Forest at Nizanda, Oaxaca, Mexico. Abril Heredia, UNAM, México; Meave, J., UNAM, México; Rodríguez, V., ICAAN/NABCI – CONABIO, México. copalita@gmail.com

Features of habitat structure, such as vegetation, are important for habitat selection in birds. Changes in vegetation structure and composition during successional development may influence the composition of the associated avifauna. We hypothesized that composition of the avifauna would be different along the successional process. The study took place in a seasonally dry tropical forest at Nizanda, Isthmus of Tehuantepec, (Oaxaca, Mexico). Tropical dry forest is one of the most threatened habitats in Mexico, due to changes in land use. We compared avifaunal composition and the activities displayed by birds between fallows belonging to three successional development categories; young (3-7 yr), intermediate (10-25 yr), and old (35-43 yr) fallows. Censuses were conducted bimonthly throughout the year. We recorded species richness, relative abundance (sighting frequency), and habitat use. Over 47 resident and migratory bird species, including two narrow endemics (*Aimophila sumichrasti* and *Passerina rositae*) were recorded. Species richness was similar in intermediate and old stages (33 species, each), while the young stage had the lower (21). Relative abundance also increased with fallow age, particularly for the White-throated Magpie-Jay (*Calocitta formosa*) and the Golden-fronted Woodpecker (*Melanerpes aurifrons*). The Stripe-headed Sparrow (*Aimophila ruficauda*) was the only species exclusively observed in young fallows. Perching activities prevailed in young fallows, whereas foraging and nesting were more frequent in older fallows.

Herkert°, J. R.

The Influence of the Conservation Reserve Program on Henslow's Sparrow Populations within the United States. James R. Herkert, The Nature Conservancy, Peoria, IL. Jherkert@tnc.org.

The Henslow's sparrow (*Ammodramus henslowii*) is a species of high conservation concern due to long-term population declines, a small global population, and a narrow geographic distribution. Habitat loss is considered to be the most likely cause of Henslow's sparrow declines and therefore the recent establishment of large areas of undisturbed grasslands through the Conservation Reserve Program (CRP) is considered to have had the potential to benefit Henslow's sparrow populations. I conducted two analyses to evaluate the impact that CRP is having on Henslow's sparrow populations within Illinois and more broadly across their U.S. breeding range. For Illinois, I used data from the state's Spring Bird Count to estimate recent county-level population trends and examine the association that changes in county land-use, especially the establishment of CRP lands, have had on local Henslow's sparrow population trends. The Illinois analysis shows that Henslow's sparrow populations have increased substantially over the last ten years and that the population increase strongly coincides with the establishment of more than 400,000 ha of grasslands within the state by the Conservation Reserve Program. For the national level analysis, I used data from the North American Breeding Bird Survey to assess the impact that CRP has had on populations throughout the United States breeding range of the species. The national analysis shows that route-level Henslow's sparrow population trends are correlated with local CRP enrollment across the entire breeding range of the species, with populations increasing most in areas with relatively high local CRP enrollment. These two analyses suggest that CRP is playing a significant role in reversing long-term Henslow's sparrow population declines throughout their U.S. breeding range.

Hernandez-Divers°, Sonia M.; Carroll, R.; Sanchez, S.; Jimenez, C.; Cooper, R.; Rohani, P.; Fischer, J.; Hernandez-Divers, S. J.

Are Shade-Grown Coffee Plantations Disease Sinks for Wild Birds in Costa Rica? Sonia M. Hernandez-Divers*, UG, Athens, GA; Carroll, R., Odum, UG, Athens, GA; Sanchez, S., UG, Athens, GA; Jimenez, C., Universidad Nacional, Heredia, Costa Rica; Cooper, R., UG, Athens, GA; Rohani, P., UG, Athens, GA; Fischer, J., UG, Athens, GA; Hernandez-Divers, S.J., UG, Athens, GA. shernz@aol.com

Much attention has been given to the positive effects on biodiversity and abundance of avian species in cultivated environments. In particular, shade-grown coffee has been promoted as a sustainable agricultural alternative that increases habitat availability for a variety of forest birds in tropical countries, such as Costa Rica. Although these plantations do provide structural diversity, nesting sites and food subsidies for forest birds, they

can also be potential disease "sinks". In this study, we described the biodiversity, abundance and the pathogen prevalence and diversity associated with shade-grown coffee plantations. Two mechanisms were suggested as promoting disease transmission: artificial aggregation of avian species and contact with domestic, free-roaming chickens. A complete health survey of free-roaming chickens in the region was completed in 2005. The pathogen prevalence and diversity of birds inhabiting three shade-grown coffee plantations was compared to those inhabiting three nearby forest fragments. Utilizing mist nets, birds were captured and assessed by utilizing measurements for body condition, parasite load (ecto-, endoparasites), directly transmitted diseases (Paramyxovirus and *Mycoplasma* sp.) vector-borne diseases (*Hemoproteus* sp.) and fecal bacterial flora. To our knowledge, this study is the first attempt to determine the ecosystem integrity, with regards to avian diseases, of shade-grown coffee plantations. It appears that these plantations pose little to no risk to understory birds with small home ranges. The results of this disease surveillance suggests that there is little difference in the health, pathogen prevalence or diversity of wild birds inhabiting both shade-grown coffee and forest fragments in San Luis, Costa Rica.

¿Son las Plantaciones del Café de Sombra Trampas de Enfermedades para las Aves en Costa Rica?

Se le ha prestado mucha atención a los efectos positivos sobre biodiversidad y abundancia de aves en ambientes cultivados. En particular, café de sombra, se ha promovido como una alternativa agrícola sostenible que aumenta la disponibilidad del habitat para una variedad de pájaros del bosque en países tropicales, tales como Costa Rica. Aunque estas plantaciones proporcionan diversidad estructural, sitios para anidamiento y los subsidios del alimento para aves, pueden también ser "trampas" con el potencial de aumentar la transmisión de enfermedades. En este estudio, describimos la biodiversidad, abundancia y el predominio y la diversidad de patógenos asociados con las plantaciones de café de sombra. Dos mecanismos fueron sugeridos como responsables por el aumento de transmisión de enfermedades: agregación artificial de aves y contacto con pollos domésticos. Una encuesta sobre la salud de pollos en la región fue terminada en 2005. El predominio y la diversidad de los patógenos en aves que habitaban tres plantaciones de café de sombra fueron comparados a ésos que habitaban tres fragmentos de bosque. Utilizando redes, los pájaros fueron capturados y su salud asesorada utilizando medidas de condición corporal, carga del parásito (ecto -, endoparasitos), predominio de enfermedades transmitidas directamente (Paramyxovirus y *Micoplasma spp*.) enfermedades portadas por vectores (*Hemoproteus spp*.) y flora bacteriana fecal. A nuestro conocimiento, este estudio es la primera tentativa de determinar la integridad del ecosistema, en lo que respecta a enfermedades aviares, de las plantaciones de café de sombra. Aparentemente estas plantaciones presentan un riesgo mínimo a las aves de sotobosque. Los resultados de este estudio de enfermedades sugiere que hay poca diferencia en la salud, el predominio o la diversidad de patógeno de las aves que habitan café de sombra y fragmentos de bosque en San Luis, Costa Rica.

Herrera, E.; King°, D.; Hernandez, S.; Lively, C.; Mehlman, D.; Mendoza, S.; Rappole, J.; Roth, D.

The Status of Wintering Golden-cheeked Warblers in Nicaragua. Edgar Herrera, TNC, Managua, Nicaragua; King, D., USFS, Amherst, MA; Hernandez, S., TNC, Managua, Nicaragua; Lively, C., USFS, Washington, D.C.; Mehlman, D., TNC, Albuquerque, NM; Mendoza, S., TNC Tegucigalpa, Honduras; Rappole, J., Smithsonian Institute, Washington, D. C.; Roth, D., USFS, Washington, D.C. dking@fs.fed.us.

The Golden-cheeked Warbler (*Dendroica chrysoparia*) is an endangered Neotropical migrant that winters from Chiapas, Mexico to northwestern Nicaragua. Although previous studies delineated the winter range of this species in Guatemala and Honduras and established that wintering Golden-cheeked Warblers are closely associated with montane pine-oak forest (Rappole et al. 1999, 2000, 2003), the current status of the species in Nicaragua is poorly understood. We surveyed potentially suitable habitat in northwestern Nicaragua to determine the extent of populations and habitat in this portion of their range. Twenty-two Golden-cheeked Warblers were located in Nicaragua from late November 2006 to February 2007. The majority of birds were located in montane pine-oak habitats above 1000 m in elevation, which is consistent with findings on habitat use from the core of their range (Rappole et al. 1999, 2000, 2003). Our observation of Golden-cheeked Warblers in Nicaragua is notable in that to our knowledge the last published reports of this species in Nicaragua outside of the breeding season were of two individuals collected in September, 1891 (Pulich 1976, Rappole et al. 2000). Suitable habitat in Nicaragua appears to consist of a narrow band of habitat between 1300-1500 m in elevation along the Honduran border.

Herrera, M.; Hennessey°, B.

Quantifying the Illegal Parrot Trade in Bolivia. Mauricio Herrera, Asociacion Armonia-BirdLife, Santa Cruz de la Sierra, Bolivia; Hennessey, B., Asociacion Armonia-BirdLife, Bolivia. abhennessey@armonia-bo.org.

In an attempt to better understand the depth of the illegal bird trade in Bolivia and its impact on threatened and endemic bird species the Armonia/Loro Parque Fundacion Blue-throated Macaw *Ara glaucogularis* conservation program and the Armonia Red-fronted Macaw *Ara rubrogenis* conservation program conducted a quantitative study of the parrot trade. We monitored the trade in Los Pozos pet market from August 2004 to July 2005. As indicated in Bolivian law, all unauthorized trade in wild animal species is illegal, especially species considered threatened by IUCN. During this period, we recorded 7,279 individuals of 31 parrot species, including four threatened species, two of which were being transported from Brazil through Bolivia to markets in Peru. The most frequently sold species was the Blue-fronted Parrot *Amazona aestiva* with 1,468 individuals observed during our study, the majority of which (94%) were believed to have been captured in the wild. Most of the purchased birds remain within Bolivia, while the more expensive, threatened species frequently head to Peru; some individuals may even reach Europe. This data will be presented, including the most recent information on the continual pet trade and our conservation actions to decrease the trade in Bolivia.

Tratando de mejorar el conocimiento del trafico ilegal de aves en Bolivia y su impacto con las especies de aves amenazadas y endémicas, el programa de conservación de la paraba barba azul *Ara glaucogularis* de Armonia/ Loro Parque Fundación y el programa de la conservación de la paraba frente roja *Ara rubrogenis* condujeron un estudio cuantitativo del trafico de loros. Monitoreamos el comercio ilegal de aves en el mercado de mascotas de Los Pozos, desde agosto de 2004 a julio de 2005. De acuerdo a lo que establece la ley boliviana, todo comercio no autorizado de animales salvajes es ilegal, especialmente de especies consideradas Amenazadas por la IUCN. Durante este periodo, grabamos 7.279 individuos de 31 especies

de loros, incluyendo 4 especies amenazadas, de las cuales dos fueron transportadas desde Brasil a través de Bolivia hacia mercados en Perú. La especie más frecuentemente vendida fue el Loro Frente Azul *Amazona aestiva*, con 1.468 individuos observados durante nuestro estudio, de los cuales creemos que un 94% ha sido capturado en su hábitat natural. La mayoría de la compra de aves permanece dentro de Bolivia, mientras que las más caras especies amenazadas, se dirigen a Perú; algunos individuos pueden incluso alcanzar Europa. Estos datos serian presentados incluyendo la información mas reciente sobre el tráfico de loros y nuestras acciones de conservación para bajar el nivel de tráfico en Bolivia.

Herrera°, N.; Pineda, L.; Portillo, I. R.; García, G.

Birds of Complex of Lake Güija, El Salvador and Guatemala. Néstor Herrera, Programa de Ciencias para la Conservación, SalvaNATURA, San Salvador, El Salvador; Pineda, L., Fundación para la protección del Arrecife Los Cóbanos. FUNDARRECIFE; Portillo, I. R., Ministerio de Medio Ambiente y Recursos Naturales, El Salvador; García, G., Universidad de El Salvador. nherrera@salvanatura.org;

We presented information of the composition of birds of the Complex of Güija, an area of about 7,000 ha shared by El Salvador and Guatemala, which include wetlands and tropical dry forest. In the last eight years we have monitored aquatic birds, pursued nesting colonies and count of terrestrial birds. This has allowed generations of 270 species (198 terrestrial species and 72 aquatic species), 84 of them are visitors in the winter and 145 are permanent residents. In the lake of Güija apparently the migration of aquatic birds happens more early in the year, mainly ducks, in comparison with other wetlands of El Salvador, which can be due to its geographic position.

This wetland is important for the conservation of aquatic birds for El Salvador and Guatemala, by the high concentrations of Blue-winged Teal (*Anas discors*), American Coot (*Fulica americana*) and Lesser Scaup (*Aythya affinis*) during the months between January and March every year. In the nesting colony a nest staggered, only five species have been registered and more than 2,000 reproductive pairs. In September 2007 we found the first nesting colony of Snail Kite (*Rosthramus sociabilis*) for El Salvador and Guatemala. The state of fragmentation and alteration of the dry forest is at risk of extinction of several species that live in their limits, among them Rufous-necked Wood-Rail (*Aramides axillaris*) and Northern Bentbill (*Oncostoma cinereogulare*).

Hill°, G. E.; Mennill, D. J.; Rolek, B. R.; Ligon, R.: Hill, III, J R.; Swiston, K. A.; Odom, K.; Hicks, T. L.

Further Evidence Suggesting that Ivory-billed Woodpeckers (*Campephilus principalis*) Exist in Florida. Geoffrey E. Hill, Auburn Univ., Auburn, AL; Mennill, M.J., Univ. Windsor, Windsor, ON; Rolek, B.R., Auburn Univ., AL; Ligon, R., Auburn Univ., AL; Hill III, J.R., Auburn Univ., AL; Swiston, K.A., Univ. Windsor,Windsor, ON; Odom, K., Univ. Windsor, Windsor, ON; Hicks, T.L., Western State College, Gunnison, CO. ghill@auburn.edu

From November 2006 through May 2007 we searched for Ivory-billed Woodpeckers along the Choctawhatchee River in Northwest Florida. A team of 13 searchers lived in two camps about 15 km apart and intensively searched about 15 square miles of forested wetlands. Four additional biologists deployed remote listening stations and set and watched the images from 24 remote cameras. This search effort yielded seven sightings of Ivory-billed Woodpeckers. Our bioacoustic search -- the largest bioacoustic search ever conducted -- captured numerous recordings of putative double knocks and putative kent calls. These recordings and observations are linked in time and space. We will also present a video taken in May 2006 of a bird that has plumage features consistent with Ivory-billed Woodpecker.

Pruebas Adicionales que Sugieren la Existencia del Picamaderos Picomarfil *(Campephilusprincipalis*) en Florida.

Desde noviembre de 2006 hasta mayo de 2007 buscamos el picamaderos picomarfil a lo largo del río Choctawhatchee en el noroeste de Florida. Un equipo de 13 investigadores vivió en dos campamentos aproximadamente a 15 km. de distancia entre sí y buscó exhaustivamente alrededor de 15 millas cuadradas (39 km2) de pantanos boscosos. Cuatro biólogos adicionales desplegaron estaciones de escucha remotas y establecieron y observaron las imágenes de 24 cámaras remotas. Esta tarea de búsqueda obtuvo siete avistamientos de picamaderos picomarfil. Nuestra búsqueda bioacústica —la búsqueda bioacústica más grande jamás realizada—capturó varias grabaciones de supuestos golpeteos dobles y cantos kent. Estas grabaciones y observaciones se relacionan con el tiempo y espacio. También presentaremos un video filmado en mayo de 2006 de un pájaro cuyo plumaje concuerda con el del picamaderos picomarfil.

Hillº, R.

Using Species Management and Outreach to Change Community Perceptions. Randy Hill, USFWS, Othello, WA. randy_hill@fws.gov.

Sandhill cranes are an attractive visitor every spring to the irrigated Columbia Basin of Eastern Washington USA. A festival was first established in Othello in 1998 as outreach for Columbia NWR and to support local businesses, but created different perceptions based on urban vs. rural viewpoints. Using the common ground of irrigated agriculture and wildlife management in outreach, the rural community acceptance and support has increased markedly as attendance increases and ecotourism gains momentum. With most attendees from the urban Puget Sound area, we have geared the festival to provide lectures and field trips that accentuate the benefits of agriculture where common ground exists to expose the "blue state" = green advocates to a different viewpoint, while gearing most of the lectures and field trip opportunities toward wildlife conservation, recycling, and educating our own local "red state" community of the potential for "green dollars" and a focal point of community pride. Cranes on display helped establish Othello as the southern base for a National Scenic Byway, led to creation of a birding trail that won a national award for interpretation, and is now having an interpretive master plan developed for the entire route. Managing refuge cropland for crane viewing also has increased use by priority species such as pintails headed north to nest. With increased visitors we have expanded from a single day to include field trips over four weekends with viewing that targets other priority species such as curlews and burrowing owls and a vanishing shrub-steppe community.

Hinnebusch*, D. M.; Buehler, D. A.; Giocomo, J. J.

Ecology and Management of Open-habitat Birds Wintering in Central and Eastern Tennessee. * Daniel M. Hinnebusch, UT, Knoxville, TN; Buehler, D.A., UT, Knoxville, TN; Giocomo, J.J., UT, Knoxville, TN. dmhinnebusch@utk.edu.

Research focused on eastern North American grassland birds has primarily dealt with the breeding season, and research on these birds during the winter has been concentrated in the coastal Bird Conservation Regions. Little is known about the ecology and management of grassland and shrubland birds that winter in the mid-South (Tennessee-Kentucky). We investigated the ecology of wintering birds in this region during winters of 2005-06 and 2006-07 using several methods, including rope dragging surveys, mist netting, and transect sampling. Transect surveys on three types of open habitat showed greater densities of Song Sparrows and Swamp Sparrows on native grasslands than on agricultural fields or burned grasslands. Savannah Sparrow densities, in contrast, were greater on agricultural and burned grasslands than on native grasslands. Field Sparrow densities did not differ by field type ($P > 0.05$). Within fields, we used mist nets to compare the birds using open fields and brushy edges and hedgerows. Based on our observations, we develop management strategies for grassland and shrubland birds in the mid-South and, in particular, the eastern Central Hardwoods Bird Conservation Region.

Hitch*, A. T.; Grand, J. B.; Allen, S. L.

Are Avian Habitat Relationships Estimated from Remotely Sensed Data Applicable on a Regional Scale? Alan Hitch, Auburn University, Auburn, AL; Grand, J.B., USGS Cooperative Research Unit, Auburn University, Auburn, AL; Allen, S.L., Auburn University, Auburn AL. hitchat@auburn.edu

Habitat relationship models are important components of decision support processes. These models are used to infer relationships across broad spatial scales and in other geographical locations with similar habitats. One of the main assumptions of these models is that habitat relationships modeled in one area can be used to infer relationships in areas of different geographic locations, although this assumption is rarely tested. We conducted point counts on a 138km^2 area in the Cumberland Plateau Region of Alabama. We used occupancy analysis, which incorporated detection probabilities, to develop habitat relationship models based on both site-level and mapped characteristics such as land cover. We developed competing models based on hypothesized relationships to determine whether accurate maps of the probability of occurrence could be developed using remotely sensed habitat characteristics. We tested the assumption of inference to other areas by examining fit of the same models on a 9.4km^2 area with similar habitats. These results are an important contribution to our ability to use habitat relationship models for regional conservation planning.

Hobson, K. A.; Leppold, A.; Mulvihill, R. S.; Greenberg°, R.

Blackbird Flyways from Boreal to Bottomlands: What Banding and Isotope Data Tell Us. Keith A. Hobson, Environment Canada, Canada; Leppold, A., Powdermill Avian Research Center, Rector, PA; Mulvihill, R. S., PARS, Rector, PA; Greenberg, R., Smithsonian Migratory Bird Center, Washington, D.C. Keith.Hobson@ec.gc.ca.

The effective conservation of any migratory species requires knowledge of connectivity between breeding and wintering grounds. Here we describe the results of analyses using two techniques that hold promise for investigating migratory connectivity and migration routes for the rapidly declining Rusty Blackbird (*Euphagus carolinus*). First, stable-hydrogen isotope analyses (δD) of feathers of wintering birds in Mississippi and South Carolina were compared to those from museum specimens taken prior to the major population decline of the species in the 1960's. Second, we used GIS to summarize Rusty Blackbird migration banding data from the mid-latitudes of eastern North America over a 15-year period. Isotope analyses also indicate a migratory divide between an eastern boreal population wintering along the Atlantic Coast and the remaining western populations migrating to the Mississippi Valley. The isotope data suggest a recent shift in the breeding origin of birds wintering along the Atlantic Coast. Banding data results suggest a similar separation between inland and coastal sites. The largest numbers of birds at migration banding sites are from the north and west and are traveling south and east of their origins across the Great Lakes region and SSW along the ridges of the mid-Appalachians. Rusty Blackbirds from the eastern boreal regions follow a more easterly route away from the mountains. Both techniques hold promise for further delineating connectivity in this species, particularly if a network of migration banding sites that use a standardized banding and surveying protocols appropriate for the species.

Hohman°, W. L.

Opportunities and Challenges to Full Consideration of Birds on Private Working Lands. William L. Hohman, NRCS, Fort Worth, TX. william.hohman@ftw.usda.gov.

Private lands are critically important to birds. Agriculture is by far the dominant user of these lands with about 50% of the U.S. or 900 million acres managed for agricultural purposes. Decisions made by America's
farmers and ranchers, therefore, directly affect the land's plant life, soil, water, and wildlife. U.S. agricultural programs, policies, and technical assistance have had a large influence on the options available to producers in the management of their land. Consideration of birds on private lands is potentially constrained by factors including (1) agency reliance on landowner-derived objectives; (2) reluctance to recognize other stakeholder interests; (3) emphasis on recreationally important species, especially edge-associated species; (4) perception of wildlife as a commodity; (5) use of administrative/jurisdictional boundaries; (6) inappropriate temporal and spatial scales for conservation planning; (7) inadequate and inconsistent application of assessment tools; and (8) interagency competition. External barriers include: (1) landowner mistrust of environmental groups; (2) slow recognition of the importance of private lands among bird conservation interests; (3) lack of consensus regarding bird conservation goals; (4) overly complex objectives; (5) failure to recognize the economic realities operating on working lands; (6) ignorance of USDA "culture," organization, policy, and operating procedures; and (7) inadequate understanding of relationships between conservation goals and habitat management/restoration actions. Advancement of bird conservation on private lands will require effective partnerships between agricultural and conservation interests.

Holmes°, A. L.; King, A. V.

Are There Demographic Consequences of Natural Gas Development to Populations of Sagebrush Obligate Songbirds in the Wyoming Basin? Aaron L. Holmes*, Oregon State University, Corvallis, OR; King, A.K., Conservation Science, Petaluma, CA. aholmes@prbo.org

We studied the reproductive success of Sage Sparrow (*Amphispiza belli*), Brewer's Sparrow (*Spizella breweri*), and Sage Thrasher (*Oreoscoptus montanus*) at 4 locations within the Jonah natural gas development and at 4 undeveloped sites in Sublette County, Wyoming, from 2002 through 2005. In addition, for the sparrow species we estimated apparent survival from

surveys of color banded birds conducted from 2003 through 2006. Nest survival rates varied among locations and among years for all 3 species. Within season variation was driven largely by summer snow events which increased failure rates up to an order of magnitude over background levels. Only Sage Sparrow showed a tendency for lower nest survival in the gas development relative to undeveloped areas. Preliminary survival estimates suggest annual variation is related most strongly to summer weather conditions with lower survival related to extreme summer weather conditions. There is also limited support for an effect of gas development on survival for Brewer's Sparrow. Continued monitoring will assess potential impacts of increased well density as expansion and infill of the Jonah Field progresses.

Homayoun*, T. Z.; Blair, R. B.

Citizen-Science Monitoring of Landbirds in the Mississippi River Twin Cities Important Bird Area. Tania Z. Homayoun*, Conservation Biology Graduate Program, University of Minnesota, Saint Paul, MN; Blair, R.B., University of Minnesota, Saint Paul, MN. homay001@umn.edu

As urbanization alters undeveloped landscapes, conservation of remnant native habitats, plants, and animals is increasingly important. Monitoring these protected areas is a key component of effective land management, and citizen science has emerged as a powerful tool in monitoring, especially in developed areas. The Mississippi River Twin Cities Important Bird Area (IBA) covers nearly 37,000 acres of bird habitat along the Mississippi River between Minneapolis and Hastings. While much is known about this area's value to waterbirds, less is known about how landbirds, especially migrating songbirds, use this habitat. To address this issue, Audubon Minnesota and other stakeholders supported the development of a landbird monitoring program using citizen scientist volunteer birders to perform point count surveys during both migration and breeding seasons. During the spring and summer 2007 field seasons, 13 citizen scientists working on 7 sites within the IBA recorded a total of 126 landbird species. As this program develops, it has great potential to provide data on bird assemblages that may aid in land management, as well as provide volunteers and the larger community with the opportunity for land stewardship and engagement with nature.

Parce que l'urbanisation modifie le paysage naturel, la conservation des habitats non-développés, les plantes et les animaux est de plus en plus importante. La surveillance de ces zones protégées est essentielle pour la gestion de ces terrains, et des bénévoles ornithologues sont devenue un outil puissant de gérance surtout dans les zones urbaines. Le Mississippi River Twin Cities Important Bird Area (IBA) couvre près de 37000 hectares d'habitat pour oiseaux le long du fleuve du Mississippi entre Minneapolis et Hastings. Bien qu'on sache beaucoup a propos des oiseaux aquatiques, moins d'informations est connue sur les oiseaux terrestres, surtout les oiseaux chanteurs migrateurs qui utilisent cet habitat. Pour traiter cette question, Audubon Minnesota et les autres parties prenantes ont choisi d'élaborer un programme de surveillance des oiseaux terrestres en utilisant des bénévoles ornithologues pour effectuer des enquêtes a différent points d'observation au cours de deux saisons de reproduction et de migration. Durant le printemps et l'été 2007, 13 bénévoles ornithologues ont travaillé sur 7 sites de l'IBA. Ils ont enregistré un total de 126 espèces d'oiseaux terrestres. Ce programme a le potentiel de fournir des données sur des assemblages d'oiseaux qui est susceptible d'aider à la gestion de l'IBA, ainsi que de permettre aux bénévoles et à la communauté de participer dans la protection de ce terrain et d'engager avec la nature.

Hoover°, J. P.

Prothonotary Warblers as Indicators of Hydrological Conditions in Forested Floodplains. Jeff Hoover, INHS, Champaign, IL. jhoover@inhs.uiuc.edu.

Channelization of rivers and streams threatens bottomland forest bird communities because it can lead to the formation of lateral gullies that connect streams to adjacent forested wetlands and drain them. Each spring these forested wetlands may be attractive breeding habitat for birds, but the unnaturally rapid draining of the wetlands may expose birds to high rates of nest predation. I monitored the nesting success of Prothonotary Warblers, a migratory songbird that breeds preferentially in forested wetlands, from 1994 to the present in the Cache River watershed in Illinois. Nest predation by raccoons was the primary factor limiting reproductive success of Prothonotary Warblers and rates of nest predation decreased with increased water depth beneath nests. Nests over relatively deep water (>40 cm) were particularly successful. Forested wetlands and swamps that have deep water in them for a long (1-3 month) duration during the warblers' breeding season (May-July) are critical to the nesting success and maintenance of healthy populations of Prothonotary Warblers. The Prothonotary Warbler study system provides the opportunity to document how natural processes (e.g., water control structures built by beavers) and human actions (e.g., filling in and plugging lateral gullies), which alter the hydrological conditions of forested wetlands, influence warbler populations. Documenting changes in warbler densities and reproductive success in response to conservation actions ultimately provides a means to measure the success of restoration activities in bottomland forest ecosystems.

Reinita Protonotaria como Indicador de Condiciones Hidrológicas en los Bosques de Áreas Boscosas Inundables.

La canalización de ríos y riachuelos amenaza a las comunidades de aves de los bosques de llanuras inundables debido a que puede conducir a la formación de quebradas laterales que conectan los riachuelos con los humedales boscosos adyacentes, drenándolos. Cada primavera los humedales boscosos pueden constituir un hábitat atractivo para la reproducción de las aves, pero el drenaje artificial y rápido de los mismos puede exponer a las aves a un alto grado de depredación de sus nidos. Desde 1994 hasta el presente, monitoreé el éxito de anidación de la Reinita Protonotaria, un paseriforme migratorio que anida preferentemente en los humedales boscosos en la cuenca del río Cache, en Illinois. La depredación de nidos por mapaches fue el principal factor que limitaba el éxito reproductivo de la Reinita Protonotaria mientras la tasa de depredación de nidos disminuyó con el incremento de la profundidad del agua debajo de los nidos. Los nidos sobre aguas relativamente profundas (>40 cm) fueron particularmente exitosos. Los humedales boscosos y pantanos que mantienen aguas profundas por un período largo (1-3 meses) durante la época reproductiva de las reinitas (mayo-julio) son críticos para el éxito de anidación y el mantenimiento de poblaciones saludables de la Reinita Protonotaria. El sistema de estudio de la Reinita Protonotaria brinda una oportunidad para documentar cómo los procesos naturales (ej., estructuras para el control del nivel de agua construidas por castores) y las acciones humanas (ej., inundado y represamiento en las quebradas laterales), que alteran las condiciones hidrológicas de los humedales boscosos, influyen sobre las poblaciones de la reinita. Documentar los cambios de las densidades de la reinita y su éxito reproductivo en respuesta a las acciones de

conservación proporciona finalmente un mecanismo para medir el éxito de las actividades de restauración en ecosistemas de bosques de llanuras inundables.

Howe°, Robert W.; Niemi, Gerald J.; Danz, N. P.

An Objective Index of Ecological Condition Using Breeding Bird Communities. Robert W. Howe, UWGB; Niemi, G.J., Danz, N.P., NRRI, UMD, Duluth, MN. hower@uwgb.edu.

We developed a new, conceptually explicit method for the identification of ecological condition using documented responses of breeding bird species to a gradient of human disturbance, ranging from 0 (maximally disturbed) to 10 (minimally disturbed). Our analysis was based on breeding bird species in 215 coastal wetland complexes across the U.S. portion of the Great Lakes. We identified 23 bird species that were most sensitive (positively or negatively) to the disturbance gradient. Species like Sandhill Crane and Sedge Wren showed strong negative relationships with human disturbance, while others like Common Grackle, American Robin, and European Starling, showed strong positive relationships with disturbance. The shapes of these responses were used to derive site-specific indices of ecological condition (IEC) based on maximum likelihood analysis of species' presence/absence. Sites dominated by species that respond negatively to human disturbance yielded high values of ecological condition (near 10), while sites dominated by species that respond positively to human disturbance yielded low values of ecological condition (near 0). Values of IEC were highly correlated with the original human disturbance gradient, but deviations revealed novel insights about local ecological conditions, including landscape integrity and the presence of invasive plant species like *Phragmites australis*. The IEC can be used to both identify and quantify sites in need of restoration, to diagnose potential causes of degraded conditions, and to identify species-specific actions for recovery of endangered, threatened, or species of concern.

Un Índice Objetivo de la Condición Ecológica Mediante el uso de Comunidades de Aves en Época Reproductiva.

Desarrollamos un nuevo método, conceptualmente explícito, para la identificación de la condición ecológica mediante la utilización de respuestas documentadas de especies de aves en estado reproductivo a un gradiente de perturbación humana, variando de 0 (perturbación máxima) a 10 (perturbación mínima). Nuestro análisis se basó en especies de aves en estado reproductivo, en 215 complejos de humedales costeros localizados en el área estadounidense de los Grandes Lagos. Identificamos 23 especies de aves que fueron las más sensibles (positiva o negativamente) a la gradiente de perturbación. Especies como *Grus canadensis* y *Cistothorus platensis* mostraron fuertes relaciones negativas con la perturbación humana, mientras otras, como *Quiscalus quiscula*, *Turdus migratorius* y *Sturnus vulgaris*, mostraron fuertes relaciones positivas con la alteración. La forma de estas respuestas fue utilizada para obtener índices de la condición ecológica (IEC) específicos para cada sitio, con base en un análisis de la máxima probabilidad de presencia/ausencia de las especies. Aquellos sitios dominados por especies que responden negativamente a la perturbación humana produjeron valores de condición ecológica altos (cerca de 10); por otro lado, sitios dominados por especies que responden positivamente a la perturbación humana produjeron valores de condición ecológica bajos (cerca de 0). Los valores del IEC se correlacionaron fuertemente con el gradiente original de alteración humana, sin embargo las desviaciones revelaron aspectos nuevos sobre las condiciones ecológicas locales, incluyendo integridad del paisaje y presencia de especies invasoras de plantas como *Phragmites australis.* El IEC puede ser usado para identificar y cuantificar sitios que requieran restauración, diagnosticar potenciales causas de condiciones degradadas e identificar acciones específicas para la recuperación de especies en peligro, amenazadas o de preocupación.

Huner°, J. V., Jeske, C. W., Musumeche, M. J.

The Importance of Working Wetlands as Avian Habitat in the Northern Gulf of Mexico Region. Jay V. Huner, UL Lafayette, Lafayette, LA; Jeske, C.W., USGS, Lafayette, LA; Musumeche, UL Lafayette, Lafayette, LA. jvh0660@louisiana.edu.

Resident, migrant, breeding and wintering waterbirds utilize the shallow water, moist soil habitat provided by the region's 160,000 hectares of working wetlands - rice, rice-crawfish, and crawfish impoundments. These include waterfowl, grebes, pelicans, cormorants, Anhingas, rails, coots, gallinules, shorebirds, gulls, and terns. One hundred species have been documented. Taxa include local, regional, continental and hemispherical populations. This habitat has replaced the 600,000 hectares of adjacent coastal wetlands lost since 1950. Numerous other bird species (180+) utilize riparian areas around these working wetland impoundments.

Impoundments (52,000 ha) used to culture crawfish, normally in some rotation with rice, provide significant small vertebrate and macroinvertebrate food resources for predaceous waterbirds. Rice is cultivated in warm months. Crawfish burrow in summer and are cultivated in the cool months in reflooded impoundments. Decomposing vegetation and seeds create the food web for crawfish. Wading bird populations have increased dramatically benefiting from a predictable food resource. Manipulation of water levels in the spring and again in the "fall" provides outstanding shorebird habitat. Rails and gallinules benefit from the breeding habitat provided by rice. Waterfowl benefit from rice and weed seeds and "loafing" areas and invertebrates prior to breeding.

Hunt°, P. D.; Fuller, S. G.; Kanter, J. J.

Adapting the PIF Species Assessment Approach to Revision of a State List of Threatened and Endangered Species. Pamela D. Hunt, NH Audubon, Concord, NH; Fuller, S. G., NH Fish and Game Department, Concord, NH; Kanter, J. J., NH Fish and Game Department, Concord, NH. phunt@nhaudubon.org.

The highest ranking strategy to come out of the NH Wildlife Action Plan was a revision of the state's official list of threatened and endangered wildlife. To evaluate species of greatest conservation need in a consistent manner, we developed an approach that combined scoring systems for both threats and regional responsibility. Threat scoring was based on a combination of subscores for scope, severity, likelihood, timing, and information, with each threat receiving an independent score. Responsibility was scored as the percent of a species' regional range that included NH, with the region defined as states from Maryland to Maine plus adjacent portions of Canada. Species were placed into a 4x4 matrix based on a combination of their highest threat score and their responsibility score, with species falling toward the "high risk, high responsibility" portion of the matrix recognized as being higher priorities for state listing. Other factors, such as the need for ongoing management to maintain populations, were also considered when prioritizing species for listing. This process was completed for all wildlife taxa, the results subjected to expert review, and the revised list is currently being moved through the State rule-making process.

Here we will present the results of this process as they apply to birds.

La Adaptación del Acercamiento de Evaluación de Especies de PIF a Revisión de una Lista Estatal de Especies Amenazadas y en Peligro.

La estrategia de clasificación más alta de salir del Plan de Acción de Fauna NH era una revisión de la lista oficial del estado de la fauna amenazada y en peligro. Evaluar las especies de la mayor conservación necesitan en una manera consecuente, desarrollamos un acercamiento que combinó sistemas de tanteo para ambas amenazas y responsabilidad regional. El tanteo de amenaza estaba basado en una combinación de subtanteos para alcance, severidad, probabilidad, cronometraje, e información, con cada amenaza que recibe un resultado independiente. La responsabilidad fue marcada como el por ciento de la variedad regional de unas especies que incluyó NH, con la región definida como estados de Maryland a Maine más porciones adyacentes de Canadá. Las especies fueron colocadas en un 4x4 matriz basada en una combinación de su resultado de amenaza más alto y su resultado de responsabilidad, con especies que cayéndose hacia "el riesgo alto, responsabilidad alta" la porción de la matriz reconocida como siendo prioridades más altas para el listado estatal. Otros factores, como la necesidad de la dirección en curso para mantener poblaciones, también fueron considerados cuando especies prioritizing para el listado. Este proceso fue completado para toda la fauna taxa, los resultados sujetados a la revisión experta, y la lista revisada está siendo movida actualmente por el proceso Estatal que hace regla. Aquí presentaremos los resultados de este proceso cuando ellos se aplican a aves.

Hunter°, W. C.

Evaluating Evidence of Persistence for Ivory-billed Woodpecker (*Campephilus principalis*) in the Southeastern United States from 1900 to the Present. William C. Hunter, USFWS, GA. chuck_hunter@fws.gov .

The persistence of Ivory-billed Woodpecker in the Twentieth Century is firmly documented with many specimens prior to 1920. In contrast, persistence after 1920 is documented by only two specimens and photos in 1924 (of a pair in east-central Florida) and a specimen along with many photos and other documentation (including video and auditory recordings) during the 1930s (of a small population in northeast Louisiana). Nevertheless, many reports prior to 1950 from across historical range are not questioned. In contrast, only a few of the reports of visual encounters (from prominent ornithologists) during the1950s are generally accepted, while other reports are not. All reports are considered inconclusive after 1960, despite including several photos, feathers, and auditory recordings. The public 2005 announcement of Ivory-billed Woodpecker persistence (of at least one male bird) in Arkansas energized searches for this species across the southeastern U.S. Results thus far include many additional potential visual and auditory encounters, but to date, none of these reports provide any better evidence than the original Arkansas reports of this species continued persistence. The lack of any indisputable evidence following the 2005 announcement, despite relatively extensive searching, raises many questions regarding search strategies for firmly documenting a very rare species, if present. Addressed here specifically is whether the current pattern differs from credible reports prior to the 1930s, between 1930 and 1960, and between 1960 and 2005. These patterns are discussed to generate alternative hypotheses regarding the detection and documentation of the Ivory-billed Woodpecker since 1940.

Evaluación de la Prueba de Existencia del Picamaderos Picomarfil *(Campephilus principalis)* en el Sur de los Estados Unidos desde el 1900 hasta el Presente.

La existencia del picamaderos picomarfil en el siglo veinte está sólidamente documentada con varios especímenes antes de 1920, dos especímenes y fotos en 1924 (de un pareja en el centro este de Florida), y un espécimen junto con varias fotos y otra documentación (que incluye grabaciones de video y audio) durante la década de 1930 (de una pequeña población en el noreste de Louisiana). Todos los informes antes de 1950 sólo fueron de avistamientos (en su mayoría aceptados por el Dr. James Tanner) en lugares que sostienen la hipótesis de que pequeñas cantidades (poblaciones) de Picamaderos Picomarfil subsistieron a través de la línea histórica por lo menos hasta la década de 1940. Después de 1950, los informes realizados por destacados ornitólogos sobre avistamientos provenientes del sur de Georgia y Florida son por lo general los más aceptados, pero otros informes de avistamientos durante esta década también provienen de Carolina del Sur, Alabama y Texas. Aunque por lo general se consideraron refutables después de 1960, se informaron muchos avistamientos, varias fotos, plumas, encuentros auditivos y grabaciones desde la mayor parte de la línea histórica hasta el informe de 1999 a lo largo del río Pearl en Louisiana. Durante el siglo veinte (antes o después de 1950), en ningún lugar y durante ninguna década se informó con frecuencia sobre la presencia de esta especie año tras año excepto en Singer Tract en Louisiana durante la década de 1930. Por lo tanto, el fracaso de las búsquedas organizadas para documentar el picamaderos picomarfil a lo largo del río Pearl durante el 2002, no fue un hecho sin precedentes. A diferencia de todos los informes del siglo veinte (aparte del de Singer Tract), los primeros avistamientos durante 2004 en Arkansas se repitieron ante observadores experimentados pero siempre con breves vislumbres de un ave en vuelo (presumiblemente el mismo pájaro macho). El anuncio público de 2005 sobre la existencia del picamaderos picomarfil (de por lo menos un pájaro macho) en Arkansas avivó las búsquedas de esta especie en el sudeste de los Estados Unidos desde las Carolinas, Georgia, Florida, Mississippi, Louisiana, Texas, Tennessee, Arkansas e Illinois. Hasta el momento, los resultados incluyen muchos otros posibles encuentros visuales y auditivos. Hasta la fecha, ninguno de estos informes proporciona mejores pruebas que los informes originales de Arkansas sobre la existencia constante de esta especie. La falta de cualquier prueba irrefutable después del anuncio de 2005, a pesar de la búsqueda relativamente exhaustiva, plantea varios interrogantes acerca de las estrategias de búsqueda para documentar sólidamente una especie muy extraña, si existiera. En particular, aquí se plantea si el patrón actual difiere de los informes anteriores a la década de 1930, entre 1930 y 1960, y entre 1960 y 2000. En otro lugar, el historial de los informes se ha presentado estado por estado. En este análisis, los extensos informes han sido compilados para comparar los encuentros de las últimas 10 décadas así como para comparar estos informes con posibles encuentros que corresponden a búsquedas recientes. Estos patrones se abordan para generar hipótesis alternativas acerca de la detección y la documentación del picamaderos picomarfil desde 1940.

Iliff°, M. J.; Kelling, S. T.

What is the Avian Knowledge Network (AKN)? Marshall Iliff, CLO, Ithaca, NY; Kelling, S., CLO, Ithaca, NY. miliff@aol.com

Advances in Bioinformatics, the application of computational tools for the management and analysis of biological data, have advanced research in a variety of disciplines ranging from

genomics to ecology. Only recently has the bird monitoring community begun to embrace bioinformatics. This is because: bird monitoring data are highly heterogeneous in nature, the data are stored in a variety of formats and logical structures, and cultural barriers pertaining to data ownership and adaptation of new data standards have impeded advances.

The AKN (http://www.avianknowledge.net) is part of several initiatives advancing bioinformatics for the bird monitoring community. First, along with the National Biological Information Infrastructure (http://www.nbii.gov) it is providing a way to discover bird-monitoring projects. Second, using data sharing and interoperability standards created for the global biodiversity community (http://www.gbif.org), the AKN is organizing bird monitoring data and making these data accessible for visualization and analysis. Third, the AKN is linking these data with a variety of remotely sensed data, including over 1600 variables describing land cover, climate, and human population demographics. Fourth, the AKN is developing an integrated suite of analytical tools for the exploratory analysis of large scale observational data. These tools combine state-of-the-art machine learning and statistical components to facilitate detailed discovery and analysis from large complex data. They are applied to AKN data to identify and estimate important predictors of bird distribution and abundance across broad geographical regions.

¿Qué es la Red del Conocimiento de las Aves (AKN)?

Los avances en bioinformática y la aplicación de herramientas de cómputo para el manejo y análisis de datos biológicos han resultado en avances para la investigación en varias disciplinas desde genética hasta ecología. Sin embargo, la comunidad interesada en el monitoreo de aves ha empezado a apegarse a la bioinformática sólo en fechas recientes. Esto obedece en parte a que la naturaleza de los datos de monitoreo de aves es altamente heterogénea, los datos son almacenados en formatos y estructuras lógicas diferentes. Las barreras culturales relacionadas a la propiedad de los datos y la adaptación a nuevos estándares de datos han impedido estos avances.

La Red del Conocimiento de las Aves ("Avian Knowledge Network" o AKN por sus siglas en inglés, http://www.avianknowledge.net), es parte de varias iniciativas que están avanzando la bioinformática en la comunidad que monitorea aves. Primero, y de manera conjunta a las iniciativas desarrolladas por NBII (http://www.nbii.gov), provee una forma de descubrir proyectos de monitoreo de aves. Segundo, utilizando los estándares para interoperar y compartir datos creados por la comunidad global de biodiversidad (http://www.gbif.org), AKN está organizando los datos de monitoreo de aves y haciéndolos accesibles para visualización y análisis. Tercero, AKN está vinculando todos los datos de observaciones con varios tipos de datos obtenidos a través de sensores remotos (más de 1,600 variables que a la fecha describen cobertura del suelo, clima y demografía de poblaciones humanas). Cuarto, AKN está aplicando técnicas novedosas de análisis de aprendizaje de computadoras y a la vez desarrollando nuevas técnicas que combinan componentes de estadística y aprendizaje de computadoras en un solo análisis con el propósito de aplicarlas a los mismos datos. El objetivo de estos análisis en proveer exploraciones preliminares de los datos para identificar variables predictivas de distribución y abundancia de las aves en regiones geográficas amplias con el propósito de orientar futuras investigaciones.

Ines Lara°, S.

Real Actions for Birds in the Neotropics – Connecting Migrants and Threatened Birds for Success. Sara Inez Lara, Fundacion ProAves, Colombia. slara@proaves.org

The Neotropics contain almost half of the world's avian diversity in an area less than 14% of the earth's land mass, with the most bird-rich countries of Colombia, Peru, Brazil and Ecuador represented in this session. Despite containing one quarter of the world's forest cover (964 million ha), the rate of deforestation in the Neotropics is one of highest in the world. The human population in the Neotropics grew from 166 million people in 1950 to 513 million in 2000 and expected to increase to 800 million by 2050. Growing pressures on natural resources are reflected by 446 IUCN threatened bird species in the region. The rapid loss of natural habitat in the region will also result in significant declines in Neotropical migratory birds. Over 420 migrants winter in the region, including 70 priority Green List species. Their fate largely lies in the hands of bird conservationists in NGOs and institutions across the region. Contrary to some perceptions, effective and efficient conservation actions are being undertaken in the region, as seen in this session. Capacity for conservation in the region has significantly increased thanks to sustained decades of training from North America, while priority-setting exercises (e.g. IUCN red list, Watch List, IBAs, AZEs, etc.) have identified clear priorities for birds. However, the greatest limiting factor and challenge for bird conservation in the Neotropics is financial support. If we want to ensure a future for birds in the Americas, we need to start supporting bird conservationists in the region now.

Los neotrópicos abarcan casi la mitad de la diversidad aviar mundial con apenas de 14% del superficie terrestre. A pesar de que los neotropicos abarcan un cuarto del bosque mundial (964 millones ha), la tasa de deforestación sea una de las más altas del mundo. La población humana en los neotropicos se aumentó desde los 166 millones en el 1950 hasta 513 millones en el 2000, y se espera que seguirá aumentando hacia 800 millones por el 2050. El aumento de las presiones en los recursos naturales se refleja en las 446 especies amenazadas de aves en la región. La pérdida rápida de los habitates naturales en la región resultará en disminuciones importantes en aves migratorias neotropicales. Más de 420 especies de aves migratorias invernan en la región, inclusive 70 especies de prioridad en la Lista Verde. Su futuro queda en las manos de los conservacionistas de aves en las ONGs e instituciones en la región. Al contrario a las percepciones, acciones eficaces se han puesto en marcha en la región, como se ve en este foro. La capacidad para la conservación en la región ha aumentado de una manera significativa, gracias a decenios de capacitación de personal por organismos de América Norte, mientras que esfuerzos para establecer prioridades (por ejemplo, la lista roja de la UICN, Watch List, IBAs, AZEs, etc.) han identificado prioridades claras. Sin embargo, el factor más restrictivo y el desafío para la conservación de aves en los neotropicos es el apoyo financiero. Si quisimos asegurar un futuro para las aves en las Américas, necesitemos apoyar los conservacionistas de aves en la región ahora mismo.

Jacobs°, B.

Forming International Partnerships: Examples from Missouri and Other States. Brad Jacobs, Missouri Dept. Conservation, MO. Brad.jacobs@mdc.mo.gov

State agencies with a mandate to protect, conserve, and manage migratory birds are developing partnerships outside their state's boundaries with conservation-minded agencies and organizations in Latin America and the Caribbean. These partnerships involve bird conservation actions at project locations where the state's breeding species are during migration and winter. Missouri and other partners have several projects in Latin

America, including Mexico (winter ecology studies, working with locals), Honduras (acquisition, restoration, education), and in Central America (scholarship for graduate student projects) as a whole. Missouri's projects and partnerships are discussed with respect to in-state and international partnership development, and the development of a funding mechanism at state and national level. For example, El Cielo Biosphere Reserve partnership, developed by the University of Missouri Columbia and the Missouri Department of Conservation, has as principal investigator a UMC PhD student from Tamaulipas Mexico. Many projecct partners are from Mexico as well as several U.S. states. Parque Nacional Pico Bonito (PNPB) Annex project is an effort of Fundacion Parque Nacional Pico Bonito to restore a native habitat corridor to PNPB and protect an abandoned Honduran Airforce base with dry forest habitat. A Honduran government agency is a major partner in the project. Missouri-based partners include Audubon Chapters, the Missouri Bird Conservation Initiative (MOBCI), and other partners raising funds to support the project via the American Bird Conservancy (ABC). Saint Louis Audubon Society has a scholarship program within Missouri for graduate students working on birds and bird conservation. They have expanded their offering to Central American graduate students. A request for proposals will be sent via several mechanisms to assure that all potential applicants know about the opportunity.

Creando Cooperación Internacional para Conservar las Aves: Ejemplos en Missouri y otros Estados.

Las agencias estatales que protegen, conservan, y protegen aves migratorias no solo están desarrollando cooperación fuera de las fronteras de sus estados con otros organismos y otras agencias de conservación dentro de los Estados Unidos, sino que también con organismos de Latinoamérica y el Caribe. Estos grupos enfocan sus esfuerzos de conservación en los estados donde las aves anidan. Missouri y sus cooperadores tienen varios proyectos en Latinoamérica incluyendo México donde se realizan estudios ecológicos durante el invierno con la participación de los lugareños, en Honduras existen proyectos de adquisición y restauración de tierras y educación, y el resto de Centro América becas son ofrecidas para apoyar trabajos de investigación de estudiantes de postgrado. Por el momento, existen discusiones sobre la creación de cooperación internacional entre los diferentes estados y la formación de un mecanismo de financiamiento a nivel nacional y para cada estado. Algunos ejemplos de cooperación internacional y algunos estados se incluye: La Biosfera El Cielo, la Universidad de Missouri en Columbia y el Departamento de Conservación de Missouri. Este grupo tiene como investigador principal a un estudiante de Ph.D de la Universidad de Missouri originario de Tamaulipas México. Varios cooperadores son de México y de diferentes estados en los Estados Unidos. Otro ejemplo es el Parque Nacional Pico Bonito (PNPB) para el cual la Fundación Parque Nacional Pico Bonito esta trabajando para restaurar un corredor biológico entre este parque y un proyecto abandonado de la Fuerza Armada que posee un bosque seco. Una agencia del gobierno hondureño es el participante principal en este proyecto y dentro de los grupos de Missouri que forman parte de este esfuerzo se incluye la Asociación Audubon y la Iniciativa para la Conservación de Aves en Missouri (MOBCI). Otros cooperadores se encargan de la recaudación de fondos para apoyar el proyecto a través del grupo Conservación de Aves Americanas (ABC). La Sociedad Audubon de Saint Louis ofrece becas en Missouri para estudiantes de postgrado que trabajan con aves y/o su conservación. Estas becas también serán ofrecidas a estudiantes de postgrado en Centro América a partir del próximo año. Un anuncio para solicitar propuestas será enviado a través de varios medios de comunicación para asegurar que todos los estudiantes que llenen los requisitos tengan oportunidad de participar.

Jahn*, A. E.; Levey, D. J.; Mamani, A. M.

The Role of Cerrado in Eastern Bolivia as a Wintering Habitat for Migratory Birds. Alex Jahn, University of Florida, Gainesville, FL; Levey, D.J., University of Florida, Gainesville, FL; Mamani, A.M., Museo de Historia Natural Noel Kempff Mercado, Santa Cruz, Bolivia. ajahn@zoo.ufl.edu.

Cerrado, a wooded grassland habitat, is endemic to central South America and harbors a variety of wintering migratory birds, yet is threatened by human development. Due to the central location of this habitat in South America, many migratory bird species (Nearctic-Neotropical as well as South American austral migrants) pass through or winter in it. We have been studying the ecology of migratory birds in cerrado in eastern Bolivia for the last 3 years. We present preliminary data from censuses and behavioral observations of migratory birds in this habitat as well as an evaluation of the challenges and opportunities for ecological research and conservation action in cerrado.

Jahn*, A. E.; Levey, D. J.; Mamani, A. M.

Opportunities for Research and Conservation of Migratory Birds on Private Lands in Eastern Bolivia. Alex Jahn, University of Florida, Gainesville, FL; Levey, D.J., University of Florida, Gainesville, FL; Mamani, A.M., Museo de Historia Natural Noel Kempff Mercado, Santa Cruz, Bolivia. ajahn@zoo.ufl.edu.

Although a variety of protected areas exist across South America, conducting research within them is not always feasible due to inaccessibility and to logistical hurdles once there. In the eastern lowlands of Bolivia, there are many private land holdings – principally cattle ranches - of relatively large size (i.e., >20,000 acres) and with minimally impacted ecosystems. Thus, holdings of this size present an opportunity for research and conservation at an ecosystem level. We have found that the great majority of property holders in this area welcome research activities and even donate resources in support of research on their land. Due to the central location of Bolivia in South America, many migratory bird species (Nearctic-Neotropical as well as South American austral migrants) pass through or winter there. We have been studying the ecology of migratory birds on one property, Estancia Caparú, for the last 3 years in eastern Bolivia and present preliminary data as well as an evaluation of the challenges and opportunities for research on private lands in the region.

Jahn°, O.

Bird Communities as Indicators for Ecosystem Integrity of Humid Tropical Forests in the Ecuadorian Chocó. Olaf Jahn, Aves & Conservación, Quito, Ecuador. O.Jahn@andinanet.net.

In 1997, I studied how bird communities can be used as indicators for habitat quality in Playa de Oro, Esmeraldas. I chose two independent transects, MNT1 (625m) and MNT2 (550m), which were surveyed with the Transect Mapping method *sensu* Jahn (in press). They were located in a similarly structured habitat mosaic of cultivated land and selectively logged forest. The greater variability of human-managed habitats was the principal cause for higher species richness and diversity at MNT1 (n= 162) in comparison with MNT2 (n= 144). Nevertheless, the number of forest-dependent species (MNT1= 78, MNT2= 90) and threatened taxa (world: MNT1= 4, MNT2= 7; Ecuador: MNT1= 37, MNT2= 48) was higher at MNT2, likely due to the lower degree of fragmentation, higher foliage complexity, and lower hunting pressure. Biomass density was almost identical, with an estimated 193kg/km^2 for MNT1 and 198kg/km^2 for MNT2. The number of breeding 'pairs' was roughly 2000/km^2

and 1800/km^2 and the average biomass per individual 36g and 41g respectively. In conclusion, the conservation value of study sites should not be ranked on the basis of species richness, diversity indices, biomass density, etc., but rather through an analysis of species composition. For example, the 'bird community index' (*BCI*) *sensu* Canterbury *et al.* (2000) clearly reflected the higher value of MNT2 in comparison with MNT1 for the conservation of forest-dependent birds (BCI: MNT1= –0.049 versus MNT2= 0.541).

Comunidades de Aves como Indicadores de la Integridad Ecosistémica de Bosques Húmedos Tropicales en el Chocó Ecuatoriano.

En 1997, en Playa de Oro, Esmeraldas, estudié cómo las comunidades de aves pueden ser utilizadas como indicadoras de la calidad de hábitat. Escogí dos transectos independientes, MNT1 (625m) y MNT2 (550m), los cuales fueron muestreados con el método Mapeo de Transectos según Jahn (en prensa). Ambos transectos estuvieron localizados en mosaicos de hábitat, con estructura similar, formados por tierras cultivadas y bosque talado selectivamente. La mayor variedad de hábitat manejado por el hombre fue la principal causa de una mayor riqueza y diversidad de especies en MNT1 (n= 162), en comparación con MNT2 (n= 144). Sin embargo, el número de especies dependientes del bosque (MNT1= 78, MNT2= 90) y de taxa amenazados (mundial: MNT1= 4, MNT2= 7; Ecuador: MNT1= 37, MNT2= 48) fue más alto en MNT2, probablemente debido al menor grado de fragmentación, mayor complejidad del follaje y menor presión de cacería. La densidad de la biomasa fue casi idéntica, con un estimado de 193kg/km^2 para MNT1 y 198kg/km^2 para MNT2. El número de "parejas reproductivas" fue aproximadamente de 2000/km^2 y 1800/km^2 y el promedio de la biomasa por individuo de 36g y 41g, respectivamente. En conclusión, el valor para la conservación de sitios de estudio no debe ser estimado en base a la riqueza de las especies, índices de diversidad, densidad de la biomasa, etc. sino a través de un análisis de la composición de especies. Por ejemplo, el "índice de la comunidad de aves" (*BCI*) según Canterbury *et al.* (2000) claramente indicó el mayor valor de MNT2 en comparación con MNT1 para la conservación de las aves dependientes del bosque (BCI: MNT1= –0.049 versus MNT2= 0.541).

Jasikoff°, T.

Connecting Wildlife with People via Ecosystem Management and Ecotourism Development at the Montezuma Wetland Complex. Tom Jasikoff, USFWS, Seneca Falls, NY. Tom_Jasikoff@fws.gov

The Montezuma wetlands, nestled in the Finger Lakes Region of Central New York State, have long been recognized as an expansive, 40,000-acre migratory bird staging area and resource of tremendous value to wildlife and people. Expansion of the Erie Canal system early in the 20th Century resulted in widespread clearing, drainage and conversion of wetlands into muckland farms throughout much of the Montezuma watershed, thereby prompting the U.S. Fish and Wildlife Service to establish the 7,000-acre Montezuma National Wildlife Refuge, and New York State to establish the 7,000-acre Howland Island Wildlife Management Area in 1937. A plan was approved in 1991 to expand the acquisition area and scope of the Montezuma project and thus restore the historic 40,000-acre wetland. This joint venture project united a broad coalition of conservation partners, identified wildlife habitat and landscape-level restoration goals and established the Montezuma Wetlands Complex. As this shared vision of ecosystem management and conservation unfolds, partners are building upon traditional consumptive uses, expanding bird observation and wildlife-oriented recreational and educational opportunities for visitors and promoting Montezuma as a destination for ecotourism. Through innovative community-based partnerships, new stakeholders are encouraged to embrace a Regional environmental agenda and create economic opportunities that make conservation of natural resources beneficial to the local community. Consequently, Montezuma is on the cutting edge of 21st Century conservation – connecting wildlife with people and celebrating a promising future.

Johnson*, C. B.; Hitch, A. T.; Grand, J. B.

Predicting the Occurrence of Brown-headed Cowbirds in Northeastern Alabama. Carrie Johnson, Auburn University, Auburn, AL; Hitch, A.T., Auburn University, Auburn, AL; Grand, J.B., USGS, Auburn, AL. johncab@auburn.edu.

Brown-headed Cowbirds (*Molothrus ater*) are an abundant nest parasite and are believed to have significant impacts on the productivity of nesting passerine birds throughout their distribution. Predicting the occurrence of Brown-headed Cowbirds in areas where species of concern are likely to occur should be incorporated into conservation planning. We conducted point counts and quantified significant habitat characteristics at each sample point. We used occupancy analysis to estimate occurrence of Brown-headed Cowbirds in different habitats. Based on previous studies of Brown-headed Cowbird habitat preferences, we compared models estimating their occurrence in relation to the amount of forest edge, the density of midstory vegetation, and the availability of early successional habitat present at each location. We predicted that the amount of forest edge habitat present would be insignificant in predicting the occurrence of Brown-headed Cowbirds, while the amount of midstory vegetation and available early successional habitat would be of great importance. By gaining a better understanding of the landscape characteristics that are favored by Brown-headed Cowbirds in the Cumberland Plateau, managers can avoid creating favorable habitat for these nest parasites.

Johnson°, M. D.; Kellermann, J. L.; Stercho, A. M.; Hackett, S. C.; Robinson, D. E.

Pest Control as an Incentive for Bird Conservation in Coffee Plantations. Matthew D. Johnson, HSU, Arcata CA; Kellermann, J., HSU, Arcata CA; Stercho, A.M., HSU, Arcata CA; Hackett, S.C., HSU, Arcata CA; Robinson, D.E., Dept Univ West Indies, Mona Jamaica. mdj6@humboldt.edu

Ecological services provided by native species can offer incentives for conservation on private, agricultural lands. Birds in diverse coffee farms suppress insect abundance, but to date there is no evidence that these reductions directly benefit crop production or farm income. We hypothesized that (1) birds suppress the coffee berry borer (*Hypothenemus hampei*), the world's most destructive coffee pest, (2) this service translates to increased income for farmers, and (3) the benefit of birds is positively associated with vegetative complexity and farm heterogeneity. Using experimental bird exclosures, we tested these hypotheses in one low and four high elevation farms in Jamaica. Coffee berry borer were more abundant inside than outside exclosures across all farms, though the differences were greatest at low elevation. The market value of increased saleable berries attributable to suppression of coffee berry borer by birds ranged from US$17 to over US$80 per acre, but there was little evidence that this ecological service provided by birds was dependent on farm complexity. Our results are the first to demonstrate a strong direct economic incentive to conserve bird populations in

coffee farms. We hypothesize that landscape heterogeneity may enable the spread of birds from diverse to homogenous farms.

Johnson°, M.; Black, J.; Bachman, D.; Spragens, K.

Habitat Enhancement to Reduce Impact of Aleutian Cackling Geese on Private Coastal Pastures. Matthew Johnson, HSU, Arcata, CA ; Black, J., HSU, Arcata, CA; Bachman, D., HSU, Arcata, CA; Spragens, K., HSU, Arcata, CA. mdj6@-humboldt.edu

The Aleutian Cackling Goose (*Branta hutchinsii leucopareia)*, one of the original 72 species protected by the Endangered Species Act (ESA), has increased from fewer than 800 in 1967 to over 100,000 in 2006. But has the ESA worked too well? To prepare for spring migration to Aleutian islands, these geese forage in large numbers on private pastures in coastal Northern California and Oregon, impacting regional economies. In Humboldt County California, we investigated whether experimental treatments could be applied to public grasslands to enhance forage quality, attract and hold geese, and potentially diminish pressure on surrounding private pastures. Slow-release fertilizer enhanced the protein content of forage plants and geese spent significantly more time in fertilized than in control plots. Plots planted with clovers initially attracted geese, but intense grazing curtailed plant growth on the plots and over time they were not used more than control plots. Coincident with our experiment, a late season hunt implemented only on private land redistributed geese over the landscape and showed some evidence of temporarily shifting geese from private to public land. We believe that the solution to this management problem will include including habitat enhancement on public land (pull), the creation of incentives aimed at providing alternative foraging areas, and hunting and hazing (push) aimed at shifting birds to habitats where they are welcome.

Johnson°, R. R.

Putting the Outcomes of SHC to Work in Bird Conservation. Rex R. Johnson, U.S. Fish and Wildlife Service, Minnesota. rex_johnson@fws.gov

Advances in the science of landscape ecology and conservation biology, geospatial analysis, and an awakening among conservation organizations about the need to better blend science and management (Strategic Habitat Conservation or SHC) are beginning to yield powerful tools that make management more efficient, transparent and credible. These same tools are powerful communication devices. Unfortunately, wildlife managers and scientists are often called on to communicate these strategies and outcomes to the public and thus to policy makers. The approaches and tools described in preceding presentations fall far short of their potential impact as long as they are communicated largely internally within the traditional conservation community of agencies and NGOs. Achieving our goals for bird conservation will require that we capture the attention of the public and policy makers using these tools and influence their thinking, values and investments. Relying on managers and scientists to do this communication is a doomed strategy. The conservation community needs to broadly expand its scope to include an array of other disciplines and provide equal capacity for science-based SHC, sociology, and public relations and marketing mimicking approaches long employed by the for-profit sectors of society. Rather than overlapping efforts at planning, conservation delivery, and evaluation, we need to collectively step back and holistically identify capabilities needed to attain our goals for bird conservation and then decide which members of the conservation community can best deliver each. This idea implies the need for a fundamental change in the conservation model, and a more coordinated and cooperative approach to bird conservation that may result in a radically changed focus for some agencies and NGOs.

Jones*, C. D.; Cox, J. A.; Tucker, J. W.

Bachman's Sparrows (*Aimophila aestivalis*) as Indicators of Fire Frequency in the Southeastern United States, *Clark D. Jones, Tall Timbers Research Station, Tallahassee, FL and Warnell School of Forestry and Natural Resources, Athens, GA; Cox, J. A., TTRS, Tallahassee, FL; Tucker, J. W., Archbold Biological Station, Lake Placid, FL. Clark@ttrs.org.

Southern pine savannas are fire-maintained communities that support endemic breeding birds as well as a diverse winter community of short-distance migrants. Bachman's Sparrow (Aimophila aestivalis) is one of the endemic breeding birds whose population health is tightly linked to the use of prescribed fire and therefore may serve as a good indicator of ecosystem health. Census data indicate populations of Bachman's Sparrows decline 3 years after burns, and studies based on color-marked populations suggest subtle differences may occur in the second year post fire. The changes include territory abandonment, loss of ground cover structure associated with nest sites, and lower winter abundances. Fire intervals of 3-5 years are used to maintain pine savannas on many public lands, but these frequencies may not sustain healthy sparrow populations over long periods of time. Other factors, such as the season in which prescribed fires are applied, also affect populations in a complex manner, but season of burn may not be as important as frequency of burning where large populations exist. Bachman's Sparrows also are easy to monitor during the breeding season, so population trends can aid land managers in evaluating the frequency of fires applied to southern pinelands under their stewardship.

Gorrión de Bachman (*Aimophila aestivalis*) como Indicación de Frecuencia del Fuego en el Sudeste de los Estados Unidos.

Sabanas de pinos en el sudeste de los Estados Unidos son comunidades mantenido del fuego que sustentan aves indígenas y también muchas migrantes durante el invierno. El gorrión de Bachman (*Aimophila aestivalis*) es uno de las aves indígenas que tiene niveles de población correspondientes al uso del fuego. Por eso puede ser una indicación importante sobre la salud de las ecosistemas. Datos por census demuestra poblaciónes del gorrión de Bachman suben en el tercero año después de quema planeada. Estudios de poblaciónes marcados sugieron diferencias sutiles hasta dos años después. Cambios incluyen abandonos de territorio, pédidas del alberque relatado a los nidos, y declinación en la población durante los inviernos. Quema cada 3-5 años mantiene sabanas de pinos en mucha tierra pública, pero es posible que estas frecuencias pueden hacer daño a los gorriónes andando el tiempo. También en cual estación hay quema afecta los gorriónes, pero no es tan importante que la frecuencia en lugares con poblaciónes grandes. Porque se puede estudiar gorriónes de Bachman sin dificultad durantecrianza, los niveles de población puede ayudar con la evaluación de frecuencia de quema en bosques de coníferas al sudeste.

Jones°, C. A.; Plante, S.; Shackelford, C. E.

How the Great Texas Birding Classic Has Met the Challenge to Conserve Critical Gulf Coast Habitat. Carol Jones, GCBO,

Lake Jackson, TX; Plante, S., TPWD, Austin, TX; Shackelford, C., TPWD, Nacogdoches, TX. cjones@gcbo.org

In 1997 the first Great Texas Birding Classic was held. Since that time, $578,000 has been raised and contributed for 37 conservation projects. One of the goals of the GTBC is to conserve and restore habitat that otherwise would have been lost to development or been left unimproved and would therefore be unsuitable habitat for Nearctic-Neotropical migrants. A part of the mission is to promote the Great Texas Coastal Birding Trail and raise awareness of the Texas Coast as a premiere destination for bird watching. To maintain and expand this perception, coastal habitats needed to be secured and maintained into perpetuity. Funds raised and then distributed back to conservation projects (that the winning teams get to pick) has proved to be a sustainable and viable program. Funded projects have varied in size from a city block to hundreds of acres. The Birding Classic is an outreach program designed to reach every type of birder and conservationist. One of the most significant outreach successes has been the participation and engagement of hundreds of youth birders from all across the United States. We know that it takes an understanding of the importance of habitat diversity to create conservationists. The GTBC encompasses 42 counties and stretches 600 miles from the state line in east Texas to the tip of Brownsville.

Jones-Farrand°, T. D.; Tirpak, J. M.; Baxter, C. K.; Fitzgerald, J. A.; Thompson, III, F. R.; Twedt, D. J.; Uihlein, III, B. W.

Population Objectives for Priority Birds in the Central Hardwoods and West Gulf Costal Plain. Todd D. Jones-Farrand, University of Missouri, Columbia, MO; Tirpak, J. M., Lower Mississippi Valley Joint Venture, Vicksburg, MS; Baxter, C. K., Lower Mississippi Valley Joint Venture, Vicksburg, MS; Fitzgerald, J. A., Central Hardwoods Joint Venture, Brentwood, MO; Thompson, III, F. R., USDA Forest Service, Columbia, MO; Twedt, D. J., USGS – PWRC, Vicksburg, MS; Uihlein, III, B. W., Lower Mississippi Valley Joint Venture, Vicksburg, MS. FarrandD@missouri.edu.

The Central Hardwoods and Lower Mississippi Valley Joint Ventures are collaborating on a methodology for setting population objectives. Setting realistic objectives requires knowledge of the quantity, quality, and spatial configuration of available habitat, an explicit linkage between habitat condition and population response, and expectations of future conditions. To address these needs, we developed multi-scale Habitat Suitability Index models for 40 priority forest and shrubland species in 2 Bird Conservation Regions (BCR 24 and BCR 25). Models estimated relative habitat quality based on site and landscape conditions derived from national geospatial datasets. We generated model predictions for two time periods, and used these to correct PIF population estimates for habitat quality. This allowed us to track how temporal changes in habitat affected populations. A decision support tool currently under development will allow users to examine effects of alternative land use scenarios on avian abundance at sub-BCR scales. Input from our conservation partners with regards to expected future conditions and planning needs is being sought to enhance the utility of research products for setting objectives and planning conservation actions.

Juarez°, E.; Abarca, F.

Arizona's PIF Plan Objectives Tiered to the Wildlife Action Plan: Opportunities for Implementing Bird Conservation in the Borderlands. Edwin Juarez, AZGFD, Phoenix, AZ; Abarca, F., AZGFD, Phoenix, AZ. ejuarez@azgfd.gov.

For nearly ten years, the Arizona Partners In Flight Bird Conservation Plan (BCP) has played an integral role in guiding delivery of conservation actions by establishing objectives for bird populations and habitats in Arizona. Recognizing the BCP as a key conservation tool, the State's Wildlife Action Plan (SWAP) effectively integrates all the BCP priority species into one of its higher species prioritization categories. Thus the BCP serves as a tool for prioritizing implementation of the SWAP by bridging its strategic goals to the operational activities and management recommendations of the BCP. SWAP strategies and actions linking back to the BCP represent partnership opportunities for implementing directed conservation management to benefit these high priority birds. Many of these species range over large areas with little regard for management or political boundaries, making partnerships critical to assure their continued conservation. For example, the State shares over 350 miles of border with Mexico and for nearly 30 years Arizona has worked closely with Mexican authorities and other partners (e.g., Sonoran Joint Venture) to assure the continued conservation of many borderland species. Recent collaborations have included work on Thick-billed Parrot, Gould's Turkey, Masked Bobwhite, Yuma Clapper Rail and Cactus ferruginous Pygmy-Owl. These cooperative and coordinated efforts have achieved important goals for the management and conservation of birds and their habitats on both sides of the border. The Arizona Game and Fish Department relies on various funding mechanisms to support these collaborations and also maintains several external grant programs to support partners' actions.

Kasner°, A. C.

Audubon Texas Private Land Initiatives for Bird Conservation. Andrew C. Kasner, Audubon Texas, San Antonio, TX. akasner@audubon.org.

Audubon Texas Quail and Grassland Bird Initiative has been in place since 2003, and works to effectively engage private landowners in habitat management and/or restoration of native warm season grass and shrublands to benefit Northern Bobwhite and associated grassland bird species throughout Texas. The successful establishment of landowner cooperatives with other conservation partners has resulted in over 3 million acres in Texas currently under some form of management for wildlife. Similarly, our brown-headed cowbird trapping program has allowed us to effectively engage private landowners in the recovery efforts for Black-capped Vireo statewide. Last, our Important Bird Areas program works to recognize landowners working to protect or restore habitat for threatened and endangered species such as Black-capped Vireo and Golden-cheeked Warbler. This presents the preliminary results of these efforts and their potential for furthering conservation goals on private lands.

Kaufmanº, K.; Kaufman, K.

Working Toward a Bird-literate Society. Kenn Kaufman, Rocky Ridge, Ohio; Kaufman, K., Black Swamp Bird Observatory, Oak Harbor, Ohio. kenn.kaufman@worldnet.att.net

Even with the best of monitoring and with detailed strategies for action, our plans for bird conservation will fail if they lack public support. Such support is not guaranteed, even though surveys indicate that many millions of Americans profess an interest in birds. There are three factors that prevent this mass of casually-interested birders from being effective advocates for conservation. One factor is a dearth of knowledge about birds beyond simple interest. Another is that birding is still bedeviled

with highly negative stereotypes, which tend to make these casual birders reluctant to talk openly about their interest. The third factor, following from the second, is that these millions of casual birders are mostly invisible to each other and to the public at large, so they fail to provide any coherent voice in support of bird conservation. To create a bird-literate society that will support conservation, bird educators need to focus on all three of these areas. Approaches to education that begin with gloomy or alarmist predictions may gather immediate attention, but a more effective long-term strategy is to build a sense of wonder and appreciation for birds first before selectively introducing the idea of threats and problems. Birders, conservation workers, and educators also need to do more to counteract the negative stereotypes of birding rather than perpetuating them. This presentation will outline six major steps for accomplishing these goals.

Kelling°, S.

Discovery, Organization, and Access: The Role of Bioinformatics in the PIF Community. Steve Kelling, CLO, Ithaca NY. stk2@cornell.edu

The opportunity to organize and make available the rich and varied data resources of the Partners In Flight community has only recently come to fruition due to 4 major technological advances: Moore's Law made computers ubiquitous, the Internet and web browsers created a global standard for passing information, fiber optics globalized computer networks, and application and data management processes provide seamless access, manipulation, and analysi of data resources.

For these advances to transform resource discovery, access, and analysis several interrelated processes are required. First, required *resources* must be identified. Second, one must *discover* that these resources exist. Third, the resources must be *organized* into an interoperable format. Fourth, *access* to the resources must be available. Finally, *information products* must be developed. These products integrate data resources (e.g., observational data with land cover, human demographic or climatic variables) to produce visualizations, via maps, graphs, and tables, or scientific and technical publications.The need for data sharing and interoperability of environmental data is recognized by the Convention of Biological Diversity of the United Nations Environment Program as one of the preconditions for improved global biodiversity conservation (UNEP, 2005). This increased interest is due in part to the need to investigate complex ecological and environmental issues at broad geographic or temporal scales. This talk will provide a summary of the efforts being made to organize PIF data resources following the UNEP guidelines.

Descubrir, Organizar y Acceder: El papel de la Bioinformática en "Compañeros en Vuelo".

La oportunidad de organizar y hacer disponibles los abundantes y variados recursos de información de la comunidad de "Compañeros en Vuelo" (PIF por sus siglas en inglés) ha rendido frutos recientemente, gracias a cuatro grandes avances tecnológicos: La ley de Moore hizo las computadoras omnipresentes, el Internet y los buscadores de la red crearon un estándar global para la transmisión de información, la fibra óptica globalizo las redes de computadoras, y la aplicación de procesos de manejo de información permite acceso continuo, manipulación y análisis de recursos de información.

Se necesitan varios procesos interrelacionados para que estos avances transformen el descubrimiento, acceso y análisis de estos recursos. Primero, los *recursos* requeridos deben ser identificados. Segundo, uno debe *descubrir* la existencia de estos recursos. Tercero, los recursos deben ser *organizados* en un formato interoperativo. Cuarto, el *acceso* a los recursos debe hacerse disponible. Finalmente, los *productos de información* deben ser desarrollados. Estos productos integran los recursos de información (e.g. datos de observaciones con los de cobertura del suelo, demografía humana o variables del clima) para producir visualizaciones en forma de mapas, gráficos, tablas o publicaciones técnicas y científicas.

La necesidad de compartir datos y hacer interoperativos los datos ambientales es reconocida por la Convenio Sobre Diversidad Biológica del Programa de Naciones Unidas para el Medio Ambiente (PNUMA) como una de las condicionantes para mejorar la conservación de la biodiversidad global (PNUMA 2005). Este aumento de interés responde en parte a la necesidad de investigar asuntos ambientales y ecológicos complejos a amplias escalas geográficas o temporales. Esta presentación proveerá una síntesis de los esfuerzos en marcha para organizar los recursos de datos de PIF siguiendo los lineamientos del PNUMA.

Kerry°, M.; Couturier, A.

Community Based Conservation of Important Bird Areas (IBA) in Canada. Mara Kerry, Nature Canada, Ottawa, Ontario; Couturier, A., Bird Studies Canada, Port Rowan, Ontario. mkerry@naturecanada.ca

Nature Canada (NC) and Bird Studies Canada (BSC) are the Canadian co-partners in Birdlife International. A key component of BirdLife International's conservation strategy concerns the establishment, monitoring, and enhancement of Important Bird Areas (IBAs). Using standardized methods and criteria, BirdLife partners have identified thousands of IBAs worldwide and, in a very limited number of cases, have begun to assess the "health" of IBAs through BirdLife's Global Framework for IBA monitoring. In Canada 597 IBAs have been identified. A significant portion of Nature Canada's IBA conservation strategy involves working with local stewards towards habitat conservation goals. In 1999, Nature Canada launched a small-grants fund, IBA Communities in Action, to support the implementation of conservation actions at IBAs. Since 1999, Nature Canada has granted more than $604,000 to about 170 projects at more than 100 different IBAs. Supported projects focused on actions such as stewardship, public awareness, research, habitat restoration, environmental education and monitoring. In the last 2 years Nature Canada has begun to focus its support on high priority globally significant IBAs in order to bring about enhanced impacts and long lasting conservation benefits. Future work will address development of a "caretaker" network, monitoring needs at IBAs and linking sites and local groups along flyways to advance coordinated hemispheric initiatives.

Keyes°, T.

Georgia's annual Youth Birding Competition: Building Young Birders and Conservationists. Timothy Keyes, Georgia DNR, Forsyth, GA. Tim_keyes@dnr.state.ga.us

In a time of growing disconnection with the natural world, competition with electronic media and fears of "nature deficit disorder", the Georgia Department of Natural Resources has offered an annual Youth Birding Competition (YBC). The YBC is designed to encouraging kids to engage with the natural world through birds, and in the process raise support for the conservation cause of their choice. Kids form teams of birders, prepare with the help of experienced mentors, and compete in a 24 hour birding event modeled loosely on the World Series of Birding. In 2006 and 2007 respectively we had 68 and 100 kids participate,

and combined they raised over $5,000 for local and national conservation efforts. In 2007, several teams identified over 120 species. The YBC introduces many kids to the world of birds, and encourages existing young birders by introducing them to others who share their passion. YBC competitors have gone on to become regular participants in Georgia's birding list serve, members and trip leaders of their local Audubon chapters, and even initiate bird education programs through 4-H and scouts programs. We feel the YBC has great potential to help build a new generation of birders and bird conservationists, and encourage other state to establish similar programs.

Klaus°, N.; Rush, S.; Keyes, T.; Cooper, B.

Fire on the Mountain: Upland Fire and its Effects on Songbirds in the Southern Appalachian Mountains, USA. Nathan Klaus, Georgia DNR, Forsyth, GA; Rush, S.A., UG, Athens, GA; Keyes, T., Georgia DNR, Forsyth, GA; Robert J. Cooper, UG, Athens, GA. Nathan.Klaus@dnr.state.ga.us

Within the Southeastern United States where fire regimes are well understood, such as the longleaf pine (*Pinus palustris*) ecosystem, fire has been demonstrated to play a vital role in sustaining community diversity and in providing habitat for wildlife. However, within upland hardwood ecosystems the historic frequency of fire remains less understood leaving restoration of fire regimes controversial and effects on wildlife largely unknown. As a result questions such as appropriate fire intensity, season, and return interval remain. Our research attempts to address how fire intensity and fire frequency affects songbirds in the Southern Appalachians. Through point count surveys and vegetation measurements we identified changes in species abundance and habitat use in relation to fire intensity and time since the occurrence of fire. Our results suggest that early successional songbirds, a group currently showing declines, such as the Eastern Towhee (*Pipilo erythrophthalmus*) and Golden-winged Warbler (*Vermivora chrysoptera*) benefit from intense fire while among those species requiring mature forest to breed, such as the Ovenbird (*Seiurus aurocapillus*), Worm-eating Warbler (*Helmitheros vermivora*) and Wood Thrush (*Hylocichla mustelina*) effects varied by species. Drawing reference from our study we will discuss the implications of fire on habitat change and species-specific response thus providing insight into the development of fire regimes given current conservation strategies.

Klem, Jr.°, D.

Avian Mortality at Glass. Daniel Klem, Jr., Biology, Muhlenberg College, Allentown, PA. klem@muhlenberg.-edu.

A vast and growing amount of evidence support the interpretation that, except for habitat destruction, collisions with clear and reflective sheet glass and plastic cause the deaths of more birds than any other human-related avian mortality factor. From published estimates, an upper level of 1 billion annual kills in the U.S. alone is likely conservative; the worldwide toll is expected to be billions. Birds in general act as if sheet glass and plastic in the form of windows and noise barriers are invisible to them. Casualties die from head trauma after leaving a perch from as little as one meter away in an attempt to reach habitat seen through or reflected in clear and tinted panes. There is no window size, building structure, time of day, season of year, or weather conditions during which birds elude the lethal hazards of glass in urban, suburban, or rural environments. The best predictor of strike rate is the density of birds in the vicinity of glass, and vegetation, water, and feeders best explain increased density and mortality at a specific site. Glass is an indiscriminate killer, taking the fittest individuals of species of special concern as well as the common and abundant. Preventive techniques range from physical barriers, adhesive films and decals to novel sheet glass and plastic, but no universally acceptable solution is currently available for varying human structures and landscape settings.

Klym°, C. M.

Mist-netting Demonstrations – an Excellent Venue for Habitat Education. C. Mark Klym, TPWD, Austin, TX. mark.klym@-tpwd.state.tx.us

Mist-netting demonstrations are an excellent tool for teaching about birds. A significant opportunity to teach about habitat, and the impact of habitat on diversity, is often overlooked. Mist nets are often placed to optimize habitat diversity and edge effect. We do this to maximize species diversity and bird density in our demonstrations, but often fail to convey this to our guests, thus leaving our guests confused about "why don't I find these birds in my garden", and failing to effect meaningful change in the concrete jungle.

Klym°, C. M.

Conservation Through Bird Education in Texas. Mark Klym, Texas Parks and Wildlife Department, Austin, TX. mark.klym@tpwd.state.tx.us.

In a state with more than 95% private land ownership, direct and meaningful conservation activities by state agencies are difficult. Private property is a very important concept in Texas, and landowner rights are not to be taken lightly. Equally challenging is meeting the needs of the species with the expectations, standards and norms of urban communities. The safest way to achieve conservation goals in these circumstances is through education, and by leveraging the economic benefits of ecotourism. Birds play a significant role in this effort. The state of Texas has created conservation, citizen science, and literature programs designed to trigger interest in bird conservation, help the citizenry understand habitat and restore damaged resources, and to reach out to an ever growing urban population. These programs include electronic media, direct consultation, programs and presentations, demonstration projects and literature. The major attraction of the programs is the restoration of bird habitat and resulting tourism generated by birders. Through these programs, important pockets of habitat for both resident and migratory birds are being restored and preserved.

Klym°, C. M.

Reducing the Effects of Energy Extraction on Birds Through Habitat Restoration Programs. C. Mark Klym, TPWD, Austin, TX. Mark.klym@tpwd.state.tx.us

Habitat restoration programs have long been used in residential and commercial settings to reduce the impacts of urbanization on wildlife in general and birds in particular. Expanding these programs to include industrial properties, both active and abandoned, can reduce the impact of industrial, including energy extracting, operations on birds. Effectively using these tools within the industrial setting requires presenting the land owner with effective tools that they can use in selecting vegetation that will provide needed shelter within the framework of an active industrial operation. Tools used in the backyard operation have to be modified to recognize larger scale and the necessity of allowing excessive access to the property. In Texas, what started as a backyard habitat program has expanded to include several industrial properties. Recently this has included energy

extraction companies. This presents an opportunity to work with these organizations to further reduce their impact on bird habitat.

Knutson°, M.; Danz, N.; Route, B.

The Detectability Dilemma: Hedging Bets in the Absence of Consensus. Melinda Knutson, USFWS, La Crosse, WI; Danz, N., Natural Resources Research Institute, Duluth, MN; Route, B., NPS, Ashland, WI. melinda_knutson-@fws.gov.

Land managers face a number of challenges related to bird monitoring. In the past, counting birds at point counts and the summary and analyses of those data were relatively simple. Now managers need to be concerned about birds they didn't detect as well as those they did. There is a developing belief that this is essential to avoid errors in interpretation. The methods used to estimate detection probabilities are numerous (distance estimation, multiple visits, double-observer, removal methods, etc.) and the associated analyses require specialized training and expertise. There are challenges and costs associated with all of the available methods. In addition, recent research indicates that the accuracy of field estimation is a problem with some of the methods. Refuges in the Midwest and the Northeastern Regions of the USFWS identified the need for a standardized monitoring protocol for passerine birds that will support the estimation of detection probabilities. Decisions about sampling designs and allocation of effort are constrained by the resources available to conduct the monitoring. We worked across agencies to develop a protocol that shared common elements for the purpose of retaining options for multi-agency, landscape scale comparisons in the future. But, we also needed a protocol that could be implemented by volunteers with minimal training. In the end, the specific protocol reflects competing needs for flexibility in future analyses, comparisons with historic (legacy) data, and across multiple agencies and landscapes, as well as cost-effectiveness and practicality. We present some lessons learned in the process.

El Dilema de la Detectabilidad: Evasivas por Ausencia de Consenso.

La gente dedicada al manejo de recursos enfrenta varios retos relacionados al monitoreo de aves. En el pasado, los conteos de aves mediante conteos por punto y la síntesis y análisis de estos datos eran relativamente simples. Ahora deben preocuparse por las aves que no detectaron y por las que sí. Hay una creencia creciente de que es esencial evitar errores en la interpretación de los resultados. Los métodos utilizados para estimar la probabilidad de detección son numerosos (estimación de la distancia, visitas múltiples, doble-observador, métodos de remoción, etc.) y los análisis asociados requieren de entrenamiento especializado y experiencia. Hay retos y costos asociados con todos los métodos. Además, investigaciones recientes indican que la precisión de las estimaciones de campo es un problema con algunos de los métodos. Los refugios (de vida silvestre) de las regiones del medio oeste y el noreste del Servicio de Pesca y Vida Silvestre de los Estados Unidos (USFWS por sus siglas en inglés), identificaron la necesidad de estandarizar un protocolo de monitoreo para aves paserinas que apoye la estimación de probabilidades de detección. Las decisiones acerca de los diseños de muestreo y la designación de esfuerzo están limitados por los recursos disponibles para conducir el monitoreo. Trabajamos a través de agencias administrativas para desarrollar un protocolo que comparta elementos comunes, con el propósito de retener opciones para futuras comparaciones entre los datos de múltiples agencias y a escala de paisaje. Sin embargo, necesitamos un protocolo que pueda ser implementado por voluntarios con un entrenamiento mínimo. Al final, el protocolo específico refleja una competencia entre necesidades, por un lado la flexibilidad para futuros análisis, y por otro las comparaciones con datos históricos ("legados") y entre múltiples agencias y paisajes, que a la vez sean prácticas y efectivas en cuanto a costo. En esta ponencia, presentaremos las lecciones aprendidas en el proceso.

Kohl°, J.

Interpretation Engages People, Forges Relationships with Places. Jon Kohl, Fermata, Inc., Tres Ríos, Costa Rica. jk-fermata@jonkohl.com

Often visitors pass through natural sites without ever emotionally connecting with them or their resources; visitors may seek birds whose migration they see as beyond any particular place or they may have visited so many places in their experience that many become one.

This presentation will use interpretation and photography to illustrate, through examples of birding in the Americas, how interpretation (as well as the planning and training necessary to make it happen) can engage visitors and encourage them to participate in a place's or resource's conservation.

Interpretation is a communication approach that forges emotional and intellectual relationships between people and places so that those people participate in that place's conservation. It builds relationships via authentic, personalized, place-based experiences that ideally transform and leave visitors eager to assist that place's meeting its management objectives – conservation, fundraising, education, public relations, constituency building – but decreases markedly the chance that interpretation gets cut when site budgets tighten.

While interpretation uses many media, such as signage, printed materials, exhibitry, videos, artwork, storytelling, lobbying, demonstrations, interactive computing, across a variety of infrastructure such as trails, visitor centers, theatres, overlooks, roads, observation towers, and others, the interpretive human (not printed) guide is the key ingredient to engage people, especially birders, in place-based conservation. For more information visit http://www.jonkohl.com/publications/a-m/avoid-cuts.htm

Interpretación Involucra a Personas y Forja Relaciones con Lugares.

A menudo, los visitantes pasan por sitios naturales sin conectarse emocionalmente con ellos o sus recursos; los visitantes podrían buscar aves cuyas migraciones se consideran más importantes que cualquier lugar en particular, o quizá hayan visitado tantos lugares que en su experiencia todos estos sitios parecen uno mismo.

Esta presentación usará la interpretación y la fotografía para ilustrar, mediante ejemplos de observación de aves en las Américas, cómo la interpretación (tanto como la planificación y capacitación necesaria para que la interpretación pueda suceder) involucra a los visitantes y les alienta a participar en la conservación del lugar o sus recursos.

La interpretación - una estrategia de comunicación que forja relaciones emocionales e intelectuales entre las personas y los lugares para que ellas participen en la conservación de los sitios - construye relaciones mediante experiencias auténticas, personalizadas y basadas en sitios que idealmente transforman y dejan a los visitantes dispuestos a apoyar el área en el cumplimiento de sus objetivos de manejo: conservación, recaudación de fondos, educación, relaciones públicas, creación de grupos de apoyo. A la vez reduce notablemente la posibilidad de que la interpretación sea abandonada cuando el presupuesto del sitio quede corto.

Aunque la interpretación emplea muchos medios tal como la rotulación, materiales impresos, exposiciones, videos, arte, relatos, cabildeo, demostraciones, computación interactiva, mediante una variedad de infraestructura tal como senderos, centros de visitantes, teatros, miradores, caminos, torres de observación y otros, la interpretación personal con un guía (no impresa) es el ingrediente clave para involucrar a las personas, especialmente a los observadores de aves, en la conservación. Para mayor información, visite http://www.jonkohl.com/publications/a-m/avoid-cuts.htm

Komar°, O.

The Important Bird Area (IBA) Network in El Salvador, and a Proposal for In-situ Conservation into the Future. Oliver Komar, Programa de Ciencias para la Conservación SALVANATURA., San Salvador, El Salvador. okomar@salvanatura.org.

During 2007, BirdLife International, SalvaNATURA, and the Ministry of Environment and Natural Resources completed the proposal for Important Bird Areas in El Salvador, with 21 areas identified. Most of these areas were selected for presenting a significant proportion of the biome-indicator bird community for the Pacific Arid Slope. Several were also selected for having significant proportions of the bird communities for two endemic bird areas: the Northern Central American highlands and the Northern Central American Pacific slope.

Two areas were selected for presenting wintering populations of the endangered Golden-cheeked Warbler (*Dendroica chrysoparia*). In order to promote future bird conservation in these areas, we propose a permanent training program for the local conservation groups who work within the areas. Some larger IBAs may have several local conservation groups active within the IBA. The training program would potentially address issues of site monitoring, conservation planning and strategies, and institutional governance, designed to maximize the effectiveness of the local conservation groups at protecting the IBAs and their birds.

Kookº, D.

Using Citizen Science and Nest Boxes for Lewis's Woodpecker Conservation in Ponderosa Pine Habitat in Central Oregon. Diane Kook, East Cascades Bird Conservancy, Bend, Oregon. doiseau@aol.com

Lewis's Woodpecker is considered a high priority species for conservation by nearly every bird conservation assessment in its range, including being a Partners in Flight Species of Continental Importance. In response to declining populations of Lewis's Woodpeckers in a 17-year old burn near Bend, Oregon, volunteers of the East Cascades Bird Conservancy attempted a nest box program for the species in 2002, despite no known record of this species ever using nest boxes. After a series of adaptive modifications to the nest boxes and their placement, significant nesting occurred in 2006 with the use of 7 of 16 nest boxes and in 2007 with 16 of 25 nest boxes successfully fledging young. This presentation will emphasize not only the success of the project and the potential use of nest boxes as a tool for Lewis's Woodpecker conservation, but the role citizen scientists can play in support of bird conservation.

Kosidowski°, K.

Birds and Coffee, Making the Connection: Consumer Activism through the Northwest Shade Coffee Campaign. Kristen Kosidowski, Seattle Audubon, Seattle, WA. USA. kristenk@seattleaudubon.org

Seattle Audubon's Northwest Shade Coffee Campaign has spent more than a decade increasing consumer demand for shade-grown coffee in efforts to protect forested coffee plantations which provide migratory bird habitat across much of Latin America. The Campaign has explored the complex interests of the coffee industry, coffee drinkers, coffee farmers and now certification programs to create a clear message that shade matters. In 2008, the Campaign will refine a buyer's guide tool to promote certifications that support shade.

Las Aves y el Café, Haciendo la Conexión: Activismo de Consumo a Través de la Campaña Noroeste del Café Cultivado Bajo Sombra.

La Campaña Noroeste del Café Cultivado Bajo Sombra de la Sociedad Audubon de Seattle ha pasado más de una década incrementando la demanda del consumidor para el café cultivado en la sombra como un esfuerzo para proteger las plantaciones de café forestales que proveen un hábitat para aves migratorias a través de todo Latino América. La Campaña ha explorado los intereses complejos de la industria del café, de los consumidores del café, de los cultivadores del café y ahora los programas de certificación para crear un mensaje claro que la sombra sí importa. En el 2008, la Campaña refinará una herramienta *guia al consumidor* para promover las certificaciones que apoyan a la sombra.

Kostecke°, R.; Cimprich, D.; Summers, S.

Experimental Cessation of Cowbird Management at Fort Hood Military Reservation, Texas/El Paro Experimental de la Eliminación de *Molothrus ater* en la Reservación Militar de Fort Hood en Tejas. Richard Kostecke, TNC, Fort Hood, TX; Cimprich, D., TNC, Fort Hood, TX; Summers, S., TNC, Fort Hood, TX. rkostecke@tnc.org.

Because of intensive management, the Black-capped Vireo (*Vireo atricapilla*) population at Fort Hood Military Reservation, Texas, has increased and the cowbird (*Molothrus ater*) population has decreased to the point that per-capita risk of cowbird parasitism may now be low enough for the vireo population to sustain itself in the absence of cowbird management (trapping and shooting). To test this assumption, we stopped trapping and shooting cowbirds on the west side of Fort Hood in 2006 while continuing to trap and shoot cowbirds on the east side. During 1997–2005, prior to the experiment, parasitism frequency did not differ between the east (3.8%) and west (5.4%) sides of Fort Hood. After initiation of the experiment, parasitism frequency was greater on the unmanaged west side (7.9% in 2006 and 13.7% in 2007) than on the managed east side (1.5% in 2006 and 4.4% in 2007%). Although parasitism is trending upward on the unmanaged west side, it is still at a sustainable level for the vireo population. Data from additional years will be needed to determine whether parasitism frequency will peak at a sustainable level and whether the long-term threat of cowbird parasitism to Fort Hood's vireos has really diminished.

Kozma°, J. M.

Nest-site Attributes and Reproductive Success of White-headed and Hairy Woodpeckers along the East-slope Cascades of Washington State. Jeffrey M. Kozma, Yakama Nation, Toppenish, WA. jeffk@yakama.com.

Primary cavity excavators serve as keystone species because their abandoned cavities are utilized by other species for nesting, denning, and roosting. Understanding the habitat re-

quirements of primary excavators is necessary to conserve their populations. I studied nest site selection and reproductive success of White-headed and Hairy Woodpeckers within managed and fire salvaged stands in the ponderosa pine zone along the east-slope Cascade Mountains. These species differed in their choice of snags for nesting. Hairy Woodpeckers used firmer snags and located their cavities higher. White-headed Woodpeckers tended to locate their cavities lower and selected snags in the most advanced stages of decay. Mayfield nest success estimates were nearly identical, but White-headed Woodpeckers fledged significantly fewer young. Only 55% of eggs laid by White-headed Woodpeckers resulted in fledged young compared to 71% of eggs laid by Hairy Woodpeckers. Managed stands may be lower quality habitat for White-headed Woodpeckers since predation rates and clutch size do not account for the differences I observed in egg success. Abandoned cavities excavated by these two species are used almost exclusively by Western Bluebirds. Declines in their densities could have significant adverse impacts on populations of Western Bluebirds. The major conservation challenges associated with ponderosa pine habitat in this area is increasing the number of snags retained and increasing the old-growth component of ponderosa pine within stands managed for timber production.

Krohnke°, B.; Greenfield, P., Campbell, I.

Linking Bird Tourism to Conservation in the Tropics. Paul Greenfield, Mindo Cloudforest Foundation (MCF), Quito, Ecuador; Krohnke, B., MCF, Ibarra, Ecuador; Campbell, I., MCF, Quito, Ecuador. mindocloudforest@yahoo.com.

In early 2002 MCF began its work on South America´s first birding trail which is now led by a community based non-profit corporation that is bringing together national, provincial, municipal and parish governments to develop this pilot project which should eventually be replicated in various habitats around the country. This "*Ecoruta el Paseo del Quinde*" project is the keystone of the "National Strategy for the Management and Sustainable Development of Avitourism in Ecuador", written by MCF and published by the Ecuadorian Ministry of Tourism in 2006.

In this and other work we have seen that only when biodiversity is perceived as a valuable resource and marketable commodity by its true custodians will sustainable protection of these essential ecosystems be achieved. This basic belief leads MCF to try to get local individuals and communities involved in different possibilities: inspirational conservation alternatives; economy-boosting conservation alternatives; and participative conservation alternatives. This multi-faceted approach has great potential and includes birding-tourism, habitat purchase, sale of environmental services and community based business.

Vinculando el Aviturismo y la Conservación en el Trópico.

Al comienzo del año 2002 MCF inició la creación de la primera ruta eco-escénica para la observación de las aves de Suramérica, la misma que ahora es liderada por una corporación sin fines de lucro con sus bases en las comunidades vecinas de la ruta. Este proyecto "Ecoruta el Paseo del Quinde" ha logrado juntar representantes gubernamentales nacionales, provinciales, municipales y parroquiales y se espera replicarlo en varios hábitats en el país. Este proyecto piloto es la pieza clave de la "Estrategia Nacional para el Manejo y el Desarrollo Sostenible del Aviturismo en el Ecuador", escrita por MCF y publicada por el Ministerio de Turismo en el año, 2006.

En este trabajo y en otras actividades relacionadas hemos visto que solamente cuando la biodiversidad es apreciada como un recurso rentable que produce beneficios tangibles para personas, lograremos un nivel de protección sostenible de estos ecosistemas esenciales. Entonces, MCF intenta involucrar individuos y comunidades locales en diferentes posibilidades: alternativas de conservación que inspiran, Alternativas de conservación que empujan la economía, y alternativas de conservación participativas. Este "método" con múltiples facetas tiene bastante potencial e incluye el aviturismo, la compra de hábitat, la venta de servicios ambientales y la formación de empresas comunitarias.

Kuvlesky, Jr.°, W. P.

Session Summary. William P. Kuvlesky, Jr., CKWRI, Kingsville, TX. william.kuvlesky@tamuk.edu

The session began by summarizing the potential impacts of wind farm development of the Lower Gulf Coast of Texas on migratory and resident bird species. Research results are variable and indicate that Impacts on birds range from minimal to significant, some bird species may be more vulnerable than others and that there is a clear need for additional BACI research, particularly in regions critical to migratory species. The second and third presentations highlighted the importance of stop-over habitats to migratory bird and suggested how wind farm development could impact gamebirds populations respectively. Results from an ongoing research project focused on identifying important habitats and the impacts of weather on migratory birds on the Lower Gulf Coast were also presented. Representative of the wind development industry and private landowners provided perspectives on the pros and cons of wind energy development on the Lower Gulf Coast. Policy needs and developments as well as outreach necessities were discussed. Finally, research needs were highlighted and suggestions were provided relative to potential research hypotheses and experimental designs.

Kuvlesky, Jr.°, W. P.; Morrison, M. L.

The Impacts of Wind Farms on Bird Populations: A Summary of our Current Knowledge. William P. Kuvlesky, Jr., CKWRI, Kingsville, TX; Morrison, M.L., TAMU, College Station, TX. william.kuvlesky@tamuk.edu

Wind farm energy development is a reality on the Lower Gulf Coast of Texas. Two large multi-turbine developments are currently under construction on private land several miles from the Laguna Madre. Wind farm development is touted as an environmentally friendly because it represents a source of clean energy. Nevertheless, siting extensive wind farm developments along the Lower Gulf Coast of Texas has become a concern because the Lower Gulf Coast of Texas represents critical habitat for tens of millions of migratory birds that either winter on the Lower Gulf Coast or use the area as stop-over habitat. Moreover, many resident species occur in the area that utilize habitat resources to fulfill annual life history requirements. Numerous federal and state threatened or endangered species also occur on the Lower Gulf Coast that is being targeted for development. Little published research is available that has quantified the impact of wind farm development on migratory and resident bird species. Most studies that have been published represent research from areas that are less critical to migratory bird species. This presentation will summarize the impacts of wind farm development on birds from published and grey literature from around the world. We will also provide recommendations that address important research questions, as well as emphasize the need for BACI experimental designs where wind farms will be developed on the Lower Gulf Coast of Texas.

Lambert°, D.; McFarland, K. P.

Conservation Applications of a Bicknell's Thrush Distribution Model Built from Monitoring Data. J. Daniel Lambert, Vermont Center for Ecostudies and ABC, Norwich, VT; McFarland, K.P., VCE, Norwich, VT; dlambert@-abcbirds.org.

Bicknell's Thrush (*Catharus bicknelli*) is a Partners In Flight Watch List species that breeds in the Catskill, Adirondack and Appalachian Mountains of the northeastern U.S., with scattered populations in southeastern Canada. It nests in balsam fir (*Abies balsamea*)-red spruce (*Picea rubens*) forests primarily above 900 m. We used mountain bird monitoring data to create and validate a GIS model of the species' distribution in New York, Vermont, New Hampshire, and Maine. The model identifies potential habitat as conifer forest above an elevation threshold that decreases as latitude increases (elevation = -81.63 * latitude + 4474.9 m). Land trusts, government agencies, and private landowners use the model to guide stewardship of sensitive mountain ecosystems. Applications include: identification of land protection priorities, delineation of Important Bird Areas, timber management planning, and design and assessment of proposals for wind power and ski area development. We have also used the model to simulate effects of future climate change on Bicknell's Thrush habitat, comparing high- and low-carbon pathways. Although dramatic reductions are forecast under both emissions scenarios, efforts to limit burning of fossil fuels are expected to delay and mute the impact on Bicknell's Thrush and other high-elevation fir-spruce specialists in the Northeast.

Aplicaciones de Conservación de un Modelo de Distribucion de *Catharus bicknelli* Construido con Datos de Monitoreo.

El zorzal *Catharus bicknelli* es una especie de la Lista de Atención Especial de Compañeros en Vuelo (Watch List of Partners in Flight, PIF por sus siglas en inglés) que anida en las montañas Catskill, Adirondack y Apalaches en el noreste de los Estados Unidos, con poblaciones dispersas en el sureste de Canadá. Anida en bosques de oyamel (*Abies balsamea*)-abeto rojo (*Picea rubens*), principalmente arriba de los 900 m. Utilizamos datos de monitoreo de aves de montaña para crear y validar un modelo de SIG para la distribución de la especie en New York, Vermont, New Hampshire y Maine. El modelo identifica el hábitat potencial como bosque de coníferas arriba de un límite de altura y decrece conforme la latitud se incrementa (altura=-81.63*latitud+4474.9 m). Fideicomisos de terrenos, agencias de gobierno y propietarios privados usan este modelo como guía para la administración de ecosistemas montanos frágiles. Sus aplicaciones incluyen: La identificación de prioridades de protección de tierras, la demarcación de Áreas de Importancia para la Conservación de las Aves, la planeación del manejo forestal, y la designación y evaluación de propuestas para desarrollo de energía eólica y áreas para esquiar. También hemos utilizado este modelo para simular los efectos del cambio climático en el hábitat del zorzal, comparándolo con flujos de carbono altos y bajos. Aunque en ambos escenarios de emisiones se prevén reducciones drásticas, se espera que los esfuerzos para limitar el uso de combustibles fósiles retrasen o supriman el impacto en este zorzal y otras aves especialistas en bosques de oyamel-abeto en el noreste.

Lambert°, J. D.; Rosenberg, K. V.; Pashley, D. N.; Dettmers, R.; Hodgman, T. P.; Brown, S.; Schmidt, S. ; Parsons, K.

Practical Approaches to Coordinated Bird Monitoring: Experiences from the Northeast. J. Daniel Lambert, ABC, Norwich, VT; Rosenberg, K.V., CLO, Ithaca, NY; Pashley, D.N., ABC, The Plains, VA; Dettmers, R., USFWS, Hadley, MA; Hodgman, T.P., Maine DFW, Bangor, ME; Brewer, G.L., DNR, Annapolis, MD; Brown, S., Schmidt, S., and Parsons, K., Manomet Center for Conservation Sciences, Manomet, MA; dlambert@abcbirds.org.

Bird monitoring has played an important role in bird conservation-planning in the northeastern U.S., providing essential information on distribution, abundance, and population trends. Some monitoring initiatives have also quantified habitat associations and avian responses to management actions and environmental change. Because of their potential to advance bird conservation, monitoring programs have proliferated in recent decades. However, lack of coordination has limited the effectiveness of bird monitoring. *A Framework for Coordinated Bird Monitoring in the Northeast* offers principles, tools, and procedures to strengthen the scientific basis for northeastern bird conservation. The goals of the framework are modeled after those contained in the North American Bird Conservation Initiative report, *Opportunities for Improving Avian Monitoring*. This talk will highlight practical approaches taken by state, federal, and non-governmental organizations in the Northeast to align resources and expertise behind shared objectives. Key steps in the coordination process include: 1) synthesize information on monitoring programs; 2) establish collaborations among biologists and statisticians; 3) identify management issues; 4) define clear conservation and monitoring objectives; 5) develop a regionally coordinated and peer-reviewed survey design and protocol; 6) build a unified database; and 7) implement surveys.

Enfoques prácticos para coordinar el monitoreo de aves: Experiencias del noreste

El monitoreo de aves ha jugado un papel importante en la planeación de la conservación de las aves en el noreste de los Estados Unidos, proveyendo información esencial sobre la distribución, abundancia y tendencias poblacionales. Algunas iniciativas de monitoreo también han cuantificado los hábitats y su respuesta a acciones de manejo y cambio ambiental. Los programas de monitoreo han proliferado en décadas recientes por su potencial para hacer avanzar la conservación de las aves. Sin embargo, la falta de coordinación ha limitado su efectividad. El *Marco de Referencia para la Coordinación del Monitoreo de Aves en el Noreste* ofrece principios, herramientas y procedimientos para fortalecer la base científica de la conservación de las aves en esta region. Las metas del marco de referencia fueron creadas a partir de los contenidos en el reporte de la Iniciativa para la Conservación de las Aves de Norteamérica, *Oportunidades para Mejorar el Monitoreo de Aves*. Esta presentación hará énfasis en enfoques prácticos adoptados por agencias federales, estatales y organizaciones no-gubernamentales en el noreste para allegarse recursos y experiencia en apoyo a objetivos compartidos. Los pasos clave en este proceso de coordinación incluyen: (1) La síntesis de información de programas de monitoreo; (2) Establecimiento de colaboraciones entre biólogos y estadísticos; (3) Identificación de temas de manejo; (4) Definición de objetivos claros de monitoreo y conservación; (5) Desarrollo de un sistema regionalmente coordinado con diseños y protocolos evaluados por expertos; (6) Construir una base de datos unificada; y (7) Implementar los muestreos.

Laskowski°, H.; Knutson, M.; Sutherland, T.; Lor, S.

Developing Biological Monitoring Programs and Data Management Tools to Address Information Needs at Multiple Spatial Scales. Harold Laskowski, USFWS, Milton, DE; Knutson, M., USFWS, La Crosse WI; Sutherland, T., USFWS, La Crosse, WI; Lor, S., USFWS, La Crosse WI. Harold - Laskowski@fws.gov.

National Wildlife Refuge (NWR) managers require biological monitoring data at both the large landscape and local scale for support of management decisions. Biological monitoring data collected at large landscapes are necessary to identify significant resource contributions and management objectives. While similar data collected at the local refuge scale is critical to evaluate achievement of objectives and the effectiveness of alternative management treatments. Ideally, local refuge data will contribute to information and prioritization of species at the larger landscape scales.

To affect refuge efficiency in meeting these data needs, a NWR Biological Monitoring Team has been created to coordinate the development of monitoring tools required by numerous refuges. This team is working with refuges and Partners to identify monitoring priorities, appropriate sample designs to address management questions, and develop databases that allow for the efficient analysis and sharing of information at multiple spatial scales. We identify several challenges in meeting the information needs of numerous refuges and coordinating efforts with Partners with varying objectives.

Desarrollo de Programas de Monitoreo Biológico y Herramientas de Manejo de Datos para Atender las Necesidades de Información a múltiples Escalas Espaciales.

Los administradores de Refugios Nacionales de Vida Silvestre en EE.UU. (NWR) requieren datos de monitoreo biológico a gran escala paisajista tanto como a escala local para apoyar decisiones de manejo. Datos de monitoreo biológico recolectados a escala grande de paisajes son necesarios para identificar contribuciones de recursos significativas y objetivos de manejo, mientras también es crítico recolectar datos similares a escala local de refugio para evaluar el cumplimiento de objetivos y la efectividad de tratamientos de manejo alterno. Idealmente, los datos locales de refugio contribuirán a información y prioridad de especies a escalas grandes de paisaje.

Para afectar la eficiencia de un refugio en cumplir estas necesidades de datos, se ha creado un Equipo de Monitoreo Biológico del NWR para coordinar el desarrollo de herramientas de monitoreo requeridas por los varios refugios. Este equipo esta trabajando con refugios y socios para identificar prioridades de monitoreo, diseñar muestreos apropiados para atender preguntas de manejo, y desarrollar bases de datos que permitan un análisis eficiente e intercambio de información a múltiples escalas espaciales. Identificamos aquí varios desafíos en atender las necesidades de información de numerosos refugios y los esfuerzos de coordinación entre socios que tienen objetivos diferentes.

Laurent°, E. J.; McKerrow, A.; Collazo, J. A.

Current and Future Availability of Environmental Data for Predicting the Spatial Distribution of Bird Populations. Edward J. Laurent, NCSU, Raleigh, NC; McKerrow, A., NCSU, Raleigh, NC; Collazo, J., USGS, Raleigh, NC. Ed Laurent-@ncsu.edu

Predictions of bird species occurrences, densities and population rates are typically dependent on environmental data. These data include remotely sensed imagery. They may also include field data such as measurements of snow depth and tree basal area. Field data are sometimes interpolated to estimate values between sampled points. Interpolation methods typically assume a continuous gradient of change over space and are therefore most appropriate for estimating fine scale variations across a relatively homogeneous area (e.g., density within a forest stand) or broad scale descriptions without sharp spatial transitions (e.g., temperature, rainfall). Field data may also be used to guide the classification of remotely sensed imagery for extrapolating continuous (e.g., vegetation productivity) and categorical (e.g., land cover) landscape descriptions. Land cover and its derivatives (e.g., patch size, distance to edge) are probably the most commonly used to predict the spatial distribution of bird populations. We discuss the availability and common uses of remotely sensed imagery and interpolated data for predicting the spatial distribution of bird populations. We highlight newly available datasets and existing ones with strong but overlooked potential for advancing the science of predictions. In particular, we describe projects under development and new satellite technology and their potential for predicting the impact of land use and climate changes on bird populations.

Disponibilidad Presente y Futura de Datos Ambientales para Predicir la Distribucion Especial de Poblaciones de Aves.

Las prediciones de ubicaciones de aves, densidades y tasas demograficas tipicamente dependen de datos ambientales. Dichos datos incluyen imágenes remotas. Los mismos tambien pueden incluir datos de campo tales como medidas de profundidad de nieve o area basal de arboles. Los datos de campo a veces son interpolados para estimar valores entre puntos de muestreo. Metodos de interpolacion tipicamente presumen que hay un gradiente continuo de cambio a traves del espacio, y por ende, apropiado para estimar variaciones a escalas pequenas en areas homogeneas (e.g., densidad dentro de un rodal de bosque) o descripciones a grande escala sin transiciones espaciales demarcadas (e.g., temperatura, precipitación). Datos de campo tambien podrian utilizarse para regir la clasificacion de imágenes remotas para extrapolar a descripciones paisajistas continuas (e.g., productividad vegetativa) o categoricas (e.g., covertura terrestre). Mapas de covertura terrestre y sus derivados (e.g., tamano del predio, distancia a borde) son probablemente los mas utilizados para predecir la distribución espacial de aves. Nosotros discutiremos sobre la disponibilidad y usos comunes de imágenes remotas y datos interpolados para predecir la distribución espacial de poblaciones de aves. Nosotros resaltaremos los nuevos cuerpos de datos disponibles, y los existentes que son lo suficientemente buenos pero ignorados, para adelantar la ciencia de predicciones. En particular, nosotros describimos proyectos en vias de desarrollo y nueva tecnología asi como su potencial para predecir el posible impacto que cambios en uso de terrenos y climatologicos puedan tener sobre poblaciones de aves.

Leavelle*, K; Galvez-Aguilera, X; Chavez-Ramirez, F.

Status and Habitat Associations of the Blue-headed Quail-dove (*Starnoenas cyanocephala*) in Ciego de Avila, Cuba. Karen Leavelle, University of Nebraska-Lincoln, USA; Galvez-Aguilera, X., Empresa para la Protección de Flora y Fauna, Havana, Cuba; Chavez-Ramirez, F., Platte River Whooping Crane Maintenance Trust, NE., USA, kleavelle@-whoopingcrane.org

The Blue-headed Quail-dove (*Starnoenas cyanocephala*) is a Cuban endemic which is considered rare and in danger of extinction according to the World Conservation Union (IUCN 2004). This study examines quail-dove occupancy and habitat associations in a semi-deciduous forest in one of Cuba's newest and largest protected area reserve systems El Gran Humedal del Norte de Ciego de Avila. Occupancy is estimated at ~45% in a 2500ha plot and preliminary results from a habitat model suggest that quail-dove presence is determined by a complex suite of vegetation parameters such as a minimum distance to water, limestone rock outcroppings and specific fruiting trees, principally (*Oxandra lanceolata*). This study officially reports this species in

the Gran Humedal and will provide a first population estimate determined from the % occupancy in the study area. It will also takes wider look at potential population areas of *S. cyanocephala* in this north-central region of Cuba.

Lee°, C.

Audubon's International Alliances Inter-organizational Learning Exchange Program and Engaging Communities in Conservation Action, Craig Lee, National Audubon Society, Washington, DC. craiglee@audubon.org.

Latin America and the Caribbean, with over 3500 species of birds, possess by far the richest bird diversity in the world. Of these species, 320 species are critically threatened or endangered, and many migratory birds that breed in North America rely on the ever-shrinking tropical habitats that are their home during the northern winter. With 100 years of experience in conservation throughout North America and its vast network of volunteers, professionals, and supporters, Audubon is uniquely positioned to play a leadership role in catalyzing and supporting the conservation of IBAs throughout the western hemisphere. Moreover, as the BirdLife partner for North America, Audubon has joined a network of like-minded reputable conservation organizations further expanding the available experience, knowledge and possibilities toward biodiversity conservation. The key now, is to ensure that this wealth of conservation experience is shared, communicated and utilized to its full potential. Audubon's newly formed International Alliances Program plans to facilitate this collaboration through a variety of approaches. These would include inter-organizational learning exchanges, building community knowledge and environmental understanding through grassroots conservation campaigns, community engagement in conservation action through citizen science programs and providing practical tools to help achieve conservation actions and outcomes throughout the hemisphere.

LeFebre°, M.

Connecting Bird Conservation Across the Curriculum. Marc LeFebre, Council for Environmental Education/Flying WILD, Houston, TX. MarcLcee@aol.com

Flying WILD introduces students to bird conservation through standards-based classroom activities and environmental stewardship projects. Flying WILD Bird Festivals provide a highly visible and practical forum for schools to work closely with conservation organizations, community groups, and businesses involved in bird conservation efforts. Prior to these events, students conduct research and service-learning projects in preparation to teach their communities about the importance of birds and bird conservation.

Leininger, T. D.; Wilson, R.; DeSteven, D.; Hamel°, P. B.

Bottomland Hardwood Forest Past and Future: Conservation, Management and Agricultural Policies. Ted Leininger, USFS, Stoneville, MS; Wilson, R., USFWS, Jackson, MS; De Steven, D., USFS, Stoneville, MS; Hamel, P., USFS, Stoneville, MS. tleininger@fs.fed.us

Rusty Blackbird (*Euphagus carolinus*) populations have declined perhaps 95% in the recent past, creating legitimate concern that the species may become endangered. During the nonbreeding period, the species occurs predominantly in southern forested wetland habitats, with concentrations in the Mississippi Alluvial Valley (MAV) and in the southeastern Coastal Plain of the Carolinas and Georgia. Both these regions have been sites of extensive conversion of forested wetland and bottomland hardwood forests to other, often agricultural, land uses. We review the history of forested wetlands in the southeastern US and estimate the proportion of habitats suitable to this species that may have been lost to other land uses. A majority of area formerly covered in forested wetlands in these regions is today devoted to landuses incompatible with Rusty Blackbird habitat. Especially in the MAV, land use, even some forested land uses, may change annually with commodity price fluctuations. In recent years, in response to changing economic conditions for agriculture and some other land uses, Wetland Reserve and Conservation Reserve Programs have converted marginal agricultural lands back to forested wetlands. These conversions as well as current interest in afforestation and forest restoration devoted to carbon sequestration suggest a future increase in Rusty Blackbird nonbreeding habitat.

Pasado, Presente, y Futuro de los Bosques de Tierras Bajas: Conservación, Manejo, y Políticas Agrarias.

Las poblaciones del icterido *Euphagus carolinus* han disminuido un 95% en tiempos recientes lo que ha generado inquietud sobre si la especie puede estar en peligro de extinción. Durante el periodo no reproductivo la especie ocurre mayormente en bosques húmedos de tierras bajas dentro del valle del Rió Mississippi y en la planicie costera de Georgia y las Carolinas. Ambas regiones han sufrido extensamente la transformación de sus bosques húmedos de tierras bajas a otros usos, mayormente agrícolas. Para este trabajo revisamos la historia de los bosques pantanosos del sureste de los EEUU y estimamos la proporción de hábitat adecuado para la especie que puede haberse perdido debido a usos alternos del terreno. La mayoría de lo que fue bosque húmedo de tierra baja hoy es hábitat que *Euphagus carolinus* no puede utilizar. En la región del valle del Mississippi el uso de la tierra, aun en áreas forestadas, puede cambiar rápidamente de un año para otro junto con la fluctuación en precios de los productos agrícolas. En años recientes y en respuesta a cambios en condiciones económicas para terrenos agrícolas así como otros usos, los programas de Reservas de Humedales (WRP, por sus siglas en ingles) y Reservas de Conservación (CRP, por sus siglas en ingles) han transformado áreas de poco valor para la agricultura en bosques pantanosos. Esta transformación así como el interés en aforestación y restauración de bosques sugiere un aumento en hábitat de invierno para el icterido *Euphagus carolinus*.

Lepage°, D.

The Politics of Data Sharing: How to Address some of the Concerns Related to Publishing Bird Biodiversity Data in Distributed Networks. Denis Lepage, Bird Studies Canada, Ontario. dlepage@bsc-eoc.org

One of the goals of the Avian Knowledge Network is to aggregate bird monitoring datasets into a common "virtual database" that can be used to easily access data in a standardized format from any project, in order to address various conservation, scientific and public outreach needs. These datasets are being managed by institutions ranging from governments, NGO's, researchers as well as private individuals and industries. Several factors may prevent these institutions from fully participating in the AKN, apart from purely practical considerations such as a lack of resources to organize and publish data. Those often include concerns about providing sensitive or private information (species at risk, land ownership, etc.), trademark issues (recognition of their contribution in publications), concerns about potential misuse of the data or concerns over loss of potential

revenues. Bird Studies Canada manages data from several dozens of bird monitoring programs. Because almost all of those are done as partnerships with other institutions, we need to be very aware of the politics regarding the publication and use of those datasets. The data access portal currently in development at the BSC AKN node, which I will introduce in my presentation, should help ensuring a balance between facilitating access to data and addressing the many of the concerns that this entails.

Les Aspects Politiques du Partage des Données. Comment Répondre à Certaines des Réticences Reliées à la Distribution de Données sur la Biodiversité Aviaire dans les Réseaux Décentralisés de Données.

Un des buts du Réseau de connaissance aviaire (RCA) est de regrouper les données de suivi des populations d'oiseaux dans une même « base de données » virtuelle qui permet d'accéder facilement aux données de façon à répondre aux divers besoins de conservation, aux besoins des chercheurs et à ceux du public. Ces données sont gérées par des institutions incluant des gouvernements, des ONG, des chercheurs, des individus ou des compagnies privées. Plusieurs facteurs peuvent empêcher ces groupes de participer pleinement dans le RCA, mis à part les considérations purement techniques tel que le manque de ressources. Ces facteurs incluent souvent des craintes reliées au partage des données sensibles (espèces menacées, propriété foncière, etc.), au manque de reconnaissance de leur contribution (ex. dans les publications), aux risques de mauvais usage des données ou à la perte de revenus potentiels. Études d'Oiseaux Canada gère plusieurs douzaines de bases de données sur le suivi des populations d'oiseaux. Étant donné que presque tous ces projets sont réalisés en partenariat avec d'autres organismes, nous devons être très attentifs quant aux aspects politiques reliés au partage et à l'utilisation de ces données. Le portail d'accès de données présentement en développement par ÉOC en tant que site du RCA devrait assurer une balance entre la facilitation de l'accès aux données et plusieurs des réticences que cela comporte.

Lepage°, D.

Data Organization in the Avian Knowledge Network. Denis Lepage, Bird Studies Canada, Ontario. dlepage@bsc-eoc.org

The Avian Knowledge Network (AKN) contains tens of millions of individual records that come from a large variety of heterogeneous datasets from bird monitoring projects. One of the goals of the AKN is to aggregate those datasets into a common "virtual database" that can be used to easily access data from any project to address various conservation, scientific and public outreach needs. One of the main challenges is to ensure that those various datasets can be described in a consistent format, known as an "exchange schema". Fortunately, a vast majority of the data elements recorded by individual bird monitoring projects are shared and it is therefore possible to use a relatively limited number of common fields to describe almost any type of bird monitoring data. The Bird Monitoring Data Exchange (BMDE) schema provides a standardized framework for describing bird monitoring datasets of the AKN. The schema consists of a list of field elements and formatting rules for exchanging data among users of the network. In this presentation, I will introduce some of the properties and challenges associated with the BMDE schema from the perspective of the data providers, the nodes of the AKN, as well as the end users.

L'Organisation des Données dans le Réseau de Connaissance Aviaire.

Le Réseau de connaissance aviaire (RCA) contient des millions d'observations provenant d'une grande variété de projets de suivi des populations d'oiseaux. Un des buts du RCA est de regrouper ces données dans une même « base de données » virtuelle qui permet d'accéder facilement aux données de ces différents projets de façon à répondre aux divers besoins de conservation, aux besoins des chercheurs et à ceux du public. Un des principaux défis consiste à s'assurer que les divers projets peuvent être décrits dans un même format, connu sous le nom de Schéma d'échange de données. Heureusement, la grande majorité des éléments de données recueillis par les différents projets sont les mêmes, et il est possible de décrire presque l'ensemble des données de suivi des populations d'oiseaux avec un nombre relativement limité de champs communs. Le Schéma d'échange des données d'oiseaux (SEDO) fourni un cadre standard pour décrire les bases de données du RCA. Le schéma consiste en une liste de d'éléments et de règles pour échanger les données entre les utilisateurs du réseau. Dans ma présentation, je vais introduire quelques-unes des propriétés et défis associés avec le SEDO, selon la perspective des fournisseurs de données et celle des utilisateurs.

Levesque°, A.

Le Festival des Oiseaux Migrateurs en Guadeloupe: Un Outil Pour la Sensibilisation et l'Éducation du Public à l'Environnement. Anthony Levesque, AMAZONA, Le Gosier, Guadeloupe (F.W.I.); Duzont, F., AMAZONA, Le Gosier, Guadeloupe (F.W.I.). anthony.levesque@-wanadoo.fr

AMAZONA est une association type loi 1901 créée en 1998 dont l'objet est l'observation, l'étude et la protection des oiseaux. De 1998 à 2005, l'association comptait seulement une vingtaine d'adhérents. A partir de 2006, la création de notre site internet mais surtout l'organisation de deux festivals annuels sur les oiseaux, a permis de multiplier le nombre d'adhérents par plus de 20. En effet, en 2006 nous avons notamment organisé le premier Festival des Oiseaux Migrateurs qui a amené 80 nouveaux adhérents au sein de l'association. En 2007, le même festival à de nouveau permis à l'association de compter 70 adhérents supplémentaires. En deux ans, le Festival des Oiseaux Migrateurs a donc apporté 150 nouveaux membres à l'association.

Parmi ces adhérents, et c'est nouveau en Guadeloupe, de nombreux familles antillaises. Certains de ces nouveaux adhérents s'investissent déjà dans la vie de l'association : de nouveaux bagueurs, une avocate, un graphiste, etc.

Le Festival des Oiseaux Migrateurs se déroule généralement sur un week-end avec un diaporama, une sortie de terrain et une tenue de stand. C'est cette dernière activité qui permet d'aller à la rencontre du grand public et de le sensibiliser à notre action de sauvegarde des oiseaux migrateurs. Ce festival est donc pour nous un formidable outil de protection des oiseaux en Guadeloupe.

International Migratory Bird Day (IMBD) in Guadeloupe: A Tool for Public Education and Awareness.

AMAZONA is a non-profit organization created in 1998 whose objective is the observation, study and protection of birds. From 1998 to 2005, the organization only had 20 members. A website created in 2006 plus the organization of two annual festivals on birds increased the membership twenty-fold. The first IMBD event was held in 2006. Eighty new members joined following the event. In 2007, seventy new members were attracted as a result of the event. Over the course of the two years, over 150 new members were recruited through the IMBD. We noted an increase of local Antillean families. Some of the new mem-

bers are already getting involved in the organization in other ways. For example, some are participating as bird banders, a lawyer is donating time to support advocacy work, and a graphic artist is donating her skills to prepare educational materials. The IMBD is held over a weekend and features a slide show, a field trip, and a display. The display raised public awareness of the need for protection of migratory birds. This festival is a powerful tool for bird protection in Guadeloupe.

Levinº, J.

Wind Power and Birds: Lessons Learned from the Altamont Pass Wind Resource Area about Siting, Mitigation and the Need for Long-Term Conservation and Resource Planning. Julia Levin, National Audubon Society, Kensington, CA. jlevin@audubon.org.

The Altamont Pass Wind Resource Area is one of the oldest and largest wind farms in the United States. It is located just east of San Francisco Bay amidst the most dense concentration of golden eagles in the world and along a major migratory pathway. The wind turbines at Altamont kill more than 1,000 raptors each year, including eagles, kestrels, hawks and owls. Replacing older, less-efficient turbines on part of the Altamont Pass appears to benefit most, but not all, of the raptor species. After reaching a settlement with local Audubon chapters and the County government, the wind companies are also removing the most dangerous turbines and shutting down during the most important migratory season. Preliminary data suggests that these measures may not be sufficient to reduce bird mortality by 50 percent, as required by the settlement agreement. The wind companies, permitting agencies and wildlife experts are also working on a multi-species conservation plan to provide a framework for long-term conservation and adaptive management, the first of its kind for a large wind resource area. The legal and scientific hurdles are substantial, but all the parties hope to turn Altamont into a model of successful mitigation and adaptive management.

Lezama-López°, M.

Domestic trade in Psitticids in Nicaragua: Social and economic Implications. Martín Lezama-López. Managua, Nicaragua. nicapinol2002@yahoo.com.

From time immemorial, the use of psittacids in Nicaragua has had major importance. Psittacids have been taken from the wild for a variety of purposes, including ceremonial, ornamental, and as pets, and in the Caribbean region of Nicaragua they may be used as food. Historically and traditionally, the trade has focused on a few species. The Scarlet and Military Macaws, and Yellow-naped Amazon have been the most preferred species. Over time, five centuries after the colonization of Latin America these patterns of using birds have changed little. Changes have come in response to decreasing of prices and the increasing strictness of controls and authorities in popular commercial centers like the Eastern Market, at traffic lights and on major highways. In view of the controls and restrictions, the trade in birds has increased. Data from wildlife seizures show that high volumes (more than 60%) of animals seized in this way are psitticines. The species most frequently encountered is the Red-fronted Amazon (Amazona autumnalis) and the White-fronted Amazon (Amazona albifrons). However, large-bodies species like the Scarlet Macaw disappeared between 2005 and 2006 from the northern Caribbean region of Nicaragua. The owners of captured animals have indicated that these macaws are now being captured in Honduras. Poor rural people in agricultural areas near the border are offering wild-caught birds to smugglers and unscrupulous merchants, who seek new alternatives to commit environmental crimes.

Tráfico Doméstico de Psitácidos en Nicaragua; Implicaciones Sociales y Económicas.

Desde tiempos inmemoriales, el consumo de psitácidos en el país ha sido importante en términos de individuos capturados. Estos se tomaban de la naturaleza con fines diversos, entre ellos ceremoniales, ornamental, mascotas. En el Caribe se conoce de usos alimenticios. Este consumo histórico y tradicional ha sido preferencial sobre pocas especies. Grandes lapas rojas, verdes y lora nuca amarilla fueron especies de mayor preferencia. Con el tiempo, tras cinco siglos desde la colonia los patrones de consumo de estas aves entre la población han variado poco. Las variaciones se relacionan con la disminución de la oferta y a medidas cada vez más restrictivas de las autoridades en centros comerciales populares como el mercado Oriental, semáforos y otros puntos como carreteras principales. En vista de los controles y restricciones, el tráfico se ha incrementado. Datos de decomisos de fauna reflejan que altos volúmenes (más del 60%) de animales decomisados están formados por psitácidos. Las especies más frecuentemente encontradas son lora frente roja (*Amazona autumnalis*) y lora frente blanca (*A. albifrons*). Sin embargo, especies de gran tamaño como lapa roja han sido decomisadas entre 2005 y 2006 en el Caribe norte. Los dueños de los animales incautados señalan que las lapas son tomadas de Honduras. Campesinos pobres en zonas de frontera agrícola son los que ofrecen aves capturadas de la naturaleza a contrabandistas e inescrupulosos comerciantes, éstos buscan nuevas alternativas o se exponen a delitos ambientales.

Liguori°, S.; Burruss, J.

Protecting Birds While Powering America: An Overview of Efforts by the Electric Utility Industry to Reduce Bird Mortality and Improve Power Reliability. Sherry Liguori, PacifiCorp, Salt Lake City, UT; Burruss, J., PacifiCorp, Salt Lake City, UT. sherry.liguori@pacificorp.com.

For over 30 years, the electric utility industry and the US Fish and Wildlife Service (USFWS) have worked together to reduce avian mortality associated with power lines. The Avian Power Line Interaction Committee (APLIC) was formed in the late 1980s to address sandhill crane collisions with power lines. Since then, APLIC has expanded its focus to include bird electrocutions and problem nests on power line structures. APLIC members include rural electric cooperatives, federal power companies, investor-owned utilities, the Edison Electric Institute, the Electric Power Research Institute, the Rural Utilities Services, and the USFWS. In 2005, APLIC and USFWS released Avian Protection Plan (APP) Guidelines. These voluntary Guidelines offer a "toolbox" of resources from which utilities can design programs to protect migratory birds while enhancing service reliability. In 2006, APLIC released the 4th edition of its guidance document, *Suggested Practices for Avian Protection on Power Lines*, which details how birds are electrocuted, which species are at risk, applicable regulations, problem power line designs and recommended solutions, and nest management practices. Avian Protection Plans developed by electric utilities have been effective in reducing avian mortality, improving service reliability, reducing long-term costs, enhancing environmental stewardship, and improving communication with regulatory agencies. Such plans can serve as models for other industries that may "take" migratory birds.

Linder°, E. L.; Bailey, R. B.; Berk, J. B.; Johnson, R. J. ; Rollins, M. C. R.; Gibbs, S. G.

Influence of Habitat Structure on the Foraging Ecology of Acadian Flycatchers. Eric Linder, UT, Brownsville, TN; Bailey, R., Huntingdon College, Montgomery, AL; Berk, J., MSU, Starkville, MS; Johnson, R., UW, Madison, WI; Clare, M., Rollins University, Rollins, MT; Gibbs, S., MSU, Starkville, MS. Eric.Linder@UTB.edu

In 2006 we observed Acadian Flycatchers (Empidonax virescens) foraging within a managed and unmanaged bottomland hardwood forest (BHF) at Noxubee National Wildlife Refuge in east-central Mississippi. All observed flycathers had active nests, increasing their foraging activities. Two of the study plots resided in BHF that was managed for waterfowl utilizing a strategy known as green-tree reservoir (GTR) management. As a result of GTR management, there are distinctive differences in the vegetative structure of the forests. We recorded the time and number of foraging forays in three distinct vegetative layers (shrub, mid-canopy, canopy) as well as the relative insect abundance at each layer. To estimate insect abundance, we placed adhesive cards in each vertical layer and subsequently quantified the relative abundance of captured insects. Prey was not evenly distributed across forest types nor vertically. Flycatchers were not able to forage optimally in the GTR, likely due to the lack of perches in the lower shrub layer, despite it having the most prey. In BHF foraging effort was more reflective of the relative abundance of prey across vertical layers. It does not appear that sub-optimal foraging in GTRs results in fewer young fledged, but we could not ascertain if the quality (e.g. weight) was negatively impacted by the apparent increase in foraging effort.

Lindsay°, D. L.; Barr, K. R.; Lance, R. F.; Leberg, P. L.

Habitat Fragmentation and Genetic Diversity of an Endangered, Migratory Songbird, the Golden-cheeked Warbler (*Dendroica chrysoparia*). Denise Lindsay, US Army ERDC, Vicksburg, MS; Barr, K., ULL, Lafayette, LA; Lance, R., US Army ERDC, Vicksburg, MS; Leberg, P., ULL, Lafayette, LA. denise.l.lindsay@erdc.usace.army.mil.

Loss and fragmentation of breeding habitat are among the greatest threats to the long-term survival of the endangered golden-cheeked warbler (*Dendroica chrysoparia*). In order to determine whether protected areas are sufficient to sustain genetically diverse populations, we assessed the genetic diversity of golden-cheeked warblers across their breeding range in central Texas and evaluated the role of habitat loss and fragmentation in shaping the population structure of the species. We determined genotypes across 9 microsatellite loci of 109 individuals from 7 sites spread throughout the breeding range of the golden-cheeked warbler. No differences in the amount of genetic diversity among sample sites and no statistically significant evidence of a recent population bottleneck were found. Differences in allele frequencies were highly significant among sample sites. The sampled sites do not appear to represent isolated lineages requiring protection as separate management units, although the amount of current gene flow is insufficient to prevent some genetic differentiation. Measures of genetic differentiation were negatively associated with habitat connectivity and the percentage of forest cover between sample sites, and positively associated with geographic distance and the percentage of agricultural land between sites. The northernmost sample site was the most genetically differentiated, and was isolated from other sample sites by agricultural lands, suggesting that habitat fragmentation might be limiting dispersal in this forest-dwelling passerine.

Fragmentación de Hábitat y Diversidad Genética de un Pájaro Cantor Puesto en Peligro y Migratorio, el Mosquitero de Dorado-cheeked (chrysoparia de Dendroica).

La pérdida y fragmentación de criar el hábitat está entre las amenazas más grandes a la sobrevivencia a largo plazo del mosquitero puesto en peligro de dorado-cheeked (chrysoparia de Dendroica). Para determinar si áreas protegidas son suficientes para sostener a poblaciones genéticamente diversas, nosotros valoramos la diversidad genética de mosquiteros de dorado-cheeked a través de su gama que cría en Tejas central y evaluó el papel de la pérdida del hábitat y fragmentación a formar la estructura de población de la especie. Determinamos genotipos a través de 9 localidades de microsatellite de 109 individuos de 7 sitios esparcen a través de la gama que cría del mosquitero de dorado-cheeked. Ningunas diferencias en la cantidad de la diversidad genética entre sitios de muestra y ninguna evidencia estadísticamente significativa de un embotellamiento reciente de población fue encontrada. Las diferencias en frecuencias de allele fueron sumamente significativas entre sitios de muestra. El probó los sitios no aparece representar los linajes aislados que requiere la protección separa como las unidades de la administración, aunque la cantidad del flujo actual de gene sea insuficiente prevenir alguna diferenciación genética. Las medidas de la diferenciación genética fueron asociadas negativamente con conectividad de hábitat y el porcentaje de la cubierta del bosque entre sitios de muestra, y positivamente asociados con la distancia geográfica y el porcentaje de terreno entre sitios. El sitio más septentrional de la muestra fue el la mayoría del genéticamente diferenciado, y fue aislado de otros sitios de la muestra por terrenos, sugiriendo que esa fragmentación del hábitat quizás esté limitando la dispersión en este passerine de bosque-morada.

Liner°, J. M.; Burger, M. F.; Halperin, J.

Approaches to Identifying IBAs in New York, the Second Time. Jillian M. Liner, Audubon NY, Ithaca, NY; Burger, M.F., Audubon NY, Ithaca, NY; Halperin, J., USFS, Mt Vernon, WA. jliner@audubon.org.

The goal of NY's Important Bird Areas (IBA) program is to identify sites that are most important to birds and to protect and promote proper management of those sites for the long-term conservation of birds and their habitats. NY's IBA program identified 127 sites in 1997 and completed a second round of site identifications in 2005. The goals of the second round were to fully align the state IBA criteria with the global IBA criteria, identify new sites, and re-evaluate existing IBAs to confirm that they continued to meet IBA criteria. Revisions made to the IBA criteria included addressing WatchList species under the "species at risk" criterion and revising the "habitat" criterion to align it with the global "biome-restricted species" criterion. For this latter change, we used a GIS-based spatial analysis to identify potential IBAs for habitat-species assemblages of birds that are regional responsibilities. The analysis identified the largest, least fragmented patches of habitat supporting the highest richness of "responsibility" species, with the greatest chance of long-term protection. Potential IBAs identified in this manner were ground-truthed to confirm species presence. Of the 50 potential IBAs identified through the analysis, 35 were existing IBAs and 15 were new sites. In total 172 sites were reviewed during the second round, many of them under multiple criteria, of which 136 were approved IBAs.

Luscier*, J.; Greenberg, R.; Powell, L. L.; Matsuoka, S.

Beyond BBS and CBC: Approaches to Surveying and Monitoring Rusty Blackbird Populations. Jason Luscier, UA, Fayetteville, AR; Greenberg, R., Smithsonian Migratory Bird Center, Washington, D.C.; Powell, L., UM, Orono, ME.; Matsuoka, S., USFWS, Anchorage, AK. jluscie@uark.edu.

Currently, a major gap in our knowledge of Rusty Blackbird populations revolves around a lack in an unbiased estimator. Though the Christmas Bird Count (CBC) and the Breeding Bird Survey (BBS) have been useful for evaluating general population trends, BBSs only occur in a small portion of Rusty Blackbird's breeding range and CBCs are biased towards easily accessible areas and/or larger, conspicuous flocks. We need better estimators for monitoring future populations. Occupancy estimation incorporates heterogeneous detectabilities, provides useful habitat-use information, is not data hungry, and data collection is based on presence/absence surveys that require reduced effort. We surveyed presence/absence of Rusty Blackbirds 8 times at 79 sites and 10 times at 115 sites during the winters of 2006 and 2007, respectively, in the Lower Mississippi Alluvial Valley of Arkansas, Mississippi, and Louisiana. Occupancy estimates (SE) were 0.88 (0.08) during 2006 and 0.61 (0.07) during 2007. In New England and Alaska, we tested occupancy surveys to evaluate breeding habitat use and to provide a tool for surveying breeding blackbirds in a variety of wetland landscapes in the boreal forest. Presence/absence surveys are ideal for implementing citizen science data collection, providing a good base for developing long-term monitoring of Rusty Blackbirds on both the wintering and breeding grounds.

Macchia°, E. T.; Bednarz, J. C.; Grippo, R. S.

Towers, Birds, and the Citizens Who Study Them. Erin T. Macchia, Arkansas State University, Jonesboro, AR; Bednarz, J.C., Arkansas State University, Jonesboro, AR; Grippo, R.S., Arkansas State University, Jonesboro, AR. erin.macchia@-smail.astate.edu .

Mass avian collision events at communication towers have been documented in ornithological literature since the late 1940s. More than five decades later, the tower industry, biologists and concerned citizens continue to search for ways to mitigate the effects of towers on migrating birds. This presentation examines the power of the public to advocate for and to participate in a state-funded project that addresses this important issue in avian conservation. In July 2003, mention of an American Bird Conservancy report summarizing the numbers of birds lost at communication towers on a public listserv for Arkansas birders generated discussion of the need for more research. Shortly thereafter, the Arkansas Audubon Society Trust sent a letter urging the Arkansas Game and Fish Commission to fund a landscape-scale research project on the effects of communication tower attributes on migrating birds throughout the state. In 2004, the Arkansas Communication Tower Research Project received 3 years of funding to support one graduate student and a small army of tower searchers to conduct surveys for avian victims of tower collisions. Citizens of Arkansas, ranging in age from 16 to 60+ continued their show of support by searching selected towers for birds. Participation of citizen scientists on tower projects in Arkansas and elsewhere is providing important new information that may yield insight to a possible solution for a >50-year-old international conservation issue.

Torres de Comunicación, Aves y Co-investigadores Locales.

Por más de cinco décadas, la industria constructora de torres, biólogos y ciudadanos han buscado formas de mitigar los efectos de las torres de comunicación sobre aves migratorias. Esta presentación evalúa la acción ciudadana para respaldar y participar en proyectos financiados por el estado para aportar a la conservación de aves. En julio de 2003, American Bird Conservancy presentó un reporte en la lista electrónica de observadores de aves de Arkansas, sintetizando el número de aves perdido en torres de comunicación; este generó discusión sobre la necesidad de desarrollar más investigación. Poco después, Arkansas Audubon Society Trust envió una carta solicitando a Arkansas Game and Fish Comission financiar un proyecto a escala de paisaje sobre los efectos de los atributos de las torres de comunicación sobre aves migratorias a lo largo del estado. En el 2004, el proyecto de Investigación en Torres de Comunicación en Arkansas fue financiado por 3 años para respaldar un estudiante de doctorado y un pequeño ejercito de"investigadores de torres" para realizar censos de aves víctimas de colisión con torres. Nativos de Arkansas entre los 16 y 60 años mostraron su apoyo buscando aves en determinadas torres. La participación de co-investigadores locales en el proyecto en Arkansas y otros lugares, está arrojando nueva información que puede dar indicios de una posible solución a un problema de conservación de más de 50 años.

MacGregor-Fors*, I.; Morales-Pérez, L.; Schondube, J. E.

Migration to the City: Effects of Urbanization on Neotropical Migrant Bird Cmmunities. Ian MacGregor-Fors, UNAM, CIEco, Mexico; Morales-Pérez, L., UNAM, CIEco, Mexico; Schondube, J.E., UNAM, CIEco, Mexico. ian@oikos.unam.mx

Urbanization is a process that replaces natural habitats with human-made structures. Following urbanization, urban habitats are planted with few tree species, driving cities to simplified vegetation structure, and therefore having a negative effect on wildlife. Thus, only a few bird species are capable of surviving within urban systems. Unfortunately, research on urban bird ecology is limited to breeding birds of temperate, upland forests of the US, Canada, and Europe. On this research, we explored community structure and diversity patterns for migrant species that use urban habitats within the Morelia city for wintering. Based on the spatial distribution of migrant species, we found three patterns of how migrant species use urban habitats: (1) urban exploiter species; (2) urban adaptable species; and (3) urban avoider species.

Macías, C.; Vidal°, R. M.

Multinational Initiative to Preserve the Golden-cheeked Warbler and its Habitat in the Neotropics. Claudia Macías; Vidal R.M., Pronatura Sur, Mexico. cmacias@pronatura-chiapas.org ,

Golden-cheeked Warbler (GCWA) is a globally threatened migratory bird that spends the winter in the Central American Pine-Oak Forest Ecoregion which also has been listed as a critically threatened region. At the current present only 25% of the total original forest extensions of 103,842km², form Nicaragua to Chiapas in Mexico remains. The Ecoregion provides habitat to a number of threatened and endemic species, and 255 spp of migratory birds. Near 8.3% of the Ecoregion is under protection. Threats are unsustainable forestry practices, forest fires, and extraction of forestry products, such as timber and firewood.In 2003 eight organizations from, Mexico, Guatemala, El Salvador and Nicaragua formed the Alliance for the Conservation of Mesoamerican Pine-Oak Forest and its birds, having the GCWA as a flagship species. The alliance worked in the harmonization of monitoring methodologies. Maps of the wintering distribution of the species were produced. In 2006 the Alliance developed a

Conservation Plan. The portafolio of sites identified 308 plots for 1 millon ha conservation and management goal. Most of the sites needed are in Honduras (116) Guatemala (103) and Mexico (68).Actions identified in the plan are, sustainable forestry management, integrated fire management, protected surface increase, and Alliance strengthening. Plan is currently under implementation phase in 5 countries.This represents one the few initiatives born in the Neotropics that promote sustainable management and conservation in an area of great cultural and ethnic richness, but also of high poverty rates. The initiative demonstrates that a neotropical species,(GCWA) can bring together the interest for priority native ecosystems in the south, increasing funding, collaboration and participation.

MacKinnon de Montes°, B.

Generating Bird and Habitat Conservation through Economic Incentives… Experiences from the Yucatan Peninsula, Mexico. Barbara MacKinnon de Montes, Yucatán, México. barbaramackinnonde@gmail.com.

Training of bird guides in rural communities where there is already a history of international tourism activity, has resulted in providing local motivation for protecting habitat important to birds and other fauna. The CAPY bird conservation program of Amigos de Sian Ka'an carried out 2-3 day workshops in 13 communities in the states of Yucatan and Quintana Roo, (8 located in national protected areas), involving 250 fishermen and Maya peasants between 1999 and 2005. The results have been outstanding in that the list of professional-level, regional bird guides has grown from 3 to 18, with a list of 45 local guides in the process of increasing their skills. Along with the above has been the creation of an alternative source of income generated in the communities; aggressive and timely reports to local authorities of damage caused to ecosystems; action taken against those who capture birds for commercialization; assistance in educational workshops aimed at children in their communities; active participation in solving garbage disposal problems; and most of all, an obvious increase in the self-esteem of individuals who never completed their schooling. A publication resulted from the experiences of the workshops and is available free of charge in English and Spanish on the internet, entitled "Manual for Training Bird Guides in Rural Communities".

Fomentando la Conservación de las Aves y su Hábitat a Través de Incentivos Económicos… Experiencias en la Península de Yucatán.

Capacitando guías de aves en comunidades rurales en áreas donde ya existe movimiento de turismo internacional, ha resultado en motivar la conservación de hábitat importante a las aves y otra fauna. El programa de conservación de las aves, CAPY, de Amigos de Sian Ka'an realizó talleres de 2 al 3 días en 13 comunidades en los estados de Yucatán y Quintana Roo, (8 de ellos en áreas naturales protegidas), involucrando la participación de 250 pescadores y campesinos maya entre 1999 y 2005. Los resultados están asombrosos en que una lista de guías de aves regionales al nivel profesional creció de 3 al 18, con una lista de 45 guías locales que están en desarrollo a diferentes niveles. En adición al anterior, se ha creado un alternativo económico dentro de las comunidades; están reportados daños a los ecosistemas en su momento y en forma activista; toman acción directa contra los que intentan a capturar aves para su comercialización; asistan en talleres educacionales dirigidos al niños en sus comunidades; participan activamente en buscar la solución a la basura; y aún más transcendente, aumentó el auto-estimo de los individuos que en su mayoría no cumplieron más que la primaria. Con las experiencias de los talleres, se publicó el "Manual para el desarrollo y capacitación de guías de aves" que esta disponible sin costo en inglés y español en el Internet.

Magniez°, J. M.

Woodland Restoration on the Sumter National Forest: Implications for Declining Bird Species. Jeffrey M. Magniez, USDA Forest Service, Union, SC. jmagniez@fs.fed.us

The Sumter National Forest (NF) is managing for grassland and shrub-scrub bird species through the landscape-scale restoration of woodland plant communities. Woodlands are open, park-like forests with relatively low tree densities of 25 to 60 percent forest cover and an understory dominated by native grasses and forbs. The driving force behind this work is the Indian Creek Wildlife Habitat Restoration Initiative, a cooperative partnership comprised of state and federal agencies, private landowners, and conservation organizations. Treatments call for the basal area of existing tree cover – primarily loblolly pine (*Pinus taeda*) – to be reduced from 150 ft^2/acre to 30-70 ft^2/acre, while native grasses and forbs are regenerated in the understory. These communities are maintained with frequent, low-intensity prescribed fire. Species targeted to benefit from restoration efforts are northern bobwhite (*Colinus virginianus*), Bachman's sparrow (*Aimophila aestivalis*), and loggerhead shrike (*Lanius ludovicianus*). These species have been declining precipitously not only on the Sumter NF but nationwide. In 2006 and 2007, point counts were conducted in the restoration area. Northern bobwhite were detected in very low numbers and Bachman's sparrow and loggerhead shrike were not detected at all. As more habitat is restored and the grass and forb component matures, these species are expected to increase their use of this plant community across the landscape. Point counts will continue to be used to monitor the effectiveness of woodland restoration on the Sumter NF.

Magpiong°, D.

The Academic and Developmental Benefits of Birding. Dave Magpiong, National Biodiversity Parks / Voorhees Township School District, Bellmawr, NJ. Dayvm@aol.com

A societal shift in awareness, attitude, and behavior towards bird conservation requires a general appreciation of avidiversity and an understanding of the factors that threaten it. In order to make this shift a reality, formal and non-formal educators must be able to demonstrate that bird education has a positive impact on its participants, especially our youth. This presentation will highlight the various domains of child and adolescent development that can be improved through the process of bird watching. By informing the public about these profound benefits of birding, educators will have the opportunity to bring critical knowledge of bird ecology, conservation concerns, and appropriate actions to a new, broader audience.

Un cambio en la sociedad en conciencia, actitud y comportamiento require una apreciación de la diversidad en la vida de los pájaros y el entendimiento de los facotres que los amenazan. Para que este cambio se haga realidad, educadores formales e informales deben poder demostrar que la instrucción sobres las aves tiene un impacto positivo a sus participantes, especialmente a la juventud. Esta presentación va augdizar las varias areas del desarollo del niño y del adolescente que se pueden mejorar atravez del proceso de parajeando. Además de infromale al publico del beneficio profundo de pajarear, educadores tendran la oportunidad de adquirir conocimientos de la ecología

de las aves, preocupaciones dela conservación y aplicar acciones a una nueva y más amplia audiencia.

Manville, IIº, A. M.

Turbines, Towers, Power Lines and Building Windows: Current Developments to Avoid and Minimize Impacts to Migratory Birds and Other Trust Resources. Albert M. Manville, II., USFWS, Arlington, VA. Albert_Manville@fws.gov

U.S. commercial wind energy development continues to grow exponentially under a varied regulatory and permitting arena. Steps to minimize direct and indirect impacts to birds and bats will be discussed, reviewing the USFWS's voluntary guidelines, a Federal Advisory Committee Act process whose members will recommend updates to that guidance, scientifically-valid measures currently available to reduce impacts, and research needs and gaps. Communication towers also continue to grow exponentially, with new concerns regarding bird impacts from both collisions and radiation. A nationwide cumulative impacts analysis, including research protocols to study both collisions and radiation effects at short and tall towers, will be discussed. Developments regarding the Federal Communications Commission's Notice of Proposed Rulemaking for towers and migratory birds will be reviewed. The electric utility industry, in collaboration with USFWS, recently developed the template for an Avian Protection Plan, and updated efforts to reduce electrocutions at power lines through the *2006 Suggested Practices* document. Current efforts to avoid and reduce collisions and electrocutions will be summarized. Building windows create 2 problems for migratory birds: light attraction and a bird's inability to perceive clear glass and its attraction to reflections. While the "lights out" program will be mentioned, the recent efforts of the Bird-Safe Glass initiative will be reviewed, including current research in the development of bird-safe glass and next steps in implementing the program. Commonalities among program efforts will be examined.

Marra°, P. P.

The Missing Link: Lessons from the Winter Ecology of the AmericanaRredstart. Peter P. Marra, Smithsonian Migratory Bird Center, Washington, D.C. marrap@si.edu

The stationary portion of the non-breeding period occupies the majority of the annual cycle for most bird species. Despite this fact, the majority of research on birds, especially migratory birds, has been conducted during the breeding season. Needed are additional studies from the non-breeding period as well as studies examining how periods of the annual cycle interact to drive fundamental biological processes such as population dynamics. Here, I use our long-term, detailed studies of the American redstart to illustrate how factors during winter drive both with season events as well as carry-over into subsequent migratory and breeding phases of the annual cycle. Specifically, I will show how winter habitat and food limitation first determine over-winter condition and spring departure schedules of individual redstarts. Then I show how declining physical condition and later spring departure influence survival probability during migration, natal dispersal and reproductive success. Thus, our results demonstrate that limiting factors during the winter period drive fundamental biological processes through complex seasonal interactions. We propose using these results from our long-term and detailed studies of the American redstart to help set data collection priorities for other migratory birds during the winter period, especially declining, threatened, or endangered species. Only through the identification of key ecological limiting factors –within the context of the entire annual cycle- will we be able to develop effective strategies for species conservation.

Martin°, B.; McCready, B.

The Nature Conservancy and Private Lands Bird Conservation in the Great Plains. Brian Martin, TNC, Helena, MT; McCready, B., TNC, Bainbridge Island, WA. bmartin@tnc.org.

The Nature Conservancy uses a variety of tools to prioritize the location and the strategies to be employed to conserve habitat and species in the Great Plains. While the Conservancy is perhaps best known for our ability to acquire critical tracts of land, over the past decade there has also been a focus on community-based conservation and using a variety of other tools to protect birds and their habitat on private lands. The presentation will provide examples of this work with partners at multiple locations in the Great Plains and provide a more in-depth example of an effort in Montana and North Dakota to improve habitat on private lands used by the piping plover. The project highlights staff and partner efforts to complete stewardship project that reduce artificial habitat used by avian and mammalian predators and improve habitat conditions through livestock grazing systems and prairie restoration.

Martinzez Leyva°, E.; Peresbarbosa Rojas, E.; Cruz Carretero, O.; Barr, J.; Chávez Domínguez, I.; Ramón Lara, G.; Rodríguez Meza, R.; Ferriz Domínguez, N.; Ruelas Inzunza, E.

Dynamics of Passerine Migration: Insights from a Banding Station in Coastal Veracruz, Mexico. Eduardo Martínez Leyva, Pronatura A. C. Veracruz MX; Rojas, E.P. Pronatura A. C. Veracruz MX; Carretero, O.C., Envirological Services, Inc., Albuquerque, NM.; Barr, J; Chávez Domínguez, I; Ramón Lara, G.; Rodríguez Meza, R.; Ferriz Domínguez, N.; and Ruelas Inzunza, E. bichodemonte@gmail.com

Veracruz is well known as an important migratory flyway for an ample array of bird species. Of 734 species registered for Veracruz, 278 are winter residents or transients that use the different habitats in the state along their migratory routes.

One of Mexico's more biologically diverse states, it has also one of highest deforestation rates in the country. Because of this, it is necessary to understand the roll that habitat remnants play as stopover sites for migratory birds, and so make possible to focus conservation strategies on a more efficient way.

Since 1999, Pronatura Veracruz runs a bird banding station in a small coastal community named Playa Salinas. Data obtained here will offer to us an index of this habitat's value as stopover sites for migratory birds, and also for resident birds that depend on this ecosystem. To this date there is valuable data, like band recoveries and records of species new for the region and the state. The highest banding rates are those of *Empidonax minimus* and *Dendroica petechia*, while *Dendroica magnolia* is the species with the highest recovery rates, with some individuals being recaptured year after year, which denote certain site fidelity during migration.

Maslonek°, M.

A Corporate Campaign for Migratory Birds? Making the Shift Towards Collaboration with Industry. Marcia Maslonek, Wildlife Habitat Council, Silver Spring, MD. mmaslonek-@wildlifehc.org.

The role of the private landowner in conservation has become more critical in recent years, though recognized since the founding of wildlife management by Aldo Leopold. Corporations have historically been viewed as negative forces upon the environment, and subsequently most interactions with conservation organizations and agencies have occurred through litigation rather than collaboration. More recently, however, with the rise of the concept of "sustainability" within the business realm, a shift has emerged towards collaboration with industry. How to successfully accomplish this can be challenging at times, yet also rewarding. The Wildlife Habitat Council (WHC) celebrates 20 years of working proactively with corporations through voluntary habitat programs with employees and community on their own lands. WHC has 432 certified Wildlife at Work programs internationally, and 69 certified Corporate Lands for Learning program that utilize on-site habitat for place-based learning. WHC is relaunching the Corporate Campaign for Migratory Birds in 2008 to inspire industry to realize the importance of migratory bird stopovers, no matter how big or small, through habitat enhancement, education, and partnerships. By connecting several sites along a flyway, a company can illustrate how varying habitats combine to be part of a greater conservation effort to protect species on a landscape-level. Keys to successful industry engagement and pitfalls to avoid will be discussed on a case study basis.

Mattsson°, B. J.

Occupancy Modeling as a Framework for Designing Monitoring Programs: A Case Study on Streamside Songbird Communities in the Eastern Rivers and Mountains Network. Brady J. Mattsson. UG, Athens, GA. bjmatt@uga.edu.

Long-term avian monitoring programs are an integral component of bird conservation programs, such as those put forth by Partners in Flight. The goal is often to detect significant declines in populations or shifts in communities, which in turn lead to management actions. Identifying such changes over time requires concurrent quantification of species detectability. Otherwise, changes in encounter rates of certain species may simply reflect changes in detectability of those species, while disguising any population or community dynamics. Bird monitoring methodologies have traditionally either ignored detection biases or used distance sampling to account for imperfect detection of individual birds while estimating densities. Recent advances in occupancy modeling have led to a new approach for estimating dynamics of populations or communities while accounting for imperfect detection. Instead of requiring accurate distance estimation to acoustic signals emitted by birds, occupancy modeling requires replicate samples across time or space among which focal species can be assumed to be at equilibrium, i.e., no net immigration or emigration. I applied this technique to a long-term monitoring program in National Parks of the Eastern Rivers and Mountains Network. In particular, I modeled occupancy of multiple forest songbird species simultaneously while accounting for imperfect detection. This modeling approach provides a robust framework for long-term monitoring of individual bird species and entire communities.

Modelos de Ocupación Como Marco de Referencia Para el Diseño de Programas de Monitoreo: Un Estudio de Caso con Comunidades de Aves Canoras Riparias en la Red de Ríos y Montañas del Este.

Los programas de monitoreo de aves a largo plazo son un componente integral de los programas de conservación de aves, como los propuestos por Compañeros en Vuelo (Partners in Flight). Con frecuencia, la meta es detectar declines significativos en las poblaciones o cambios en las comunidades que pueden conducir a cambios en prácticas de manejo. Para identificar estos cambios a través del tiempo, se requieren cuantificaciones simultáneas de la detectabilidad de las especies. De otra manera, los cambios en las tasas de encuentro de ciertas especies podrían simplemente estar detectando cambios en su detectabilidad y a la vez encubriendo cambios poblacionales o la dinámica de la comunidad. Las metodologías de monitoreo de aves tradicionalmente han ignorado los sesgos de detección, utilizado el muestreo a distancia para ajustar la detección imperfecta de aves individuales mientras se estiman densidades. En vez de requerir estimaciones de distancia precisas a las señales acústicas emitidas por las aves, los modelos de ocupación requieren muestras réplica a lo largo del tiempo o el espacio con especies focales que pueden ser asumidas en equilibrio, e.g., sin emigración o inmigración neta. Apliqué esta técnica a un programa de monitoreo a largo plazo de los Parques Nacionales de la Red de Ríos y Montañas del Este. En particular, modelé simultáneamente la ocupación de varias especies de aves canoras de bosque mientras cuantificaba la detección imperfecta. Este enfoque de modelado provee un marco de referencia robusto para el monitoreo a largo plazo para aves individuales y comunidades enteras.

Mattsson°, B. J.; Cooper, R. J.

Louisiana Waterthrushes as Indicators of Stream Ecosystem Integrity. Brady J. Mattsson, University of Georgia, Athens, GA; Cooper, R. J., University of Georgia, Athens, GA. bjmatt@uga.edu

Benthic stream animals, in particular macroinvertebrates, are good indicators of water quality, but sampling can be laborious to obtain accurate indices of biotic integrity. Developing more cost-effective methods could improve existing monitoring protocols. We evaluated the usefulness of a stream-dependent songbird, the Louisiana Waterthrush (waterthrush, *Seiurus motacilla*) and the Environmental Protection Agency Visual Habitat Assessment (EPA VHA) as indicators of the macrobenthos community in headwater streams of the Georgia Piedmont, U.S.A. We sampled macrobenthos, surveyed waterthrushes and measured habitat characteristics along 39 headwater reaches across 17 catchments ranging from forested to heavily urbanized or grazed by cattle. Of the indicators considered, waterthrush occupancy was best for predicting relative abundances of macrobenthic taxa, while the EPA VHA was best for predicting Ephemeroptera–Plecoptera–Trichoptera (EPT) richness. Individual components of EPA VHA scores were much less useful as indicators of EPT richness and % EPT when compared with the total score. Waterthrushes were found along streams with higher % EPT, a lower Family Biotic Index (FBI) values and greater macrobenthos biomass. While macroinvertebrates remain one of the most direct indicators of stream water quality, stream bird surveys and reach-scale habitat assessments can serve as cost-effective indicators of benthic macroinvertebrate communities. Using stream-dependent birds as an early warning signal for degradation of stream biotic integrity could improve the efficacy of catchment monitoring programs in detecting and identifying perturbations within the catchment.

El Chipe-suelero Arroyero Como Indicador de la Integridad del Ecosistema Arroyero.

Los animales de la zona béntica del arroyo y en particular macroinvertebrados, son buenos indicadores de la calidad del agua, pero el muestreo para obtener índices exactos de la integridad biótica puede ser laborioso. El desarrollo de métodos más rentables podría mejorar los protocolos de monitoreo actuales. Evaluamos la utilidad de un paserino dependiente del ecosistema arroyero, el Chipe-suelero Arroyero (*Seiurus motacilla*) y el ''Environmental Protection Agency Visual Habitat Assessment'' (EPA VHA, Calificación Visual de Habitat de la Agencia para la Protección del Medio Ambiente) como indicadores de la comunidad macrobéntica en los manantiales de la Georgia Piedmont. Coleccionamos material béntico, examinamos las aves y medimos características del habitat a lo largo de 39 manantiales a través de 17 cuencas hidrográficas que varían de áreas boscosas o densamente pobladas a zonas de pasto para el ganado. De entre los factores considerados, la presencia del Chipe-suelero Arroyero era el mejor para predecir la abundancia relativa de especies macrobénticas, mientras que el EPA VHA era el mejor para estimar la riqueza de Efemeróptera-Plecóptera-Tricóptera (EPT). Los componentes individuales de la calificación EPA VHA eran mucho menos útiles como indicadores de la riqueza de EPT y de porcentaje de EPT en comparación con la calificación total. Los Chipes-suelero Arroyeros fueron encontrados a lo largo de arroyos del más alto porcentaje de EPT, de valores inferiores de Indice Biótico de Familias (FBI) y de mayor biomasa macrobéntica. Mientras que los macroinvertebrados siguen siendo uno de los indicadores más directos de la calidad de agua del arroyo, los monitoreos de aves arroyeras y las calificaciones de habitat de gran escala pueden servir de indicadores rentables de la comunidad béntica de macroinvertebrados. Utilizando las aves dependientes de arroyos como señal de una detección temprana de la degradación de la integridad biótica del habitat podría mejorar la eficacia de progamas de monitoreo de cuencas en la detección e identificación de perturbaciones dentro de la zona hidrográfica.

McCready°, B.; Martin, B.; Mehlman, D.

Lesson's from The Nature's Conservancy Prairie Wings Program. Opportunities and Challenges for Grassland Conservation in the Americas. Bob McCready; Martin,.B.; Mehlman, D. bmccready@tnc.org

In 2000, The Nature Conservancy launched the Prairie Wings program to address the declining birds of the short, mixed, and arid grasslands of North America. During that time, the program led efforts to identify a network key landscapes across five Bird Conservation Regions (BCRs) that are critical to this guild of birds. Guided by these priority Grassland Conservation Priority Areas (GCPAs), The Nature Conservancy has worked with a wide array of partner organizations from the Prairies of Canada, across the western Great Plains of the U.S., to the grasslands of the Chihuahuan Desert in Mexico. Program activities have included the development of multiple- site conservation plans, land and easement acquisition, land management outreach, large-scale bird monitoring projects, targeted grassland bird research, and many others. A key principle for Prairie Wings has been the need to collaborate and coordinate research, planning, and conservation activities across the entire range of the short and mixedgrass obligate birds of North America. Given the success of this range-wide grassland conservation program, we support the development of additional large-scale efforts that address the range wide needs of birds in general, and a project focused on those birds that breed in the tallgrass prairie BCRs of the Canada and the U.S. and winter as far south as the southern cone countries of South America. Key factors of success for such a project include the presence of an organization that assumes the responsibility to lead the effort, the active participation of a large number of governmental and non-governmental organizations, and the availability of sufficient funding.

McCreedy°, C. L.; Weigand, J.

Monitoring Potential Off-highway Vehicle Impacts on Breeding and Migrant Songbirds of Sonoran Desert Fabaceous Woodland Habitats. Chris McCreedy, PRBO, Petaluma, CA; Weigand, J., BLM, Sacramento, CA. cmccreedy@prbo.org.

We monitored resident and migrant songbird populations found in Fabaceous wash-woodland habitats of the Lower Colorado River Valley from 2003-2007, in order to assess potential off-highway vehicle impacts to the habitat and its avian community. Though Fabaceous woodland only accounts for roughly five percent of the area of the Lower Colorado section of the Sonoran Desert, it hosts ninety percent of its birds[1]. Little contemporary ecological data including information on bird species occurrence, productivity, and abundance exist for this habitat. In addition, off-highway vehicle use has increased dramatically in the Sonoran and Mojave Deserts, yet its impacts on the Sonoran and Mojave Deserts' bird communities of the ecosystem remain unknown. Here we describe several discoveries of unknown populations of listed species in the region, we provide a preliminary look into the factors most responsible for annual reproductive success for birds of Fabaceous wash-woodland habitats, and we discuss potential impacts of unregulated off-highway vehicle use on Fabaceous wash-woodland.

McKenzie°, D.

Northern Bobwhite Regional Population Objectives. Don McKenzie, Wildlife Management Institute, Ward, AR. wmidm@centurytel.net

The Northern Bobwhite Conservation Initiative (NBCI), now more than five years old, has stimulated major progress in community mobilization, habitat implementation and scientific conceptualization. The first revision of the NBCI is underway, providing a prime opportunity to advance the entire framework and content. One of the major issues is improving the national and regional population goals to be more meaningful, relevant and technically sound. The original NBCI vision was to restore bobwhite populations to 1980 levels, as indicated by the Breeding Bird Survey. This vision, a somewhat arbitrary benchmark intended as the starting point for the entire planning process rangewide, strives for populations that are not just stable or viable, but that are capable of sustaining harvest rates increased to desirable levels. This vision was translated into regional and state population goals, originally measured by coveys to be added, but with no geospatial guidance provided. The revised NBCI likely will retain the conceptual 1980 vision, but will be translated as zones of relative density as the unit of measure, as depicted geospatially at regional and state levels. NBCI planning teams are being convened in BCRs, to grapple with matters of current versus 1980 population densities, potential population densities by land-use type, land-use trends, habitat triage, and integration with priority grassland birds.

McLachlan°, M. M.; Bishop, A.; Carter, M. F.

Estimated Accomplishments of the Conservation Reserve Program and the Wetlands Reserve Program toward Conservation Goals of Priority Mixed-grass Prairie Birds. Megan McLachlan, PLJV, Grand Island, NE; Bishop, A., USFWS, Grand Island, NE; Carter, M., PLJV, Lafayette, CO. megan.mclachlan-@pljv.org.

We present a Conservation Effects Assessment Project (CEAP), conducted in cooperation with Natural Resources Conservation Service and Farm Service Agency, which estimates the effects of the Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP) on priority bird species in the Mixed-grass Prairie Bird Conservation Region (BCR). Effects are estimated using four integrated components: (1) a four-state seamless landcover that identifies CRP and WRP in the context of other habitats, (2) bird densities and use-days that link birds to habitats, (3) bird population goals that determines how much is enough, and (4) a relational database that manages habitat acres, species to habitat linkages, population goals, and spatial model parameters. Results indicate that CRP in the BCR benefits at least 10 priority bird species including five songbirds, four game birds, and one raptor. The degree of benefit varies by species, geographic area, and CRP characteristics. To maximize benefits of CRP to birds we suggest that CRP be: (1) apposite to the local native ecosystem, (2) managed for priority species or species for which action will benefit multiple species, and (3) spatially targeted such as within a priority species' range or to maximize/connect large blocks of habitat. Analyses regarding the WRP portion of this project are not complete yet but will be presented.

Medler°, M., Wells, J. V.

Examining the Economic Impact of Boreal Birds in the United States. Matthew Medler, Boreal Songbird Initiative, Seattle, WA, Jeff Wells, Boreal Songbird Initiative, Seattle, WA. matthewmedler@borealbirds.org.

The 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation reported that 71 million Americans spent nearly $45 billion feeding, photographing, and observing wildlife in 2006. Birds were the most popular subject of such activities, with over 53 million participants feeding wild birds and nearly 48 million individuals observing birds. In 2003, the U.S. Fish & Wildlife Service produced an economic analysis of birding in the U.S. and estimated that 46 million birders spent nearly $32 billion on wildlife-watching in 2001, producing $85 billion in economic benefits, $13 billion in tax revenues, and more than 850,000 jobs. Spanning 1.5 billion acres of Canada and Alaska, North America's Boreal Forest region supports an estimated 1.65 to 3 billion breeding birds each year, including 30% of the continent's landbirds, 30% of shorebirds, and 38% of waterfowl. Supporting more than 40% of the breeding populations of 21 warbler species, as well as huge numbers of other migratory birds, Boreal Forest nesting grounds are largely responsible for the spring and fall migration spectacles experienced by millions of birders each year. The Boreal is also the source of U.S. winter feeder birds like Dark-eyed Junco and Common Redpoll that help produce more than $2 billion in annual bird food sales. Overall, we estimate that boreal birds account for at least $5 billion in annual expenditures by American bird enthusiasts.

Mehlman°, D.

Towards a Standardized Threats Taxonomy. David Mehlman, TNC, Albuquerque, NM. dmehlman@tnc.org.

A key factor that appears in most, if not all, species assessment protocols is some indication of threat. However, use of this factor is complicated by the lack of application of any form of standardized threats list or classification between different assessment protocols. One example of a consistent and unified application of threats is the Threats Taxonomy developed by the Conservation Measures Partnership (CMP). Use of such a standardized taxonomy facilitates conservation and species assessments by ensuring that all potential threats are considered and none are left out, helping different assessment projects communicate with each other, and providing an easy way to summarize or "roll up" assessments across different species groups or geographic areas. The CMP and IUCN now have a unified classification of direct threats which, though developed primarily for application to conservation sites, could be adapted for use in species assessments. This system classifies direct threats, defined as those that cause the destruction, degradation, or impairment of a species or natural process. As currently implemented, the system has three hierarchical levels, with 11 upper level primary classes, three to six pre-defined secondary classes within each primary class, and a tertiary level that is specified by the user for each site or taxon. Adoption of a common nomenclature and classification system such as this one in species assessment protocols will improve our ability to compare systems, exchange data, and communicate conservation priority levels to other interested parties.

Mehlman°, D.; Hamel, P. B.

Activities of El Grupo Ceruleo for Conservation of the Cerulean Warbler (*Dendroica cerulea*) in its Non-Breeding Range. David W. Mehlman, TNC, Albuquerque, NM; Hamel, P.B., USFS, Stoneville, MS. dmehlman@tnc.org.

El Grupo Ceruleo was formed in 2002 as one subcommittee of the Cerulean Warbler Technical Group assigned to work on non-breeding season conservation of this species of high concern. El Grupo has formed a broad coalition interested in this species in its non-U.S. range, emphasizing work in the South American "wintering" range. Activities included meetings of partners in 2003, 2005, 2006, and 2007 to assemble data, review progress, and develop preliminary workplans. Primary products include an extensive GIS model of the predicted distribution of the species in South America; development of a protocol to field-test and refine this model; implementation of surveys for new Cerulean locations in Bolivia, Peru, Ecuador, Colombia, and Venezuela; initial phases of demographic research; surveys for spring migration stopover sites in Belize, Guatemala, Honduras, and Mexico; and advice to USFWS and IUCN on status determinations. Members of El Grupo have also begun efforts to protect habitat for the warbler, such as the recently established Cerulean Warbler Reserve in Colombia. The group has also implemented an extensive outreach and education campaign in the coffee plantations of Colombia through the Colombian Coffee Growers Federation, which aims to educate local growers about the importance of their crops for migratory birds (including the Cerulean) while potentially adding value for their crops on the world market.

Mettke-Hofmann°, C.; Luscier, J. D.; Hofmann, G.; Hamel, P. B.; Greenberg, R.

From Urban Roosts to Bottomland Hardwoods: Critical Needs for Wintering Rusty Blackbirds. Claudia Mettke-Hofmann, Liverpool John Moores University, UK; Jason D. Luscier, UA, Fayetteville, AR; Gerhard Hofmann, Stoneville, MS; Paul B. Hamel, USFS, Stoneville, MS; Russell Greenberg, Smithsonian Migratory Bird Center, Washington, DC. C.C.Mettke-Hofmann@LJMU.ac.uk

In the Southeastern U.S., Rusty Blackbirds winter in landscapes containing bottomland hardwood forests, however these forests have undergone large scale conversion to agricultural land. We investigated habitat use of the species in its core winter range, the Lower Mississippi Alluvial Valley. Birds were captured at feeding locations in two consecutive years. Radio-transmitters were fitted to 27 of the 158 birds captured. Rusty Blackbirds consistently used three habitat types – bottomland hardwood forests, pecan orchards, and forest fragments along creeks. Young males were found more frequently than expected in forest fragments along creeks, old males in pecan orchards, and young and old females in forests. Females had lower indices of body condition than males, as did all birds foraging in forests compared to those foraging in other habitats. Complex interactions between body condition, habitat, age, sex, and time of season indicate that old males excluded less competitive age and sex classes (particularly females) from better quality feeding habitats. Birds feeding in forests exclusively selected afforested fields as night roosts, whereas birds feeding in orchards and forest fragments often gathered in large, mixed species night roosts in cities, particularly at the end of the winter season. We also surveyed presence/absence at 115 sites and found higher occupancy estimates for bottomland hardwood forests (mean [+- SE] 0.638 [0.146]) than agriculture fields (0.299 [0.120]). The results are discussed with respect to the suitability of alternative habitats for over-wintering, the population response to specific habitat features, the importance of forests for females, and implications to roosting in urban areas in mixed species flocks.

Metz°, S. A.; Zimmermann, B.

Reintroduction of Confiscated Psittacines as One Approach to the Illegal Wild Bird Trade in Indonesia. Stewart Metz, Bellevue, WA; Zimmerman, B., The Indonesian Parrot Project, Pope Valley, CA. parrotdoc@gmail .com

The continuing magnitude of the illegal trade in wild psittacines in Indonesia is perpetuated by a combination of a lack of awareness and pride in local villagers concerning their endemic flora, and a lack of training and facilities for government officials to manage confiscated parrots. To address the latter, an Avian Rehabilitation Center was built on Seram Island, in the Central "Moluccas" of Indonesia, in the forest just outside of Manusela National Park. Seram is the sole remaining habitat of the Salmon-crested cockatoo *Cacatua moluccensis* and the Purple-naped Lory *Lorius domicella*. Subsequently, virtually all psittacines confiscated in Central Maluku Province, or passing through its port on Ambon Island, have been turned over to the Center, where they are rehabilitated with the help of former bird trappers. Under highly selected conditions, some of these birds are returned to the forest following a "soft-release" protocol. With a disposition for confiscated birds now available, local officials have stepped up anti-smuggling operations. In addition, as part of an integrated program, the Indonesian Parrot Project leads eco-tours to Seram Island (also staffed by ex-trappers). Furthermore, we have initiated a Conservation-Awareness-Pride Program to induce a "paradigm shift" in the way Indonesian children think about the intrinsic value of birds and about bird trapping. Although only small numbers of confiscated parrots are being released, the main value of such a program may be to engender a lasting conservation awareness and interest in local peoples.

La magnitud continua del comercio ilegal de psitácidos en Indonesia es perpetuada por una combinación de falta de prevención y orgullo en los campesinos respecto a su flora endémica y a la falta de entrenamiento e instalaciones disponibles para que los oficiales del gobierno manejen los loros confiscados. Como para corroborar lo último, un Centro de Rehabilitación de Aves fue construido en la Isla de Seram, en el centro de las “Molucas”, Indonesia, en la selva adyacente y fuera del Parque Nacional de Manusela. Seram es el único hábitat remanente de la Cacatúa Crestada-salmón, *Cacatua moluccensis*, y del Lory de Nuca-púrpura, *Lorius domicella*. En consecuencia, virtualmente todos los psitácidos confiscados en la provincia central de Maluku, o en su puerto en la isla de Ambon, han sido llevados al Centro, donde ellos han sido rehabilitados con la ayuda de tramperos de aves retirados. Bajo condiciones muy especiales, algunas de estas aves han retornado a la selva siguiendo un “aligerado protocolo” de reintroducción. Con una disposición ahora disponible sobre las aves confiscadas, los oficiales locales llevan a cabo operaciones contra el contrabando. En adición, como parte de un programa integrado, El Proyecto de Loros de Indonesia conduce tours ecológicos a la Isla de Seram (el personal incluye tramperos de aves retirados). Además, nosotros hemos iniciado un Programa deConservación-Prevención-Orgullo para inducir un “cambio de paradigma”, de manera que los niños piensen sobre el valor innato de las aves y el efecto negative que resulta de capturarlas. Aunque solo pequeñas cantidades de son confiscadas los loros están siendo soltados. El principal valor de tal programa puede despertar en las gentes del lugar un interés duradero por la prevención y la conservación.

Millar°, N.

Ecotourism, Community Development, and Bird Conservation: How the Three Concepts Work Together in McAllen. Nancy Millar, McAllen Chamber of Commerce, McAllen, Texas. nmillar@mcallencvb.com.

For community government leaders to take bird conservation and ecotourism seriously, it is essential to prove the economic value. This is working in Texas’ McAllen and the Rio Grande Valley area, where an estimated 125,000 wildlife watchers, mostly birders, bring $125 million per year into the local economy and sustain 927 jobs in McAllen alone- 2,500 in the region. There are supporters of ecotourism at all levels of community structure, from federal to state to local, as well as private landowners, local environmental organizations, and other business people and artists. The benefits to the community are significant, and as the trend grows in popularity, the benefits naturally increase. Local leaders see the economic impact of nature tourists, and make the connection between benefiting from the money nature tourists bring in and the need for habitat preservation and restoration. These efforts also provide beautification and quality of life enrichment for residents, a positive community image and a real sense of community pride. Community health and education levels also profit- surprise benefits to many people. The key is to community buy-in is to emphasize and promote ecotourism’s economic opportunities.

Miller°, D. A.; Crawford, S. R.; Rich, T. D.; Kelling, S. T.

Web Mapping for Bird Conservation: Leveraging the AKN. Douglas A. Miller, Penn State University, University Park, PA; Crawford, S.R., Penn State University, University Park, PA; Rich, T.D., Boise, ID; Kelling, S., Cornell University, Ithaca, NY. miller@eesi.psu.edu

Rapidly expanding capabilities in web-based geospatial technology provide significant opportunities to create web map-based knowledge discovery tools and interfaces for the AKN. These evolving feature-rich geospatial technologies provide a significant capability to improve our understanding of the dynamic spatial and temporal nature of the location and movement of avian species. The Center for Environmental Informatics at Penn State University (CEI) has pioneered the application of these advanced web mapping approaches for a wide range of environmental and agricultural decision support tools through an approach that combines an interactive, feature-rich user-interface with the underlying geospatial capability of web map server technology.

In an early pilot project (www.cei.psu.edu/pif) conducted in 2006-2007, CEI worked closely with Partners-in-Flight (PIF) (www.partnersinflight.org) to create a prototype web application that would display species range maps (wintering and breeding) for Neotropical migrant landbird species. The web map-based paradigm provides a rich user interface for a wide range of applications, ranging from decision support tools at the land manager level to advanced spatial-temporal data exploration needs of the research community. This is of particular relevance to communities that typically do not currently have access to rigorous geospatial data management systems and linked visualization resources, such as individuals, small non-governmental organizations, or land managers in Mexico, Central and South-America.

Mapas en la Internet para la Conservación de Aves: Promoviendo la AKN.

La capacidad de generación de mapas con tecnologías geoespaciales basadas en la Internet está creciendo rapidamente y provee oportunidades significativas de crear herramientas de descubrimiento basadas en mapas y otras interfaces para la AKN. Estas tecnologías geoespaciales, llenas de atributos y muy adaptativas, proveen una capacidad significativa para mejorar nuestro entendimiento de la naturaleza dinamica espacial y temporal de la localización y movimiento de aves. El Centro de Informática Ambiental en Penn State University (CEI) ha liderizado la aplicación de estas tecnologías avanzadas para un amplio rango de herramientas de soporte de decisión en temas ambientales y agriculturales a través de una estrategia que combina una interface interactiva rica en atributos con la capacidad básica geoespacial de la tecnología de servicio de mapas de la Internet.

En un proyecto piloto (www.cei.psu.edu/pif) realizado en 2006-2007, CEI colaboró con Compañeros en Vuelo (PIF) (www.partnersinflight.org) para crear una aplicación de Internet prototipo que mostraría mapas del rango de distribución (reproducción e invierno) de especies de aves migratorias neotropicales terrestes. El paradigma de mapas de Internet provee una interface adaptable a un rango amplio de aplicaciones, desde herramientas de soporte de decisión a nivel de manejo de terreno hasta exploraciones de datos espacio-temporales avanzadas para la comunidad científica. Esta adaptabilidad es de particular importancia para comunidades de usuarios que actualmente carecen de acceso a sistemas de manejo de datos geoespaciales rigurosos y recursos de visualización asociados, tales como individuos, organizaciones no-gubernamentales pequeñas, o directores y planificadores de terreno en México, Centro- y Suramérica.

Molter°, E.; Bonfield, S.

Measuring Successes and Needs for International Migratory Bird Day Festivals, Emily Molter, IMBD, Boulder, CO; Bonfield, S., IMBD, Boulder, CO. migratorybirdday@aol.com

International Migratory Bird Day is a 16-year old program that reaches thousands of people each year in one to three day events. In 2007, the first intensive effort to identify program successes and gaps was begun. Our results describe why event organizers choose to celebrate IMBD, the types of materials used, and determining organizer needs to share information about birds and their conservation.

Morales, S.; Will°, T.; Griffith, D.

An Opportunity for Local Group Involvement in Latin American Bird Conservation: Adopt a MoSI Station. Salvadora Morales, Fauna & Flora International, Nicaragua; Will, T., USFWS, Ft. Snelling, MN; Griffith, D., St. Louis Zoo, Sevilla, Spain. tom_will@fws.gov.

With the largest areas of extant native habitat, Nicaragua is arguably the premier country in Central America in which to work proactively for the conservation of both nearctic-neotropical migrants and resident neotropical birds. Yet the country remains relatively unexplored ornithologically and until recently has had virtually no professional ornithological infrastructure. MoSI (*Monitoreo de Sobrevivencia Invernal*) banding stations—an Institute for Bird Populations (IBP) strategy to monitor overwinter survival of long-distance migrants—have been changing that scenario. Currently there are eight MoSI stations in Nicaragua. In addition to providing critical data, these stations have created an unprecedented nexus for generating enthusiasm and professional training for young Nicaraguan bird biologists. MoSI startup costs were provided via the Neotropical Migratory Bird Conservation Act, but in order to persist, stations need to find permanent and dependable sources of funding. Local U.S. bird groups can provide these minimal but valuable resources by "adopting" a MoSI station. For example, a station initiated through a Wisconsin effort in the remote and exciting Bosawas region of Nicaragua, now fully staffed by indigenous Mayangna biologists, is looking for continuing support. The adoption framework provides advantages over other methods of involvement. A bird club or Audubon chapter interacts directly with a Central American NGO or local station; at the same time, the MoSI infrastructure provides vital linkages with other stations and other countries. Periodic internet banding reports offer a forum for the adopting group to view tangible results—and birds!—on a regular basis. And the local/local connection will inevitably spark adopter interest in visiting the station, helping with banding activities, alliances with local communities, birding in the region, increased interest in the country, opportunities for nurturing talent and conservation capacity, lifelong friendships, and hopefully, saved birds.

Una Oportunidad para Involucrar a Grupos Locales en la Conservación de Aves en Latinoamérica: Adoptar una Estación MoSI.

Con la mayor extensión de hábitat natural existente, Nicaragua es probablemente el primer país en Centroamérica en la cual trabajar de forma activa para la conservación de aves neotropicales, migratorias neárticas y residentes. Sin embargo, el país sigue siendo relativamente inexplorado ornitológicamente y hasta hace sin prácticamente ninguna infraestructura profesional

ornitológica. Las estaciones de anillado MoSI (Monitoreo de Sobrevivencia Invernal) - del Instituto de Poblaciones de Aves (IBP) una estrategia para monitorear la supervivencia del invierno de las aves migratorias de larga distancia - han ido cambiando ese escenario. Actualmente hay ocho estaciones MoSI en Nicaragua. Además de proporcionar datos críticos, estas estaciones han creado un nexo sin precedentes para generar entusiasmo y formar profesional en aves a jóvenes biólogos de Nicaragua. Los costos de inicio de MoSI fueron proporcionados a través de la Ley de Conservación de Aves Migratorias Neotropicales, pero a fin de persistir, las estaciones necesitan encontrar fuentes de financiación permanentes y fiables. Grupos locales de aves en EE.UU. pueden proporcionar recursos mínimos valiosos, "adoptando" una estación MoSI. Por ejemplo, una estación inició a través de un esfuerzo de Wisconsin en la remota y emocionante región de Bosawas de Nicaragua, que actualmente manejada por biólogos indígenas Mayangna, esta buscando apoyo para continuar. El marco de adopción proporciona ventajas sobre otros métodos de participación. Un club de aves o un capítulo de Audubon interactúan directamente con organizaciones no gubernamentales de América Central o una estación local; al mismo tiempo, la infraestructura MoSI proporciona vínculos vitales con otras estaciones y otros países. Informes periódicos de anillado en internet ofrecen un foro al grupo de adopción para ver resultados tangibles, y aves! - sobre una base estandarizada. La conexión local inevitablemente activará el interés del adoptante en visitar la estación, contribuyendo con las actividades de anillado, las alianzas con las comunidades locales, observación de aves en la región, el aumento de interés en el país, las oportunidades para fomentar el talento y la capacidad de conservación, amistades de toda la vida, y es de esperar, conservación de aves.

Morales°, S.; Saracco, J. F.; DeSante, D. F.; Pyle, P.

Sumen de los Primeros Cuatro Años del Programa de Monitoreo de Sobrevivencia Invernal (MoSI) en Centroamérica. Salvadora Morales, Fauna y Flora International, Managua, Nicaragua; Saracco, J. F., The Institute for Bird Populations, CA; DeSante, D.F., The Institute for Bird Populations, CA; Pyle, P., The Institute for Bird Populations, CA. salvadoramorales-@hotmail.com

Pocos datos existen para permitir una evaluación de la calidad de hábitat de invierno para aves migratorias terrestres y su sobrevivencia Invernal. En un intento de llenar este vacío, The Institute for Bird Populations y cooperantes del norte del neotrópico establecieron el programa MoSI en el 2002. MoSI consiste en una red de estaciones de redes de neblina y anillamiento operados en México, Centro América y Caribe entre noviembre y marzo de cada año. Las metas principales de MoSI son de proveer (1) estimados de aparentes de tazas de sobrevivencia anual de invernada y (2) índice de condiciones físicas de invernada tardía para un grupo de 25 especies metas de aves terrestres en una variedad de hábitats y regiones geográficas. MoSI ha crecido de 29 estaciones en 2002-03 a más de 80 operadas por 49 organizaciones cooperantes e individuos anilladores en 2005-06. Desde 2003-04 el protocolo especifica cinco pulsos mensuales de anillamiento; los cuales se llevan a cabo en dependencia de cada estación. Los análisis del primer año de monitoreo de datos sugirió una relación fuerte entre las tazas de poblaciones reproductoras y la persistencia de sitios de invernada. Resumimos dos años adicionales de datos para proveer un primer vistazo a variaciones geográficas y hábitats relacionados en la sobrevivencia y condición física para especies metas seleccionadas.

A Summary of the First Four years of the Monitoreo de Sobrevivencia Invernal (MoSI) Program.

Few data exist to enable the evaluation of overwintering habitat quality for Neotropical migratory landbirds. In an attempt to fill this data gap, The Institute for Bird Populations and cooperators across the northern Neotropics established the MoSI program in December 2002. MoSI consists of a network of mist-netting and bird-banding stations operated in Mexico, Central America, and the Caribbean between November and March each year. The principal objectives of MoSI are to provide (1) estimates of overwintering and annual apparent survival rates and (2) indices of late-winter physical condition for a suite of about 25 target landbird species in a variety of habitats and geographic regions. MoSI has grown from 29 stations in 2002-03 to more than 80 operated by 49 cooperating organizations and individual bird banders in 2005-06. The 2003-04 protocol calls for five monthly pulses of banding, which work in depend . An analysis of that first year of data suggested a strong link between breeding population trends and overwintering site persistence. Here we summarize an additional two years of data to provide a first look at geographic- and habitat-related variation in survival and physical condition for selected target species.

Mordecai°, R. S.; Mordecai, K. A.; Cooper, R. J.; Justicia, R. M.

Closing the Loop: Connecting Monitoring, Management, and Outreach in the Chocó-Andean Corridor, Northwest Ecuador. Rua S. Mordecai, UG, Athens, GA; Mordecai, K.A., Katalyst Designs, Cary, NC; Cooper, R.J., UG, Athens, GA; Justicia, R.M., Fundación Maquipucuna, Ecuador. rua@uga.edu.

Monitoring is often described as a cyclic process. A management action is applied, the results are monitored, and that information is used to inform future management. In practice, each component of this cycle has been challenging to implement thus resulting in monitoring programs with poorly defined management questions, sporadic data analysis, and little public outreach. We describe novel statistical software and new outreach materials to support this cycle of monitoring for bird communities in the Chocó-Andean corridor of northwest Ecuador. The software automates simple multi-species occupancy analysis using program PRESENCE and then makes model averaged site-specific predictions with bootstrapped 95% confidence intervals. This analysis tool allows users with little statistical background to apply rigorous statistical techniques to simple management questions. The outreach materials, which include interpretive signs and a shade-grown coffee coloring book, connect the preliminary results from the monitoring program to ongoing outreach in the region. The software and approaches to outreach could be easily applied to other bird monitoring programs in both tropical and temperate regions.

Completando el Círculo: Conectando Monitoreo, Manejo y Difusión en el Corredor Chocó-Andes, Noroeste de Ecuador.

El monitoreo es frecuentemente descrito como un proceso cíclico. Las acciones de manejo son aplicadas, los resultados monitoreados y esa información utilizada para informar futuras prácticas de manejo. En la práctica, cada componente de este ciclo ha sido un reto de implementación, que ha resultado en programas con preguntas de monitoreo pobremente definidas, análisis de datos esporádicos y poca difusión al público. Aquí describimos un nuevo software estadístico y nuevos materiales de difusión en apoyo al ciclo de monitoreo de comunidades de aves en el corredor Chocó-Andes en el noroeste de Ecuador. El software automatiza análisis de ocupación simples para múltiples especies utilizando el programa PRESENCE y después

elabora modelos promedio con predicciones específicas a sitio con intervalos de confianza de 95%. Esta herramienta de análisis permite a usuarios con poca capacitación aplicar técnicas estadísticas rigurosas a preguntas simples de manejo. Los materiales de difusión, que incluyen anuncios interpretativos y un libro de colorear sobre el café de sombra, conectan los resultados preliminares con el programa de monitoreo a actividades de difusión en marcha en la región. El software y el enfoque de las actividades de difusión pueden ser fácilmente aplicados a otros programas de monitoreo en regiones tropicales y templadas.

Mordecai°, Rua S.; Cooper, Robert J.; Justicia, R. M.

A Threshold Response to Habitat Disturbance by Forest Birds in the Chocó-Andean Corridor, Northwest Ecuador. Rua S. Mordecai, UG, Athens, GA; Cooper, R.J., UG, Athens, GA; Justicia, R.M., Fundación Maquipucuna, Quito, Ecuador. rua@uga.edu.

Understanding how organisms use disturbed habitats such as shade-grown coffee and how that use can be increased is a pivotal question in conservation biology. We analyzed the relationship between upper canopy cover, an indicator of disturbance, and occupancy and use by 18 forest bird species in northwest Ecuador. From May 22 to June 28, 2006 we conducted five, 10-min 50m-radius point counts at 28 sites (140 total) representing a gradient of habitat disturbance from 1285 - 1787m in elevation. Both occupancy and use showed strong threshold responses at 21-40% upper canopy cover with the probability of occupancy increasing from about 0 to 1 and emigration (the probability that a species would stop using the site during the study period) decreasing from about 1 to 0. Bird surveys ended near the beginning of the driest time of year and high levels of emigration in more disturbed areas imply that forest birds stopped using these areas as the dry season approached, possibly due to a shift in food resources. Patterns of use and occupancy suggest that disturbed habitat in the region (which is primarily abandoned pasture) may only be valuable to forest birds after a specific level of regeneration and during certain times of the year.

Cómo utilizan los organismos hábitats perturbados tales como café de sombra y cómo estos organismos podrían aumentar su utilización, son dos preguntas de fundamental importancia para la biología de la conservación. En el noroeste de Ecuador, se analizó la relación entre el porcentaje de cobertura del dosel superior, un indicador de perturbación, y la ocupación y el uso que 18 de especies de aves características de bosque le dan estos hábitats. Del 22 del mayo al 28 de junio del 2006 se realizaron conteos de 10 minutos, en cinco puntos de conteo de 50 metros de radio, en cada uno de 28 sitios (140 en total) entre los 1285 y 1787 metros de altura que representan una gradiente de disturbio de hábitat. Tanto la ocupación y el uso mostraron fuertes respuestas umbral en áreas con doseles superiores con cobertura entre 21-40%, con la probabilidad de ocupación aumentando de 0 a 1 y la emigración (la probabilidad de que una especie deje de utilizar el sitio durante el período de estudio) disminuyendo de 1 a 0. Se terminaron los conteos cerca del comienzo de la época más seca del año. Los altos niveles de emigración en las zonas de bosque más perturbadas implican que las aves dejaron de usar estas zonas cuando la estación seca se acercó, posiblemente debido a un cambio en la disponibilidad de alimentos. Los patrones de uso y ocupación del hábitat perturbado (que es principalmente de pastos abandonados) sugieren que estos sólo pueden ser valiosos para las aves características de bosque después de un nivel específico de regeneración y durante ciertas épocas del año.

Moreno°, M. I.; Howes, L.; Berlanga, H.; Sutton, A.; Tomosy, M.; Valenzuela, P.; Lacerda, R.; Levesque, A.; Salaman, P.; Ralph, C. J.; North, N.

A Western Hemisphere Bird Banding Network for Bird Conservation Beyond Political Boundaries. Maria Isabel Moreno, Fundación ProAves, Colombia; Howes, L., Canadian Wildlife Service Environment Canada, Canada; Berlanga, H., CONABIO, Mexico; Sutton, A., The Nature Conservancy, Jamaica; Tomosy, M.,USGS, Laurel, MD; Valenzuela, P., Unión de Ornitólogos de Chile, Chile; Lacerda, R., SNA/CEMAVE, Brasil; Levesque, A., Amazona, Guadalupe; Salaman, P., American Bird Conservancy, The Plains, VA; Ralph, C.J., US Forest Service, Arcata, CA. mmoreno@proaves.org.

Bird banding and marking provides vital data for scientific research, management, conservation of bird populations and their habitats. The establishment of regional bird banding centers had been listed as a top priority to support coordinated bird banding and marking efforts throughout the Americas by the Western Hemisphere Migratory Species Initiative. There is a worldwide interest in internationally coordinating efforts for tracking bird movements especially in the light of world conservation and health issues such as global warming and Avian Influenza. Program coordinators from many countries of the Western Hemisphere, governmental and non-governmental organizations, have been working to enhance collaboration across political boundaries through the newly formed Western Hemisphere Bird Banding Network. The network is interested in addressing issues regarding capacity building, permit issues, data management and sharing, standardization of data collection and/or metadata, bander ethics and safety, encounter/recovery reporting, band and marking issues, and mechanisms for communication among countries. Two workshops have been held in Centro America and the Caribbean, involving several countries, banding programs and people. Major advances are an action plan, webpage for reporting captures, sharing expertise, development of new banding centers, capacity building and an ongoing communications listserve. This network would demonstrate how coordinating banding programs and sharing banding expertise and information can support the stewardship of western hemisphere migratory birds as well as ensure that banding and encounter data are collected, archived, and shared in a manner that maximizes their utility for addressing basic and applied scientific research and conservation management.

Una Red de Anillamiento del Hemisferio Ocidental para la Conservación de las Aves Mas Allá de Límites Fronterizos.

El anillamiento y el marcaje de aves proporcionan datos vitales para la investigación científica, el manejo y la conservación de las poblaciones de las aves y sus habitats. La Iniciativa Migratoria de las Especies del Hemisferio Occidental ha enumerado al establecimiento de centros de anillamiento regionales como una prioridad para apoyar a la coordinación de esfuerzos de anillamiento y marcaje de aves a través de las Américas. Existe un interés mundial en coordinar los esfuerzos internacionales para seguir los movimientos de las aves, especialmente en la luz de los temas de conservación y de salud mundial tales como el calentamiento global y la gripe aviar. Los coordinadores de programas de muchos países del Hemisferio Occidental, de organizaciones gubernamentales y no-gubernamentales, han tratado de mejorar la colaboración a través barreras políticas por medio de la recientemente formada Red de Anillamiento de

de la recientemente formada Red de Anillamiento de Aves del Hemisferio Occidental. La red está interesada en trabajar en temas como la creación de capacidades, los permisos, el poder compartir y manejar los datos, la estandardización en la colecta de datos y/o metadatos, la ética y seguridad del anillador, el reporte de encuentros y recuperación de anillos, el anillamiento y marcaje, y los mecanismos para la comunicación entre países. Se han llevado a cabo dos talleres, en Centro América y en el Caribe, implicando varios países, varios programas de anillamiento y personas interesadas. Los avances hasta la fecha son un plan de acción, una pagina Web para divulgación de capturas y para compartir experiencias, el desarrollo de nuevos centros de anillamiento, creación de capacidades y un listserve para las comunicaciones. Esta red demostraría cómo el coordinar programas de anillamiento y compartir experiencias e información de anillamiento pueden apoyar a la administración de las aves migratorias del Hemisferio Occidental así como se asegura que la información de anillamiento y encuentros sean reunida, archivada, y compartida de una manera en que maximiza su utilidad para la ciencia básica y aplicada a la investigación y el manejo de la conservación.

Moreno°, M. I.; Pashley, D.; Salaman, P.; Will, T.; Duriaux, G.; Campos, E.; Jaramillo, O.; Elizondo, P.; Naveda-Rodriguez, A.; Gutiérrez, M.; Morales, S.

Alianza Alas Doradas: Non-breeding Ecology and Conservation of Golden-winged Warbler. Maria Isabel Moreno, Fundación ProAves, Colombia; Pashley, D., ABC, The Plains, VA; Salaman, P., ABC, The Plains, VA; Will, T., USFWS, MI; Duriaux, G., ALAS, Nicaragua; Campos, E., Audubon Panamá, Panamá; Jaramillo, O., Audubon Panamá; Elizondo,P., Asociación Ornitológica de Costa Rica, Costa Rica; Naveda-Rodriguez, A., Fundación Andígena, Venezuela; Gutiérrez, M., ALAS, Nicaragua; Morales, S., ALAS, Nicaragua. mmoreno@proaves.org

Golden-winged Warbler was identified as a 2004 Partners in Flight Watch List species requiring immediate action, and as such it is a species of high conservation concern. Its winter range includes Nicaragua, Costa Rica, Panamá, Colombia, and Venezuela. *Alianza Alas Doradas*, an international Golden-winged Warbler working group, has reviewed existing locality records, solicited new records via Priority Migrant eBird, and initiated 2007-2008 surveys for the species throughout the non-breeding range. Preliminary analysis of records from Central America suggests that Golden-wings occur in a variety of transitional and forested habitats (0 - 2400 m), with perhaps a concentration in pine-oak forests and in areas of coffee production. In the northern Andes of South America, most of the records occur in humid upper subtropical and montane forests (1500 - 2600 m), forest borders, and second-growth woodland close to water sources in Colombia, often above the zone of coffee production and most frequently in association with *Quercus humboldtii*. In a restricted elevation range, the species overlaps with other migrants of conservation concern, most notably Golden-cheeked Warbler in northern Central American and Cerulean Warbler in South America. Compared with other migrants, the species is relatively rare and solitary, with only a single individual often associated with mixed species flocks. Data from Nicaragua suggests a pattern in which birds arrive initially in flocks that remain together for a few days and then disperse. The *Alianza Alas Doradas* conservation plan will engage collaborations with Latin American partners to address the full range of issues relevant to Golden-winged Warbler migration stopover sites and non-breeding season residency.

Alianza Alas Doradas: Ecologia y Conservación de la Reinita Alidorada en las Áreas no Reproductivas.

Vermivora chrysoptera fue identificada por la Lista en Observación de Compañeros en Vuelo en el 2004 como una especie que requiere acciones inmediatas, por ser una especie de alto interés para la conservación. Su rango residencia no reproductiva incluye Nicaragua, Costa Rica, Panamá, Colombia y Venezuela. Alianza Alas Doradas, un grupo de trabajo internacional de la Reinita Alidorada, ha revisado localidades existentes y nuevos registros via AverAves Migratorias Prioritarias, e iniciado muestreos 2007-2008 de la especie a través de sus áreas no reproductivas. Análisis preliminares de los registros de Centroamérica sugieren que la especie ocurre en una variedad de hábitats de transición y bosque desde el nivel del mar hasta 2400m, con tal vez una mayor concentración en bosques de Pino-Encino y áreas de producción de café. En el norte de los Andes en Suramérica, la mayoría de los registros ocurren en boque húmedo alto subtropical y bosque montano (1500–2600m), bordes de bosque, y bosques de crecimiento secundario cerca a fuentes de agua, frecuentemente arriba de la zona de producción de cafe y mas frecuentemente asociado con *Quercus humboldtii*. En un restringido rango de elevación, la especie se sobrelapa con otras especies migratorias de interes para la conservación, mas notablemente *Dendroica chrysoparia* en el norte de Centroamérica y *Dendroica ceruela* en Suramérica. Comparado con otras aves migratorias, la especie es relativamente rara y solitaria, con únicamente un individuo frecuentemente asociado a bandadas mixtas. Datos de Nicaragua sugieren que a patrón en el cual las aves arriban inicialmente en bandadas que permanecen juntas por pocos días para luego dispersarse. El plan de conservación de la Alianza Alas Doradas conectará colaboraciones con socios en Latinoamérica para dirigir los problemas relevantes a los sitios de migración y de residencia durante la temporada no reproductiva de la especie en todo su rango de extensión.

Moreno°, M. I.; Salaman, P.; Quevedo, A.; Ines Lara, S.; Tolosa, M.; Valle, H.; Castaño, J.; Caro, D.

Conservation Initiatives for Priority Migrants Also Benefit Threatened Resident Birds in Colombia. Maria Isabel Moreno, Fundación ProAves, Colombia; Salaman, P., ABC, VA; Quevedo, A., Fundación ProAves, Colombia; Ines Lara, S., Fundación ProAves, Colombia; Tolosa, M.; Fundación ProAves, Colombia; Valle, H., Fundación ProAves, Colombia; Castaño, J., Fundación ProAves, Colombia; Caro, D. Fundación ProAves, Colombia. mmoreno@proaves.org.

Colombia provides important habitat for both transient and seasonally resident long-distance nearctic migrants. Of the approximately 183 migratory species that funnel into the country and disperse throughout South America each autumn, five are high priority migrant species. In 2003, ProAves implemented the Colombian Migratory Bird Monitoring and Conservation Program with the support of the Neotropical Migratory Bird Conservation Act, creating a strategic nationwide network of 27 bird monitoring and banding stations. This program has actively partnered with *El Group Cerúleo* (the Cerulean Warbler Technical Group), *Alianza Alas Doradas* (Golden-winged Warbler Working Group), and Priority Migrant eBird to advance regional initiatives for research and conservation. Research to date has focused on determining distribution and habitat use for Golden-winged and Cerulean warblers and on identifying priority core areas where these migratory species co-occur with threatened or endangered Colombian residents. A strategic network of twelve protected

areas implements conservation advances that include easement agreements, management of public lands, Cerulean Warbler Conservation Coffee, and the first protected area set aside specifically for a neotropical migratory bird in Latin America. Over four years (and involving Ecuador and Peru since 2006), the ProAves Migratory Bird Festival has brought the bird conservation message to more than 30,000 people. The close relationship between the presence of resident endangered species and migratory birds provides a rich opportunity to optimize resources and efforts to safeguard communities of birds in areas of globally strategic conservation interest.

Iniciativas para la Conservación de Aves Migratorias a su vez Benefician a las Aves Residentes Amenazadas en Colombia

Colombia provee hábitat importante para aves migratorias nearticas de larga distancia, ambas, transeúntes y residentes estacionales. De las aproximadamente 183 especies migratorias que ingresan al país desde donde se dispersan por Sur América cada otoño, cinco son especies de elevada prioridad. En el 2003, ProAves implementó el Programa de Monitoreo y Conservación de Aves Migratorias implementado con el apoyo de aliados y del *Neotropical Migratory Bird Conservation Act USFWS* creando una estretegica red de 27 estaciones de monitoreo y anillamiento. Este programa es un aliado activo de El Grupo Cerúleo, la Alianza Alas Doradas y AverAves Migratorias Prioritarias, para llevar a cabo iniciativas regionales de investigación y conservación. Las investigaciones a la fecha se han enfocado en determinar la distribución, uso de hábitat de *Dendroica cerulea* y *Vermivora chrysoptera*, e identificar áreas núcleo prioritarias donde estas especies co-ocurren con especies residentes amenazadas en Colombia. Una estratégica red de doce áreas protegidas, donde se llevan a cabo avances en conservación que incluye servidumbres ecológicas, acuerdos de manejo de tierras públicas, la promoción del Café Reinita Cerúlea y la primera área protegida para un ave migratoria neotropical en Latinoamérica. Después de cuatro años de implementación del Festival de las Aves Migratorias, (que involucra a Ecuador y Perú desde 2006) ha sensibilizado a más de 30.000 personas. La estrecha relación entre la presencia especies amenazadas y migratorias hacen de esta una oportunidad para optimizar recursos y esfuerzos para salvaguardar comunidades de aves en zonas estratégicas de interés para conservacionistas a nivel global.

Morrison°, A.; Bonfield, S.; York, S.

Birds in Hand and Field, Activities for Exploring Birds. Amanda Morrison, RMBO, Brighton, CO; Bonfield, S.; York, S. amanda.morrison@rmbo.org.

Teachers are critical to bird conservation. Birds in Hand and Field, an activity book centered around bird banding stations, is a resource available to teachers in a variety of disciplines to use to introduce students to birds and conservation. Activities are focused on bird biology and ecology that strive to foster a greater understanding of birds and thus a greater responsibility and concern for their well-being.

Navarro-Sigüenza°, A. G.; Sánchez-González, L. A.; Ríos-Muñoz, C. A.

Effects of Climate Change on the Birds of Mexico. Adolfo G. Navarro-Sigüenza, Museo de Zoología, Facultad de Ciencias, UNAM; Sánchez-González, L.A.,Museo de Zoología, Facultad de Ciencias, UNAM; Ríos-Muñoz, C.A., Museo de Zoología, Facultad de Ciencias, UNAM. fcvg01@servidor.unam.mx

Bird biology could be modified as a result of the climate change. These changes involve reductions in the local diversity, modifications of distributional patterns, and/or modifications in the breeding seasons for different species, among other phenomena. The avifauna of Mexico, with over 1000 species, may experience dramatic changes targeting mainly endemic and restricted species, as well as migratory species. In this paper, we assessed the effects of climate change through distributional models based on the species' ecological niche obtained from present ecological conditions and its projection into future climatic conditions, drawn from general circulation models of climate change. Results suggest that endemic and habitat restricted birds were highly affected, as well as the avifauna of restricted habitats (e. g. cloud forests). The habitats for migratory species were greatly reduced under projected future climatic conditions, particularly for those species showing preference for similar habitats between breeding and wintering seasons.

Efectos del Cambio Climático Sobre las Aves de México.

La biología de las aves puede verse modificada debido a los efectos del cambio climático global. Dichos cambios podrían manifestarse como reducciones en la diversidad del grupo, alteraciones en sus patrones de distribución geográfica y/o alteraciones en los periodos reproductivos para diferentes especies, entre otros fenómenos. En este sentido, la avifauna de México, compuesta por más de 1000 especies, podría presentar cambios que afectan principalmente a las especies endémicas y/o de distribución restringida, así como a aquellas especies migratorias que ocupan pocos hábitats. En este trabajo, evaluamos los efectos del cambio climático mediante el uso de modelos basados en el nicho ecológico de las especies obtenidos a partir de condiciones climáticas actuales y su proyección a condiciones climáticas futuras basadas en modelos de circulación del cambio climático. Los resultados mostraron que las aves endémicas y asociadas a hábitat específicos se encuentran entre las especies más afectadas; de la misma manera, aquellas especies que se encuentran en hábitat de distribución restringida (e.g. bosque mesófilo de montaña) mostraron una mayor vulnerabilidad. Para las especies migratorias, la superficie total ocupada por los hábitats más importantes para ellas mostró reducciones significativas, en particular para aquellas que no muestran cambios entre sus hábitats de reproducción y de invierno.

Neal°, J. C.

Partners-In-Flight Priority Birds Associated with a Recovering Population of Red-cockaded Woodpeckers in the Ouachita National Forest. Joseph C. Neal, USDA Forest Service, Waldron, AR. jneal@fs.fed.us.

Red-cockaded Woodpeckers (RCW) are slowly recovering on the Ouachita National Forest (ONF) in western Arkansas (U.S.A.). This change is evident in nesting attempts: from 13 in 1990 to 37 by 2007. Habitat restoration supporting this recovery directly benefits resident and Neotropical migratory songbirds, including key Partners-in-flight (PIF) priority species. All birds were noted during visits to clusters of cavity trees where RCWs were nesting (n=62). Including RCWs, 53 species were recorded 2005-2007. Other than RCWs, birds most frequently encountered were: Pine Warbler (98%), Yellow-breasted Chat (89%), Indigo Bunting (87%), Prairie Warbler (84%), Red-eyed Vireo (74%), Chipping Sparrow (73%), Eastern Wood-Pewee (71%), Carolina Wren (68%), Summer Tanager (66%), Brown-headed Nuthatch (56%), Kentucky Warbler (44%), Common Yellowthroat (44%), Blue-gray Gnatcatcher (42%), Northern Bobwhite (42%), Great Crested Flycatcher (42%), Red-headed Woodpecker (40%), and American Goldfinch (40%). PIF breeding and/or win-

ter season Total Scores (maximum score = 30) for these most frequently encountered priority species include: RCW (30), Kentucky Warbler (25), Bachman's Sparrow (25), Prairie Warbler (24), Red-headed Woodpecker (23), Brown-headed Nuthatch (23), Northern Bobwhite (21), Great Crested Flycatcher (20), Summer Tanager (19). These data, from a predominantly shortleaf pine-bluestem grass ecosystem in western Arkansas, demonstrate that a wide range of PIF priority species benefit from habitat management supporting RCW recovery.

Aves en la Lista Prioritaria de Partners-In-Flight Asociadas con una Población en Recuperación de *Picoides borealis* en el Bosque Nacional de las Montañas Ouachita (EEUU).

Picoides borealis está recuperándose lentamente en el Bosque Nacional de las montanas Ouachita en el occidente de Arkansas (Estados Unidos). Este cambio es evidente en los intentos de anidamiento que pasaron de 13 en 1990 a 37 en 2007. La restauración de hábitats en pro de esta recuperación beneficia directamente tanto a aves cantoras residentes como a aves de carácter migratorio Neotropical, entre las cuales se encuentran especies en la lista prioritaria de Partners-in-flight (PIF). Todas las aves fueron observadas durante visitas a grupos de árboles con cavidades donde *P. borealis* se encontraba anidando (n=62). Incluyendo a *P. borealis*, 53 especies fueron registradas en el período 2005-2007. Aparte de *P. borealis*, las aves más frecuentemente observadas fueron: *Dendroica pinus* (98%), *Icteria virens* (89%), *Passerina cyanea* (87%), *Dendroica discolor* (84%), *Vireo olivaceus* (74%), *Spizella passerina* (73%), *Contopus virens* (71%), *Thryothorus ludovicianus* (68%), *Piranga rubra* (66%), *Sitta pusilla* (56%), *Oporornis formosus* (44%), *Geothlypis trichas* (44%), *Polioptila caerulea* (42%), *Colinus virginianus* (42%), *Myiarchus crinitus* (42%), *Melanerpes erythrocephalus* (40%), y *Carduelis tristis* (40%). Los Valores Totales de anidamiento de PIF/temporada de invierno (valor máximo = 30) para las especies más frecuentemente observadas de la lista prioritaria fueron: *P. borealis* (30), *O. formosus* (25), *Aimophila aestivalis* (25), *D. discolor* (24), *M. erythrocephalus* (23), *S. pusilla* (23), *C. virginianus* (21), *M. crinitus* (20), *P. rubra* (19). Estos datos, registrados en un ecosistema dominado por *Pinus echinata-Andropogon gerardi* en el occidente de Arkansas, demuestran que un amplio rango de especies en la lista prioritaria de PIF se beneficia del manejo de hábitats en pro de la recuperación de *P. borealis*.

Neel°, L.

State Wildlife Action Plans – Providing Linkages From Partners In Flight To Partner Planning Processes – An Overview. Larry A. Neel**,** Nevada Department of Wildlife, NV; Powell, R., Audubon Society, Nevada. neel@ndow.org.

Since the recent somewhat concurrent development of the Partners In Flight Continental Plan and the State Wildlife Action Plans, much discussion has ensued regarding the best methods for incorporating Partners In Flight conservation objectives and scientific support tools into the implementation frameworks of the Wildlife Action Plans. This presentation demonstrates the Nevada philosophy of integration of Wildlife Action Plan products and services into an array of key partner planning processes, including BLM Resource Management Plan revision, Forest Plan revision, NRCS wildlife project planning, National Wildlife Refuge Comprehensive Conservation Plans, and county planning processes, with specific demonstration of how PIF conservation objectives and scientific support products and services can be accessed through the wildlife action planning framework and delivered to a state's conservation partners.

Nelson°, M. D.; Johnson D.; Linkhart, B.; Miles, P.

Use of Forest Inventory and Analysis Data to Estimate Past and Current Forest Area of Ponderosa Pine and Jeffrey Pine for Assessing Flammulated Owl Breeding Habitat in the United States. Mark D. Nelson, USFS-FIA, St. Paul, MN; Johnson, D., Global Owl Project, Alexandria, VA; Linkhart, B., Colorado College, Colorado Springs, CO; Miles, P., USFS-FIA, St. Paul, MN. mdnelson@fs.fed.us

Flammulated Owl (Psiloscops flammeolus) is a cavity nesting, neotropical migratory owl species occupying mid elevation montane forest of Ponderosa Pine (Pinus ponderosa) and Jeffrey Pine (Pinus jeffreyi) during the breeding season. Literature reports suggest that European settlement and resultant land management practices have affected habitat suitability and population abundance for this species. While total area of forest land has changed little across eleven western states during the past century, forest composition and structure has been altered significantly. We employ data from the USDA Forest Service's Forest Inventory and Analysis (FIA) program to assess historic and current extent of the two pine species comprising Flammulated Owl habitat. FIA data is based upon field plot-based inventories of forest composition and structure across forest lands of all ownership in the USA. We compiled literature descriptions of Flammulated Owl breeding habitat characteristics, cross-referenced these forest conditions to FIA data attributes, and evaluated and mapped the results; then we compared FIA-based results with estimates and maps of habitat distribution from various published data sources. The geographic extent of Flammulated Owl breeding habitat delineated by NatureServe corresponds closely with maps of Ponderosa and Jeffrey Pine distribution, but these range maps encompass substantial area of unsuitable land within their boundaries. Compared with FIA estimates, Gap Analysis Program (GAP) maps of "known/likely" habitat appear to overestimate the availability of suitable habitat. FIA estimates of habitat availability provide additional benefits of being nationally consistent and having corresponding statistical estimates of uncertainty.

Newman, W.; Gonzalez, J.; Honig°, R.

The Katy Prairie Conservancy: Preserving Habitat West of Houston. Wesley Newman, KPC, Waller, TX; Gonzalez, J., KPC, Houston, TX; Honig, R., KPC, Waller, TX. bobhonig-kpc@sbcglobal.net.

Established in 1992, the Katy Prairie Conservancy (KPC) works with a diverse group of farmers, ranchers, developers, hunters, conservationists, and other landowners to protect a sustainable portion of the Katy Prairie. The Katy Prairie once encompassed roughly 1,000 square miles in the Texas Coastal Plain, bounded by the Brazos River on the south and west, pine-hardwood forest on the north, and Houston to the east. It contains varied habitats — including depressional and agricultural wetlands, creek corridors, coastal grasslands, shrublands, and woodlands — that are being eroded by development. KPC has protected over 14,000 acres by acquisition, conservation easements, and receipt of mitigation lands. KPC's efforts include wetland enhancement, prairie restoration (including a native prairie seedbank), public outreach and education, research (avian flu surveillance and Mottled Duck dispersal/survivability studies) and stewardship partnerships, and ecotourism promotion (e.g., KPC properties include two sites on the Great Texas Coastal Birding Trail). Partners In Flight Species of Regional (Gulf Coastal Prairie) Importance on the Katy Prairie include Northern Bobwhite, Swallow-tailed Kite, Bald Eagle, Swainson's Hawk, White-tailed

Hawk, Yellow-billed Cuckoo, Common Nighthawk, Loggerhead Shrike, Bewick's Wren, Henslow's Sparrow, Dickcissel, Painted Bunting, and Eastern Meadowlark. The Katy Prairie is wintering habitat for hundreds of thousands of migratory waterfowl, and it harbors waterbirds and shorebirds considered at risk such as Little Blue Heron, King Rail, Long-billed Curlew, American Golden Plover, and Buff-breasted Sandpiper.

The Katy Prairie Conservancy: Preservando Habitats al Oeste de Houston.

La Katy Prairie Conservancy (KPC) fue establecida en 1992. La KPC trabaja con un grupo diverso de granjeros, rancheros, desarrollistas, cazadores, conservacionistas, y otros terratenientes para proteger una porción sustentable de la "Katy Prairie" (la Pradera de Katy). En el pasado, la Pradera de Katy abarcaba unas 1,000 millas cuadradas de la planicie costera de Texas, circundada en el sur y el oeste por el Río Brazos, en el norte por los bosques de pino y bosques de arboles maderables, y en el este por Houston. La Pradera de Katy incluye una variedad de hábitats — humedales de hondonadas y humedales agrícolas, corredores de quebradas, pastos costaneros, arbustos y bosques — que están siendo erodados por el desarrollo. La KPC ha protegido unos 14.000 acres vía la adquisición, el establecimiento de servidumbres de conservación, y tierras recibidas como resultado de la mitigación de proyectos. Los esfuerzos de conservación de la KPC incluyen el realce de humedales, la restauración de praderas (incluyendo un banco de semillas de especies nativas), acción y educación pública, la investigación (e.g., vigilancia del flu avícola, y los estudios de dispersión y sobrevivencia del Pato Tejano), y consorcios de mayordomía, y promoción de ecoturismo (e.g., las propriedades de la KPC incluyen dos sitios del Gran Sendero Costero de Texas para la Observación de Aves). Especies de importancia regional para la pradera costera del Golfo, reconocidas por la asociación "Partners in Flight", para la Pradera de Katy incluyen la Cordonizcotui Norteña, el Milano Tijereta, el Aguila Cabeciblanca, la Aguililla de Swainson, la Aguililla Coliblanca, el Cuco Piquiamarillo, el Chotacabras Mayor, el Lanio Americano, el Saltapared de Bewick, el Gorrión de Henslow, el Arrocero Americano, el Colorín Sietecolores, y el Pradero Común. La Pradera de Katy es habitat invernal para cientos de miles de patos y gansos y alberga aves acuaticas y playeras consideradas bajo riesgo tales como la Garza Azul, el Rascón Real, el Zarapito Piquilargo, el Chorlo-dorado Americano, y el Playero Pradero.

Niemuth°, N. D.; Estey, M. E.; Reynolds, R. E.

Using Spatial Models to Guide and Assess Conservation of Grassland and Wetland Birds in the Prairie Pothole Joint Venture. Neal D. Niemuth, USFWS HAPET, Bismarck, ND; Estey, M., USFWS HAPET, Bismarck, ND; and Reynolds, R., USFWS HAPET, Bismarck, ND. Neal_Niemuth@fws.gov.

We present a philosophy and process of conservation planning used in the Prairie Pothole Joint Venture that ensures that spatial models are biologically and scientifically sound, truly useful for conservation, and able to withstand the scrutiny of critics and oversight organizations. Given the targeted nature of conservation funds and that diversity metrics are inappropriate as a response variable in models used for conservation planning, we develop species-specific models that can stand alone or be integrated with results of other models. This allows targeting of locations and treatments to address different needs (e.g., preservation, restoration, or enhancement of wildlife habitat) for any focal species, combination of species, or program while maintaining biological integrity of information used in conservation planning tools. We developed models by using National Wetlands Inventory data, accurate landcover data, and annual estimates of water abundance as predictor variables for species presence/absence or count data. Fine spatial resolution of our models enables them to be used for assessment of the effects of conservation programs across broad landscapes. We demonstrate how spatial models have been used to assess the effects of the USDA Conservation Reserve Program on non-game birds, as well as the benefits that waterfowl conservation efforts have provided many non-game species in the Prairie Pothole Region.

Niemuth°, N. D.; Estey, M. E.; Reynolds, R. E.

Data for Use in Bird Conservation: Needs and Perspectives of an End User. Neal D. Niemuth, USFWS HAPET, Bismarck, ND; Estey, M. E., USFWS HAPET, Bismarck, ND; Reynolds, R. E., USFWS HAPET, Bismarck, ND. Neal_Niemuth@fws.gov.

A major focus of North American bird conservation programs is the development of spatial planning tools to guide local and regional conservation efforts. To be useful for on-the-ground conservation, spatial planning tools require data that are spatially and thematically accurate, fine-grained, unbiased, and collected at the proper time. A variety of databases are available to aid the development of spatial planning tools for bird conservation. These databases are attractive for many reasons, as many use volunteers, are available for most of North America, and are Internet accessible. In addition, many of the data are available in GIS format, seemingly making them ideal for spatial applications. However, quality of data available for bird conservation varies, which can greatly affect results of planning tools developed with the data. Bird data collected with limited planning or purpose suffer from limitations caused by variable sampling effort, inconsistent sampling protocol, lack of a sampling framework, small sample size, poor timing, inclusion of opportunistic observations, and a tendency to report unusual observations. Similarly, classification accuracy, spatial and thematic resolution, timing, and consistency of landcover data vary widely. We discuss and provide solutions to some of these issues, recognizing that no data or methods for developing useful spatial planning tools are perfect, but that some are preferable to others.

Datos para uso en la Conservación de Aves: Necesidades y perspectivas de un Usuario Final.

Uno de los focos principales de los programas de conservación de aves en Norteamérica es el desarrollo de herramientas de planificación espacial para guiar esfuerzos de conservación local y regional. Para ser útiles a nivel de conservación de campo, estas herramientas de planificación espacial requieren datos de exactitud espacial y temática, grano fino, imparcialidad, y ser recolectados en el momento apropiado. Una variedad de bases de datos están disponibles para ayudar en el desarrollo de herramientas de planificación espacial para la conservación de aves. Estas bases de datos son atractivas por varios motivos, debido a que varias utilizan voluntarios, están disponibles para la mayor parte de Norteamérica, y son accesibles por la Internet. En adición, muchos de estos datos están disponibles en formato de SIG, lo que los hace ideales para la aplicación espacial. Sin embargo, la calidad de datos disponibles para la conservación de aves es variable, lo que puede afectar significativamente los resultados de las herramientas de planificación desarrolladas con estos datos. Datos de aves recolectados con planificación o propósito limitado sufren de limitaciones causadas por variaciones en esfuerzos de muestreo, protocolos de muestreo inconsistentes, falta de un marco de muestreo, tamaño de muestreo pequeño, limitaciones de tiempo, inclusión de observaciones oportunistas, y tendencia a reportar observaciones inusuales. Del mismo modo, hay gran variación en la exactitud de datos

sobre paisajes en cuanto a clasificación, resolución espacial y temática, sincronización, y consistencia. Discutimos y proveemos soluciones para algunos de estos asuntos, reconociendo que los datos o métodos para el desarrollo de herramientas útiles de planificación espacial no son perfectos, pero algunos son preferibles a otros.

Noel*, B. L.; Bednarz, J. C.; Rowe, Z. F.

Pileated Woodpecker Nesting Ecology in the Big Woods of Arkansas: Possible Inferences to Limiting Factors Affecting Ivory-billed Woodpecker Population Growth? *Brandon L Noel; Bednarz, J. C.; Rowe, Z. F., ASU, State University, AR. bnoelmarinebio@hotmail.com

One significant obstacle to the recovery of Ivory-billed Woodpeckers (IBWO), *Campephilus principalis*, is the lack of information about this species' biology and ecology of large woodpeckers in bottomland hardwood forests in the southeastern U.S. We present preliminary findings on large woodpecker ecology in bottomland hardwood habitats, using Pileated Woodpeckers (PIWO), *Dryocopus pileatus*, as our model species. These data suggest that certain characteristics of nest trees, cavity trees, and forage trees selected by large woodpeckers were different between the lower and higher bottomland habitats. Specifically, PIWOs nested in trees that were shorter, had a smaller DBH, and were more advanced in decay than trees they selected as roosts. In 2007, we estimated mean spatial use patterns in 9/13 radio-marked PIWOs as 264.4 ha (range = 22.4 – 994.3 ha). In addition, nesting, roosting, and foraging locations were documented for radio-marked and unmarked individuals. Adult PIWOs exhibited smaller home-ranges ($\overline{X}$ = 27.3 ha) than reported in the literature (ca. 53–160 ha), suggesting high-quality habitats. Four of 13 radio-marked individuals were depredated in the lower bottomland habitat, perhaps suggesting dispersal or mate searching could be very dangerous in this environment. Most recent IBWO sightings occurred in these lower bottomland habitats. Further, we documented nest depredation, which could be another limiting factor affecting IBWO population growth, if extant.

Ecología del Carpintero Crestado en los Grandes Bosques de Arkansas: ¿Inferencias sobre factores limitantes que afectan el crecimiento poblacional del Carpintero Real?

Un obstáculo para la recuperación del Carpintero Real Campephilus principalis, es la carencia de información sobre la biología y ecología de esta especie en el sureste de Estados Unidos. Presentamos hallazgos preliminares sobre la ecología de carpinteros en bosques ribereños usando el Carpintero Crestado Dryocopus pileatus, como modelo. Nuestros datos sugieren que características de los árboles para anidación, dormidero y forrajeo seleccionados por los carpinteros, fueron distintas en bosques ribereños bajos y altos. Los Carpinteros Crestados anidaron en árboles bajos, con DAP's pequeños y mayor estado de decaimiento que los árboles seleccionados como dormideros. En el 2007 estimamos que el área promedio usada por 9/13 Carpinteros Crestados marcados con transmisores fue 264.4 ha (rango = 22.4–994.3 ha). Documentamos localidades de anidación, dormideros y forrajeo para individuos con y sin transmisores. Los adultos usaron áreas de acción menores ($\overline{X}$ = 27.3 ha) a las registradas en la literatura (ca. 53–160 ha), sugiriendo hábitats de alta calidad. Cuatro de trece individuos marcados con transmisores fueron depredados en bosques ribereños bajos, sugiriendo que la dispersión o búsqueda de pareja en este ambiente pueden ser peligrosas. Las últimas observaciones del Carpintero Real se hicieron en bosques ribereños bajos. Documentamos depredación de nidos, otro limitante para el crecimiento poblacional del Carpintero Real si aún existe.

Norman°, D. M.; Salsbury, K.; Garcia, D.

Bird Banding and Monitoring at IslandWood. Donald Norman, PSBO, Seattle, WA; Salsbury, K., IslandWood, Bainbridge Island, WA; Garcia, D., CSU, Chico, CA. pugetsoundbird-@gmail.com.

Children come from King and Kitsap county schools to participate in a four-day residential outdoor education experience, typically 100 fourth to sixth graders each week during the school year. They work in small groups with an instructor exploring and studying on our 255-acre site. Many of our students come from low-income families and may have never been away overnight. In the summer months, students between the ages of 3 and 16 come for a variety of both day and residential camp experiences.

Barred owl research has been conducted at IslandWood since 2000. Since opening our doors to students in the fall of 2002, we have introduced children to the process and excitement of owl research and tracking. Being outdoors at night has become a signature experience. Bird banding began on site since 2002 when a MAPS station was initiated and has grown during the school season with the Scientist in Residence program, which demonstrates banding. These experiences play a role in bringing children and nature together and fostering stewardship. We will discuss how these programs are being further integrated with a new winter banding project from the perspective of integrating birds into the curriculum. The success of these projects has established the presence of banding as a part of science education at IslandWood.

Norvell*, R. E.; Edwards, T. C.; Howe, F. P.

Multi-scale Effects of Habitat Restoration on Sagebrush-steppe Obligate Birds. Russell Norvell, UDWR, Salt Lake City, UT; Edwards, T., USBRD, Logan, UT; Howe, F., UDWR, Logan, UT. russellnorvell@utah.gov.

Sagebrush-steppe is being widely 'restored' using anthropogenic disturbances, with the goal of relieving perceived habitat-based limits to sage grouse populations driving project design. As part of a comprehensive research program (sage grouse, pygmy rabbit, small mammals, historical ecology, and remote sensing), we investigated the effect of sagebrush-steppe habitat restoration on passerine birds at multiple scales: nest, territory, and landscape. We simultaneously applied several monitoring approaches (extirpation probability, distance sampling, territory mapping, and nest monitoring) to assess the spectrum of species-specific responses to restoration over space (ca. 2560 km^2) and time (4 years). Compared to historic anthropogenic disturbances, restoration treatments were more similar to historic natural disturbances: relatively light intensity (50–75% kill rate), mosaic patterns, and limited to small (10–40%) percentages by area. Contrary to expectations, we saw few negative impacts on sagebrush-steppe obligate species occupancy, density, territorial density, nest density, or nest success at any scale over the four years of study. The notable exception was the apparently complete lack of sage sparrow nesting in all treatment areas older than 1 year, an effect forecast only by reduced mean clutch sizes and numbers of fledglings in the first year post-treatment. While restoration treatments designed to controlledly re-introduce disturbance to sagebrush-steppe should not be applied uniformly, most sagebrush-steppe obligate species appear to avoid unsuitable areas without significant short-term repercussions.

Norvell*, R. E.; Parrish, J. R.; Howe, F. P.; White, H.; Roberts, D.

16 years of riparian bird population monitoring, 1992-2005. Russell Norvell, UDWR, Salt Lake City, UT; Parrish, J.,UDWR, Salt Lake City, UT, Howe, F., UDWR, Logan, UT, White, H.,UDWR, Logan, UT, Roberts, D.,UDWR, Salt Lake City, UT. russellnorvell@utah.gov.

When Utah PIF was established in 1992, our greatest need was for status information for the birds in our highest priority habitats. We established an on-going statewide population monitoring program in riparian habitats that has since informed much of our conservation planning and our implementation actions. This program has been cooperatively funded from the start, and provides our partners with locally relevant data on in the context of regional (statewide, ecoregional, and now BCR) population trends. Recognizing the need for habitat-specific demographic estimates, we added a coordinated banding program in 1995. Species and community abundance estimates, population trends, and demographic parameters derived from this program have proved a rich data source for the Utah's PIF Avian Conservation Strategy (2002) and have recently informed the Utah Wildlife Action Plan (2007) conservation priority species list. The monitoring program uses a randomly selected set of core sites, uniform field methods, and a flexible analysis approach that allows us to incorporate data from short-term projects, where additional study sites can be added and removed as funding levels and need dictate. In our 18th - 20th years, we will be refocusing work on species and community-level habitat associations, spatial analyses, emergent threats, conservation assessment, and applying improved trend modeling approaches.

Nott°, P. M.

Migration Connectivity and the Influences of Weather and Climate on Neotropical Migrants. Phil M. Nott, IBP, Point Reyes Station, CA. pnott@birdpop.org

Analyses of Monitoring Avian Productivity and Survivorship (MAPS) data (1992-2003), the Global Precipitation Climatology Project (GPCP) dataset, and various climate indices have identified strong relationships between environmental conditions and landbird demographics; including reproductive success of landbirds breeding in the Pacific Northwest, reproductive success and survival rates among Painted Buntings in Texas, and body condition/reproductive success among Wood Thrush populations of the Blue Mountains and Central Hardwood Bird Conservation Region. For Neotropical migrants an inspection of the spatial variation of non-breeding season relationships seems useful in resolving migration connectivity (i.e. identifying where local populations overwinter and the critical timing of environmental stressors).

Nott°, P. M.; DeSante, D. F.; Michel, N.

Monitoring, Modeling, and Management of Landbird Populations on DoD Lands in North Carolina, Indiana, Kentucky, Missouri, and Texas. Phil M. Nott, IBP, Point Reyes Station, CA; DeSante, D.F., IBP, Point Reyes Station, CA; Michel, N.,Tulane University, Louisiana; pnott@birdpop.org.

The Institute for Bird Populations, through its Monitoring Avian Productivity and Survivorship (MAPS) program (1994-2002), effectively monitored 34 landbird species on 13 U.S. Department of Defense installations (or groups of installations) across the eastern and central United States. Of these 34 species, ten are nationally or regionally listed (as of December, 2002) by the US Fish and Wildlife Service as □*Birds of Conservation Concern.*□ In 2003, the 1994-2001 bird banding data was used to identify species of conservation concern on each installation and the local populations that had declined (i.e. species of management concern). From these data we constructed species-landscape models (management models) using demographic estimates from the bird banding data as functions of spatial statistics derived from local FRAGSTAT analyses of USGS National Land Cover Data surrounding each station. Since, we have reorganized the network of monitoring stations by replacing eight stations on five installations. The new stations were located to a) monitor the effects of land management on landbird populations (effectiveness monitoring) and b) better monitor birds of conservation concern on each of a subset of eight installations. For most target species, the comparisons of demographic parameter values predicted from the management models matched closely with the actual values derived from "effectiveness monitoring" of the managed stations.

Nur°, N.; Fink, D.; Hochachka, W. M.; Herzog, M. P.

Elucidating Ecological Factors Influencing Variation in Relative Abundance of Riparian Species in California: The Significance of Spatial Scale. Nadav Nur, PRBO, Petaluma, CA; Fink, D., CLO, Ithaca, NY; Hochachka, W., CLO, Ithaca, NY; Herzog, M., PRBO, Petaluma, CA. nnur@prbo.org.

Riparian habitat throughout the West, and in California in particular, has 90 to 95% of its historical extent. This habitat loss and degradation has put a premium on development and implementation of effective conservation and restoration programs. There is an urgent need to determine the key habitat and landscape features that affect avian abundance and, ultimately, trends in abundance, especially those factors that may be subject to management action. Here we use recently developed data-mining techniques, applied to point count data collected at riparian sites throughout California, to determine which factors best explain variation in abundance of key riparian-dependent species. We then determine whether the same factors and the magnitude of their effects differ across spatial scales, ranging from individual sites (e.g., refuges) to watersheds to bio-regions within the state. We address the question, does information need to be collected at the individual site level or can data from another watershed or bio-region be used? In this way we determine whether one or several management plans should be used to guide management and recovery for each species in California. We conclude with recommendations for management and identify data gaps that need to be addressed.

Nur°, N.; Stralberg, D.; Herzog, M. P.; Warnock, N.; Liu, L.; Abbaspour, P.

Predictive Models of Abundance of Tidal-Marsh Birds in Relation to Habitat and Landscape Features in the San Francisco Estuary: Implications for Conservation and Restoration. Nadav Nur, PRBO, Petaluma, CA; Stralberg, D., PRBO; Herzog, M., PRBO; Warnock, N., PRBO; Liu, L., PRBO; Abbaspour, P., PRBO. nnur@prbo.org.

Tidal marsh, formerly the dominant habitat in the San Francisco Estuary, has been reduced by over 80% as a result of diking, thus impacting many endemic tidal marsh-dependent species, such as Song Sparrows, Common Yellowthroats, and Black Rails. In response, many restoration projects have been initiated. However, important information gaps remain. We have conducted a long-term, multi-site monitoring and research pro-

gram to identify characteristics of habitat and surrounding landscape that will ensure a diverse and stable community of birds. In order to improve understanding of successful restoration, we have collaborated with landscape ecologists and plant ecologists, determining spatial patterns of abundance and presence/absence of tidal marsh birdss at study marshes, and then developing statistical, predictive models for 4 species that incorporate information on vegetation composition, geomorphology, and adjacent uplands. We examined site-specificity of the models. These results support previous results from a more widespread, but less intensive study conducted at 40 marsh sites. We discuss how results can guide the design and assessment of restoration at local and regional scales, as well as lay the basis for the development of "adaptive monitoring programs" that can improve conservation and facilitate adaptive management.

O'Brien°, L. E.; Nigh, T. A.; True, C. D.; Fitzgerald, J. A.

Modeling Ecological Potential to Guide Bird Conservation in the Central Hardwoods Bird Conservation Region. Lee E. O'Brien, Central Hardwoods Joint Venture, Webster Groves, MO; Nigh, T.A., Missouri Department of Conservation, Columbia, MO; True, C.D., Missouri Resource Assessment Partnership, Columbia, MO; Fitzgerald, J.A., Central Hardwoods Joint Venture, Webster Groves, MO. Lee_OBrien@fws.gov.

Historic/potential habitat conditions can be used to evaluate ecological potential, assess habitat change over time and guide conservation actions. The distribution of historic/potential vegetation across the Central Hardwoods Bird Conservation Region was modeled using subdivisions of ecological subsections in the National Hierarchical Framework of Ecological Units and site types within them. Land Type Associations (LTAs) were delineated by The Missouri Department of Conservation and the Arkansas Natural Heritage Commission using changes in topography and geology to delineate different ecological communities. Site Types were developed by The Missouri Resource Assessment Partnership (MoRAP) using a 30m digital elevation model, derived solar insolation values and relative land positions to describe local site conditions. Given maps and descriptions of LTAs and Site Types, local community ecologists were asked to predict what type of vegetation would likely be found at each site type within each LTA. This matrix of potential vegetation types was then spatially mapped in a GIS. The result is a spatially explicit model of landscape potential which was used to predict potential vegetation and with the addition of anthropogenic disturbances, historic vegetation. The model can be used to compare to current conditions and guide the placement of management actions based upon ecological potential.

O'Byrne°, S.; Stewart, B.

A History of Birding for Conservation in Delaware. Sarah O'Byrne; Stewart, B., Wilmington, DE. obyrne@dca.net

Delmarva Ornithological Society (DOS), a member based volunteer birding club with a 40+ year history, has long used birding activities for conservation of habitat and protection of birds. In addition to Christmas Count participation, DOS has conducted a formal Spring Round-up since 1963. In 2002, a year-long avian survey of the future Russell Peterson Wildlife refuge coordinated by DOS and using 22 DOS volunteers was a significant part of the match that resulted in a $800,000 NAWCA grant for the restoration of marsh habitat. In 2005 DOS began a 2 year project to establish the number of breeding kestrels, and to work for their restoration. An interactive website was created to tie in sightings with land use. In 2007 DOS had its first annual Bird-A-Thon where members raised $27,000. In cooperation with The Conservation Fund, we purchased land that was prime horse shoe crab and shorebird habitat. We also used a portion of that money to match a donation by the Delaware Nature Society to co-host a new hawk watch in Delaware. The DE birding trail, a joint effort of DOS, Delaware Audubon, and Delaware Fish and Wildlife will be completed in November 2007. Our birdwatching efforts have strengthened coalitions in Delaware and have brought money and results to conservation efforts.

A Sociedade Ornitológica Delmarva (DOS), um clube ornitológico baseado em membros voluntários com mais de 40 anos de história, há muito que usa actividades ornitológicas para conservação do habitat e protecção das aves. Para além da participação na contagem de natal, a DOS leva a cabo um agrupamento formal de primavera desde 1963. Em 2002, um estudo aviário de um ano do futuro refugio de vida selvagem Russell Peterson, coordenado pela DOS e usando 22 voluntários da DOS desempenhou um papel significativo no emparelhamento que resultou numa bolsa de $800,000 da NAWCA para a recuperação do habitat marsh. Em 2005 a DOS iniciou um projecto de 2 anos para estabelecer o número de Francelhos-das-torres (Kestrels) em nidificação e trabalhar para a sua recuperação. Foi criado um site de internet interactivo para relacionar avistamentos com utilizações de locais. Em 2007 a DOS teve a sua primeira "Bird-AThon" anual onde os membros angariaram $27.000. Com a cooperação do fundo de conservação, adquirimos terra que era habitat excelente para o caranguejo-ferradura (horse shoe crab) e para os larídeos ou aves ciconiformes (shorebirds). Utilizámos também parte desse dinheiro para igualarmos uma doação da "Delaware Nature Society" para co-organizar uma nova observação de falcões em Delaware. O trilho de observação ornitológica de Delaware, um esforço conjunto da DOS, "Delaware Audubon", e da "Delaware Fish and Wildlife" estará finalizado em Novembro de 2007. Os nossos esforços de observação de pássaros fortaleceram relações em Delaware e trouxeram dinheiro e resultados aos esforços feitos para a conservação.

O'Connell°, T.J.

Advancing Broad Scale Ecological Assessment using Bird Community Indicators. Timothy J. O'Connell, OSU, Stillwater, OK. tim.oconnell@okstate.edu.

In recent years, several authors have developed ecological indicators for broad scale assessment that are based on the condition of landbird assemblages. These indicators are typically referenced to a physiographic province or geopolitical region, and rely on specific knowledge of life history of breeding birds. In some regions, bird-based indicators have been used in concert with land cover and other taxa-specific indicators to provide integrated assessments of ecological condition, but efforts to expand that approach to other regions have been slowed by a lack of indicators and/or source data to which those indicators could be applied. I investigated the application of conservation value (CV) scores derived from Partners in Flight prioritization ranks and applied to data from the North American Breeding Bird Survey (BBS) as a remedy for the current shortage of geographically dependent indicators. I compared CV scores to scores of existing indicators (the Bird Community Index) in the central Appalachians and Atlantic Coastal Plain based on random selections of BBS data from 1972, 1992, and 2002. To demonstrate the approach in a region for which no other indicator was available, I derived CV scores for random selections of BBS data from the central tallgrass prairie, also for 1972, 1992, and 2002. Numerous challenges remain in adopting the approach, but the calcula-

tion of CV scores from broad scale monitoring data holds promise for national ecological assessments in the future.

Avanzando Amplia Escala de Evaluación Ecológica Utilizando Indicadores de la Comunidad de Aves.

En los últimos años, varios autores han desarrollado indicadores ecológicos de gran escala de evaluación que se basan en la condición de landbird ensamblajes. Estos indicadores son normalmente hace referencia a una provincia fisiográfica o región geopolítica, y se basan en conocimientos específicos de la vida la historia de la cría de aves. En algunas regiones, los indicadores basados en las aves se han utilizado en concierto con la cubierta vegetal y otros taxones indicadores específicos para proporcionar evaluaciones integradas de la situación ecológica, pero los esfuerzos para ampliar este enfoque a otras regiones se han retrasado por la falta de indicadores y / o fuente de datos para los indicadores que se podrían aplicar. Investigó la aplicación de valor para la conservación (CV) derivados de las Companeros en Vuelo de prioridades en filas y aplicado a los datos de la North American Breeding Bird Survey (BBS) como un remedio para la actual escasez de indicadores que dependen geográficamente. Yo en comparación CV puntuaciones con las de los indicadores existentes en la zona central llanura costera del Atlántico y las montañas Apalaches basada en la selección al azar de BBS datos de 1972, 1992 y 2002. Para demostrar el enfoque de una región para los que no se dispone de otros indicadores, las puntuaciones de CV derivado de la selección aleatoria de los datos de BBS altos de la central de la pradera, también para 1972, 1992 y 2002. Numerosos desafíos en la adopción de la estrategia, pero el cálculo de las puntuaciones de CV gran escala de datos de vigilancia nacional mantiene la promesa de las evaluaciones ecológicas en el futuro.

Ortego°, J. B.

Engagement of Texas Private Landowners in Bird Conservation. Brent Ortego, Texas Parks and Wildlife Department, Victoria, TX; Wagner, M., Texas Parks and Wildlife Department, Austin, TX; Anderson, T., USFWS, Corpus Christi, TX; Harrell, W., The Nature Conservancy, Victoria, TX. brent.ortego@-tpwd.state.tx.us

The Coastal Prairie Conservation Initiative (CPCI) is a good example of landscape scale habitat restoration requiring partnerships of federal, state and private organizations, and private landowners to create conservation on the ground at a scale that is meaningful to bird populations. The CPCI is a partnership of the U.S. Fish & Wildlife Service, USDA Natural Resource Conservation Service, Texas Parks & Wildlife Department, The Nature Conservancy, and Grazing Land Conservation Initiative working to pool their resources to assist private landowners achieve their goals of retaining family ownership, historic values, profitable agricultural management, and wildlife conservation while achieving our collective goal of restoring the Coastal Prairie and re-establishing Attwater's Greater Prairie Chicken (*Tympanuchus cupido attwateri*).

Key Steps were: recognizing loss of species, organize a team of conservation groups with sufficient funding and technical expertise, obtain regulatory relief in the form of federal Safe Harbor programs which assured land owners they would not incur any additional regulatory restriction if they improved their land for endangered species, Land Manager Specialist that has the trust of local land owners, convince landowners that recommended practices would improve the profitability of their ranch, the natural resources and historic values, and would not adversely impact their use of their land, and obtain funding.

El Compromiso de Propietarios Privados de Tejas en la Conservación de Aves.

La Iniciativa de Conservación de Praderas Costeras (CPCI) es un buen ejemplo de restauración de hábitats a nivel de paisaje que requieren alianzas con organizaciones federales, estatales y privadas, así como propietarios privados, para desarrollar conservación en una escala significativa para las poblaciones de aves. El CPCI es una alianza entre el Servicio de Pesca y Vida Silvestre de los Estados Unidos, el Servicio de Conservación de Recursos Naturales del USDA, el Departamento de Parques y Vida Silvestre de Tejas, The Nature Conservancy, y la Iniciativa de Conservación de Tierras de Pastoreo, los cuales trabajan para aunar sus recursos y ayudar a propietarios privados a lograr sus metas de mantener la propiedad familiar y valores históricos, el manejo rentable de la agricultura, y la conservación de vida silvestre, al mismo tiempo que logramos nuestra meta colectiva de restaurar la pradera costera y restablecer los gallos de la pradera de Attwater (*Tympanuchus cupido attwateri*).

Los pasos clave fueron: Reconocer la pérdida de las especies, organizar un equipo de grupos de conservación con fondos y pericia técnica suficientes, disminuir las regulaciones por medio de los programas federales que aseguran a los propietarios el no incurrir en ninguna restricción regulativa adicional si ellos mejoran su tierra para las especies amenazadas o en peligro, especialista en manejo de tierras que goza de la confianza de los propietarios locales, Convencer a los propietarios que las prácticas recomendadas mejorarían la capacidad de ganancia de su hacienda, los recursos naturales y valores históricos; y que no impactaría adversamente el uso de su tierra, y obtener financiamiento.

Ortiz von Halle°, B.

General Overview of the Past, Present and Future of Bird Trade in Latin America. Bernardo Ortiz von Halle, IUCN, Quito, Equador. bernardo.ortiz@traffic.sur.iucn.org

It's only in the last 30 years that wildlife trade became a formally regulated activity in Latin American country's legislations, and globally since CITES came into force in 1975. Practices rooted by millennia of customary relationships based on a huge number of different types of uses of wildlife by our populations is a major challenge for the implementation of the new policies, conditions and messages of "illegality" and "wrong doing". Of the many different consumptive uses of wild birds, pets have been one of the most appreciated by humankind. A combination of factors in Latin America rooted in local poverty, poor governance capacities, *de facto* free-access regimes, and demand by affluent consumers outside and within the region, sustain a demand for a wide array of bird species that is generating a strong enough pressure, that, compounded with habitat degradation, threatens the permanence of many populations and species throughout the region. Current trends towards reducing the demand for wild-harvested species, growing power of animal rights groups, the threat of a bird flu pandemic, have changed significantly the dynamics of a legal economic activity (bird trade) with both positive and negative impacts (case specific) on species and habitat conservation, and livelihoods, and in some cases, generating the conditions for the enhancement of illegal trade. Examples are given on the consequences of banning wild-bird trade, figures on past and present trade levels, lost opportunities for wider biodiversity conservation, and poverty alleviation in rural areas where few if any opportunities for sustainable livelihoods exist.

Es solo en los últimos 30 años que el comercio de vida silvestre se convirtió en una actividad formalmente regulada dentro del marco legal de los países de América Latina, y a nivel global desde que CITES entró en vigencia en 1975. Prácticas arraigadas por milenios a través de una gran cantidad de tipos de usos por parte de nuestras poblaciones son un gran reto para la implementación de nuevas políticas, condiciones y mensajes sobre "ilegalidad" y "prácticas erradas". De los muchos usos de consumo de las aves silvestres, las mascotas han sido uno de los mas apreciados por la humanidad. Una combinación de factores en América Latina basados en la pobreza, gobernabilidad débil, regímenes *de facto* de acceso libres, y la demanda por parte de consumidores ricos de dentro y fuera de la región, mantienen unos niveles de demanda para una amplia gama de especies suficientemente alta, que sumado al efecto de la destrucción del hábitat, amenaza la permanencia de muchas poblaciones y especies en toda la región. Las actuales tendencias hacia la reducción de la demanda de especies de origen silvestre, la creciente influencia de los grupos de defensa de los derechos de los animales, la amenaza de pandemias de gripe aviar en el mundo, han cambiado de manera significativa las dinámicas de una actividad económica legal (comercio de aves) con impactos tanto positivos como negativos (dependiendo de cada caso) sobre la conservación de especies y hábitats, las condiciones de vida de las poblaciones locales, y en algunos casos, generando las condiciones para el desarrollo del comercio ilegal. Se ofrecen ejemplos de las consecuencias de la prohibición de comercio de especies silvestres, cifras pasadas y actuales sobre los niveles de comercio, oportunidades perdidas para conservación mas amplia de biodiversidad, y resolución de problemas de pobreza en áreas rurales en las que las oportunidades de desarrollar estilos de vida sostenibles.

Palasz*, L. M.; Stouffer, P. C.

Effects of Burning on Henslow's Sparrow Density and Habitat Quality in Louisiana. *Laura M. Palasz, LSU, Baton Rouge, LA; Stouffer, P.C., LSU, Baton Rouge, LA. Lpalas1@lsu.edu

The Henslow's Sparrow (*Ammodramus henslowii*) is a grassland species of concern that winters in prairies and open pine savannas across the Gulf Coastal Plain. Previous studies have indicated that these birds occur at higher densities in recently burned habitats in winter, but this has never been examined across ecoregions or habitat types. The objectives of the study were to identify areas of important winter habitat in Louisiana based on bird density and vegetation characteristics. We surveyed ten previously-established plots in the East Gulf Coastal Plain. We also established nine new plots after extensive searching for potential habitat in other ecoregions statewide. We found most of the new potential habitat and the highest densities of birds in two southern ecoregions, suggesting that these may be most important for wintering Henslow's Sparrows. Although some Henslow's Sparrows wintered in northern Louisiana, suitable habitat there was very limited. Recently-burned plots contained higher densities of Henslow's Sparrows regardless of ecoregion. Although habitat quality is improved by burning, no vegetation measurements collected were helpful in interpreting bird abundance patterns, suggesting that characteristics of suitable habitat may vary widely across ecoregions. In contrast with smaller scale studies, results of this research will help land managers make decisions with appropriate consideration for the larger variation in bird abundance and vegetation associations found across a regional scale.

Panjabi°, A.

Treatment of Threats in Status Assessment Schemes. Arvind Panjabi, RMBO, Fort Collins CO, USA. Arvind.panjabi@rmbo.org

All conservation status assessment schemes have the same primary purpose of evaluating extinction risk among species in some taxonomic group. Evaluation of threats is a central component of all conservation assessment schemes, but it is one of the factors most prone to uncertainty, personal bias, and inconsistent application of assessment criteria. This is due in part to the varied and often uncertain nature of threats and their implications for species. Semantic uncertainty in the terms, definitions, and thresholds used to evaluate threats also can produce inconsistent and potentially flawed results. If not specifically addressed, such problems can reduce confidence in the outcome and utility of status assessments. Here I compare and contrast how threats are evaluated and considered in species assessment schemes of five major conservation initiatives that deal with birds in North America: Partners in Flight, Waterbirds for the Americas, the U.S. Shorebird Conservation Plan, the IUCN Red List, and Natureserve. These assessment schemes vary distinctly in their goals, their approach to evaluating threats, their taxonomic scope, the criteria, thresholds, and procedures used to assign threat levels, their handling of uncertainty, the frequency with which threats are reassessed, and how threats are considered in the overall species assessment. As a result, the overall risk-level assigned to species frequently differs among these systems, as illustrated by several examples presented.

Panjabi°, A.; González Rojas, J.I.; Ruvalcaba-Ortega, I.; McCready, B.

Conservation of North American grassland birds in the Chihuahuan Desert. Arvind Panjabi, RMBO, Fort Collins, CO, USA; González Rojas, J.I., UANL, Monterrey, NL, Mexico; Ruvalcaba-Ortega, I., UANL, Monterrey, NL, Mexico; McCready, B., TNC, Bainbridge, WA, USA. Arvind.panjabi@rmbo.org

In winter, the Chihuahuan Desert supports most migratory grassland bird species breeding in the western Great Plains, including 28 priority species. However, little information exists on wintering grassland bird abundance, distribution, and ecological requirements across this region. Due to increasing threats, information is urgently needed to develop strategies to effectively conserve and manage important areas and habitats for priority grassland species. In 2007, we began a regional effort to inventory, monitor, and assess habitat use of wintering grassland birds across the Mexican portion of the Chihuahuan Desert, focusing on Grassland Priority Conservation Areas. Preliminary results indicate differential distribution patterns for many species and that grass and shrub cover strongly affected habitat use. Several species preferred extensive grass cover (>50%), and most avoided sites with little cover (<10%). However, these conditions occurred on 28% and 38% of sites, respectively. Sensitivity to shrub coverage varied among species, although virtually all avoided areas with high cover (>25%), and some species avoided sites with as little as 3% cover. Again, open grasslands with little cover (<1%) were uncommon, representing only 22% of sites identified as grassland in the GPCAs. Our findings suggest that a significant portion of Chihuahuan Desert grasslands are presently unsuitable to most wintering grassland birds and that restoration is needed to improve conditions.

Parsons°, K.; Wheeler, J. A.

Assessing Conservation Status of Waterbirds: A Tool for Resource Managers. Katharine C. Parsons, Manomet Center

for Conservation Sciences, Manomet, MA; Wheeler, J.A., USFWS, Arlington, VA. parsonsk@manomet.org.

Conservation status assessment performed by the Waterbirds Conservation for the Americas Initiative (WCA) characterizes the vulnerability to population unsustainability of waterbird species relative to other waterbirds within a specified geographical area to which WCA is committed to accomplishing conservation objectives. The process involves developing vulnerability indices and assigning species to conservation concern categories. Because assessment produces a categorization of relative vulnerability, it is necessary to identify threshold values for each index developed from quantitative information. Threshold scores are determined by fitting data to a normal distribution and delineating scaled categories. Individual species are assessed relative to other waterbirds; conservation concern for species ranges from those at most risk to those at least risk of population extinction. Despite the lack of definitive information on population attributes that would ensure sustainability, WCA advocates a practical approach to discriminating levels of conservation concern. The most significant use of waterbird assessment is to guide the conservation commitments of wildlife managers, researchers, educators, policy-makers and conservation funding sources within the initiative's broad partnership. WCA is committed to maximizing the usefulness of status assessment to a broad array of waterbird conservationists. This commitment is reflected in the relative simplicity of the status assessment protocol, it's compatibility with the status assessment methods of other bird conservation initiatives, and WCA's adherence to status assessment results for an appropriate time interval.

Pearson°, S. W.; Zollner, D.; Melnechuk, M.

Morticulture Use for Ivory-Billed Woodpecker Habitat Improvements. Seth Pearson, TNC, Little Rock, AR; Zollner, D., TNC, Little Rock, AR; Melnechuk, M., TNC, Little Rock, AR. spearson@tnc.org

The rediscovery of the ivory-billed woodpecker (IBW) in the bottomland hardwood forests of eastern Arkansas prompted a reexamination of management practices and habitat improvement efforts. Lack of suitable foraging sites (near-dead trees infested with cerambycid larvae) is often cited as one reason for its initial decline. As part of an effort to increase suitable forage for IBW we implemented a morticulture project, in which 614 bottomland hardwood trees were treated with girdles or glyphosate injections. Treatments were performed in 2005 and 2006 and trees were monitored annually for signs of impending mortality. An associated monthly Picidae oriented point count was conducted in four of the treatment areas. After one year, 24.5% of trees showed no signs of decline. However, 18% of treated trees showed complete mortality. Within the first year *Celtis laevigata* and *Ulmus americana* most frequently experienced greater than one-third crown dieback. Preliminary results suggest that greater crown dieback occurs within the second year. Girdling also produces greater crown mortality than herbicide injections. While no IBW were observed using these treatment areas, seven Picidae species were recorded in treatment areas. Many recently dead treated trees had large amounts of insect frass surrounding them. This work has potential implications in a variety of restoration and improvement projects for the IBW and other bottomland hardwood species.

Uso de Morticultivo para las Mejoras del Hábitat del Picamaderos Picomarfil.

El redescubrimiento del picamaderos picomarfil (PP) en los bosques ribereños de madera dura en el este de Arkansas instó la reexaminación de las prácticas de administración y los esfuerzos de mejora del hábitat. La falta de lugares de alimentación adecuados (árboles casi muertos infestados de larvas cerambycidae) a menudo se considera uno de los motivos de su disminución inicial. Como parte de un esfuerzo por aumentar el alimento adecuado para el PP, implementamos un proyecto de morticultivo, en el cual 614 árboles ribereños de madera dura se trataron con fajas o inyecciones de glifosato. Los tratamientos se realizaron en el 2005 y 2006, y los árboles fueron controlados anualmente para detectar signos de mortalidad inminente. En cuatro de las áreas de tratamiento se realizó un punto de conteo mensual relacionado orientado a la especie Picidae. Después de un año, el 24,5% de los árboles no mostró signos de deterioro. Sin embargo, el 18% de los árboles tratados presentó una mortalidad total. Dentro del primer año las especies Celtis laevigata y Ulmus americana experimentaron con gran frecuencia una acronecrosis de la copa superior a un tercio. Los resultados preliminares sugirieron que la mayor parte de la acronecrosis de la copa ocurre al segundo año. Además, la colocación de fajas produce mayor mortalidad de la copa que las inyecciones herbicidas. Aunque no se observó ningún PP utilizando estas áreas de tratamiento, se grabaron siete especies de Picidae en las áreas de tratamiento. Muchos árboles tratados muertos recientemente tenían grandes cantidades de excrementos de insectos a su alrededor. Este trabajo tiene posibles consecuencias en varios proyectos de restauración y mejora para el PP y otras especies de los bosques ribereños de madera dura.

Pedraza Ruiz°, R.

Conservation of Avifauna in the Sierra Gorda Biosphere Reserve, México; From environmental education to payment for ecosystem services. Roberto Pedraza Ruiz GESGIAP, Querétaro, México. pedraza_roberto@yahoo.com

The Sierra Gorda Biosphere Reserve (SGBR), covers a surface area of 383,567 ha, and is the most ecosystem-diverse natural protected area in Mexico. As a whole, this area is home to 136 species of herptofauna, 127 species of macromycetes and 327 species of birds pertaining to 19 different orders, 53 families and 220 genera (the SGBR is an Important Bird Area). In accordance with the Ecological Standard 059 2001, 40 species within the SGBR have protected status; 4 are in danger of extinction, 20 are threatened, 8 receive special protection, and 8 are rare. Likewise, 27 species are endemic to Mexico, only in the territory of the SGBR, and 92 species are neotropical migrants. Among these species are the charismatic and threatened great curassow (*Crax rubra),* crested guan *(Penelope purpurascens),* red-crowned parrot *(Amazona viridigenalis),* military macaw *(Ara militaris),* bearded wood-partridge *(Dendrortyx barbatus)* and seasonal migrants such as the maroon-fronted parrot *(Rhynchopsitta terrisii).* In 1989 a strong citizen movement began to conserve this area with the formation of the Grupo Ecológico Sierra Gorda I.A.P. In collaboration with the local community, this group has taken action to effectively protected bird communities as well as other groups of fauna in this area. Our diverse strategies vary from environmental education to the establishment of private reserves and payment for environmental services, in 25,000 ha of tropical and temperate forests.

Pennington*, D. N.; Blair, R. B.

The Conservation Value of Urban Riparian Areas for Landbirds During Spring Migration: Land Cover, Scale, and Vegetation Effects. Derric N. Pennington, University of Minnesota, St. Paul, MN; Blair, R.B., University of Minnesota, St Paul, MN. penn0107@umn.edu

Urbanization changes bird community structure during the breeding season but little is known about its effects on migrating

birds. We examined patterns of habitat use by birds at the local and landscape level during the 2002 spring migration at 71 riparian plots along an urban gradient in Cincinnati, Ohio, USA. Using linear regression, we examined variation in relative density, species richness, and evenness of four migratory guilds associated with natural land covers and building area at four scales (50, 100, 250, 500 m). We also examined the influence of local vegetation using multiple regression models. As building area increased, streamside woodlands tended to be narrower and have fewer native trees and shrubs. Bird species richness and evenness increased with high tree cover and low building area, while relative density varied in response. In general, native birds were positively associated with tree cover (within 250 to 500 m of stream) and native vegetation, and negatively with building area (within 250 m); exotic species responded inversely. Short-distance migrants and permanent residents displayed the weakest responses. Neotropical migrants displayed the strongest responses corresponding to areas of wide riparian forests and less development (> 250 m). Potentially breeding Neotropical migrants increased with wider riparian forests (> 500 m) without buildings, while en-route migrants utilized areas having a wide buffer of tree cover (250 to 500 m) regardless of buildings; both were positively associated with native vegetation composition and mature trees. Consequently, developed areas incorporating high native tree cover are important for conserving Neotropical migrants during stopover.

Pérez°, A.; Delgado, F.; González, H. J.

Relación Ornitocenosis - Fitocenosis en la Reserva de Biosfera Península de Guanahacabibes, Cuba. Hipotesis de Recuperacion Intermedia. Alina Pérez: Delgado, F.; González, H.J. Centro de Investigaciones y Servicios Ambientales ECOVIDA, CITMA, Pinar del Río. alina@ecovida.pinar.cu

Se valora la relación ornitocenosis – fitocenosis en formación de bosque semideciduo de la Reserva de Biosfera Península de Guanahacabibes, aplicando métodos de parcelas circulares, redes ornitológicas y parcelas de vegetación. Se detallan características de las comunidades de aves a diferentes momentos de recuperación después de aprovechamientos forestales considerando, áreas recientemente taladas (5 ± 2 años recuperándose), con un tiempo de recuperación entre y 15 ± 2 años y con mas de 30 años sin intervenir. En cada tratamiento se analiza arribo de especies norteñas, Riqueza específica, Abundancia Relativa, Tasa de captura y relación de indicadores ecológicos con variables de vegetación. Es detectado un incremento de valores de variables en período intermedio de recuperación tanto en términos ornitológicos como de vegetación y se propone nueva hipótesis al respecto. Confirmo posibilidad de estar a tiempo completo en el evento llegando y regresando en las fechas estimadas.

Peterjohn°, B.; Martin, E.; Kelling, S. K.

Developing a Comprehensive Plan for Integrating and Managing Bird Population Monitoring Data: Challenges and Opportunities. Bruce Peterjohn, USGS, Laurel, MD; Martin, E., USGS, Gainesville, FL; Kelling, S.K., CLO, Ithaca, NY. bpeterjohn@usgs.gov.

A recent report from the U.S. North American Bird Conservation Initiative (NABCI) Monitoring Subcommittee identified the development of a comprehensive plan for integrating and managing bird population monitoring data as an integral component for improving monitoring activities across North America, a recommendation also applicable to the rest of the Western Hemisphere. Developing a comprehensive plan for managing monitoring data presents a number of significant challenges related to data quality, accessibility, archiving strategies, and new methods for synthesis, exploration and analysis. To address these challenges, the U.S. NABCI Monitoring Subcommittee recommended developing standards for data processing, accessibility, and repositories to improve efficiency and management of bird monitoring data. While these recommendations provide a framework towards developing a comprehensive plan for the delivery and use of monitoring data, an overview of current initiatives and bird monitoring data systems is needed to identify common goals, partnerships, and activities to facilitate their implementation. Issues related to the subcommittee's recommendations will be presented in an overview to provide a context for subsequent presentations and discussions during this session.

Desarrollo de un Plan Comprensivo Para la Integración y Manejo de Datos de Monitoreo Poblacional de Aves: Desafíos y Oportunidades

Un informe reciente del subcomité de monitoreo de la Iniciativa para la Conservación de las Aves de América del Norte (NABCI) en EE.UU. identificó el desarrollo de un plan comprensivo para la integración y el manejo de datos de monitoreo de aves como un componente integral para mejorar las actividades de monitoreo en Norteamérica, lo cual es una recomendación que también se puede aplicar al resto del Hemisferio Occidental. El desarrollo de un plan comprensivo para el manejo de datos de monitoreo presenta varios desafíos relacionados con calidad y accesibilidad de datos, estrategias para archivo de datos, y nuevos métodos para la síntesis, exploración y análisis de datos. Para atender estos desafíos, el subcomité de monitoreo de NABCI en EE.UU. recomendó el desarrollo de estándares para procesamiento y accesibilidad de datos, así como repositorios de datos para mejorar la eficiencia y el manejo de datos de monitoreo de aves. Aunque estas recomendaciones proveen un marco para iniciar el desarrollo de un plan comprensivo para distribución y uso de datos de monitoreo, se necesita una descripción de actividades y sistemas de datos de monitoreo de aves existentes para identificar metas comunes, posibles colaboraciones, y actividades que faciliten su implementación. Información relacionada con las recomendaciones del subcomité será presentada en un resumen general para proveer contexto a las presentaciones y discusión que seguirán en esta sesión.

Petty°, R.; Braus, J.

Connecting Bird Conservation Plans to Education Programs—An Excel Tool for Defining Audiences and Developing Programs. Robert Petty, National Audubon Society, Braus J., National Audubon Society, Washington D.C. rpetty@audubon.org

Identifying conservation targets and building an education program around those based on measurable objectives was the challenge as a conservation initiative was developed for the Bitterroot Watershed in western Montana. Through the process of defining a specific site-based conservation strategy for the valley, an Excel-based tool for detailing conservation targets, identifying appropriate audiences and building education programs for those audiences was developed to stream-line the process. The focus of this conservation effort was MT BHCA8 in the Intermountain West Joint Venture—the Bitterroot Watershed. Building on the conservation targets already identified in the Montana Bird Conservation Plan (Casey et. al.) a process was developed to clearly identify appropriate education target audiences that were essential in achieving measurable conservation for the targets outlined in the plan. The process was designed into an Excel workbook that has since become a basis for a

planning tool in the larger Conservation Education Toolkit featured in the presentation: A Toolkit for Achieving Conservation through Education.

This conservation education planning tool is adaptable to other Bird Habitat Conservation Areas or any discrete landscape where habitat or species is the focus of conservation efforts. This session will offer an overview of this conservation education planning tool.

Phillips°, T.

Tracking the Nesting Success of North America's Breeding Birds through NestWatch. Tina Phillips, CLO, Ithaca, NY. cbp6@cornell.edu.

Dating back to 1965, the Cornell Lab of Ornithology's Nest Record Card Program (NRCP) has utilized the interests and talents of birdwatchers to collect valuable information about North America's breeding birds. Despite the absence of a centralized digital database, these records have been used to study changes in avian breeding behaviors in over 100 peer reviewed journals. NestWatch, <www.nestwatch.org> the Cornell Lab of Ornithology's newest citizen science project, is poised to reenergize the NCRP by incorporating the more than 300,000+ nest records into its new state-of-the-art database. Funded by NSF and developed in collaboration with the Smithsonian Migratory Bird Center, NestWatch will engage birdwatchers of all skill levels to effectively monitor bird nests, collect breeding data, and submit their nest records online. Unlike many other monitoring programs, NestWatch will accept data from ALL nesting birds in North America thereby allowing us to detect changes in reproductive timing and fledging success across a range of species and geographic areas. The records submitted by our network of citizen scientists coupled with the historic data are a powerful tool to help us monitor the success of nesting birds. These observations also will contribute an important share of the biological data required to identify new threats and address impacts of large-scale changes like global climate change, urbanization, and changing land use patterns on birds.

Pidgeon°, A. M. ; Radeloff, V. C.

Patterns of Housing Growth in the Neighborhood of IBAs. Anna M. Pidgeon, UW, Madison, WI; Radeloff, V.C., UW, Madison, WI. apidgeon@wisc.edu.

The Important Bird Areas (IBA) Program, administered by the National Audubon Society in the U.S., contributes to the North American Bird Conservation Initiative by identifying, prioritizing, and working to conserve places that are critical to the survival of bird populations. Identification of a site as an IBA signifies its unique significance for birds. Yet the ability of IBAs to provide high quality habitat for birds- now and in the future - depends on factors and processes not only within, but also outside of IBA boundaries. Housing density is one factor that has a strong effect on landcover, on ecological processes, and on ecosystem services. We analyzed the change in housing density over the last three decades in the vicinity of IBAs in three focal areas – Virginia and North Carolina, New York and Pennsylvania, and Missouri and Arkansas. We found that housing density has increased substantially in all three areas over this period, but that there are regional differences in the rate of change through time. Strongest increases were in the 1970s but recent growth rates were also strong. Understanding patterns and rates of housing density change is essential for effectively targeting priority conservation actions. The delineation of IBAs was a critical first step. Securing the ecosystem functions and services that led to their designation requires monitoring external agents of change, including housing growth.

Pitkin°, M.

Mist-netting With the Public: A Guide for Communicating Science through Bird Banding. Melissa Pitkin, PRBO, Petaluma, CA. mpitkin@prbo.org

Directly involving the public in scientific monitoring and research bridges the gap between scientists and the public. In addition to providing valuable scientific information on bird populations, mist netting presents a unique opportunity to demonstrate science-in-action to a wide variety of audiences. To facilitate this opportunity, the manual *Mist netting with the public: A guide for communicating science through bird banding demonstrations,* has been published. Recommendations in the manual are based on feedback from 25 organizations that band birds in North America. Results from the survey of these organizations will be presented and compared with past efforts to quantify and facilitate education programs in conjunction with mist netting. In addition, this paper will go over some of the educational resources available to facilitate education at bird banding stations.

Pitkin°, M.; DiGaudio, R.; Gardali, T.

Customizing Conservation Plans for the Local Level. Melissa Pitkin, PRBO, Petaluma, CA; DiGaudio R.; Gardali, T. mpitkin@prbo.org

In recognition of habitat loss and degradation as the major cause of bird population declines in California, California Partners In Flight created habitat based Bird Conservation Plans (BCP's). The BCP's take a statewide approach to habitat management and restoration by providing a synthesis of research and corresponding recommendations to improve and restore habitat for birds. The conservation plans are an excellent resource for broad group of audiences including researchers, habitat managers, private landowners, and other scientists across the entire state. Feedback from local managers and landowners indicates a desire for more regionally focused plans. To make the content of the statewide plans more applicable at the regional level, PRBO Conservation Science and California Partners In Flight have created a series of customized conservation plans and tools tailored to different regions. Examples of these tailored regional guides are *Habitat Enhancement Guides* and *Pocket Guides to Common Birds* of a region. Following a simple process, these tools make the information contained in the BCP's easily accessible and relevant to habitat managers and landowners at the local level. Modifying broad scale conservation plans for the local level is a model approach useful to any conservation planning effort.

Powell*, L. L.; Matsuoka, S.; Shaw, D.

Habitat Use and Reproductive Ecology of Rusty Blackbirds in New England and Alaska.*Powell, L., UM, Orono, ME; Matsuoka, S., USFWS, Anchorage, AK; Shaw, D., ABO, Fairbanks, AK, Luke_Powell@umit.maine.edu.

The Rusty Blackbird (*Euphagus carolinus*) has suffered one of the steepest declines of any bird in North America. The cause of its decline remains unknown and its breeding ecology largely unstudied. To address this gap, we examined the distribution, abundance, and reproductive success of Rusty Blackbirds in relation to habitat in New England and interior and south-central Alaska. In New England, the species is rare and breeds in relatively small wetlands where it is often associated with bea-

ver ponds; exposed mud; numerous puddles; and dense, young conifers (*Picea* or *Abies* spp.). In Alaska, it is still abundant and breeds in wetlands with open water and emergent vegetation or seasonally flooded meadows. Blackbirds foraged on aquatic insects (e.g. *Odonata*) while wading in shallow water and nested within 75 m of open water. Vegetation used for nest sites varied regionally with nests in New England placed in spruce or firs, nests in south-central Alaska placed in black spruce (*P. mariana*, live or dead), and nests in interior Alaska placed in willow (*Salix* spp.). Flexibility in use of nest sites suggests that nesting habitat is not likely limited and that specific foraging requirements may be more important in defining breeding habitats. Egg viability and nest success were not aberrantly low in New England or Alaska and may not be leading factors causing the species' steep decline. Investigations are now needed to determine when, where, and why deficits in adult or juvenile survival are limiting Rusty Blackbird population growth.

Present°, T.

Engaging Owners of Working Lands in Bird Conservation: Perspectives from Audubon Projects. Tess Present, National Audubon Society, Ivyland, PA, tpresent@audubon.org

There is increasing acknowledgement of the enormous need, great potential, and significant opportunity for improving native-bird habitat and diversity on working lands. Through a growing number of projects from California to Vermont, Audubon is working with property owners, managers, and lessees of croplands, grazing lands, and forest lands to enhance the ecological function and habitat value of these lands for birds and wildlife. All conservation projects have unique challenges but our working lands experience underscores the importance of (1) building trust and credibility with landowners, managers, and lessees whom are often non-traditional partners, (2) understanding and addressing landowner, manager, and lessee needs and motivations – including the need to balance profitability and sustainability, (3) building diverse community partnerships to enable conservation impact at a landscape scale, and (4) designing projects to achieve multiple benefits for multiple stakeholders.

Profiles of Audubon projects of varying scale and duration will be shared, focusing on factors that have either impeded or facilitated accomplishment of conservation objectives, and overall lessons learned.

Ralph°, C. J.; Salas, L.; Kelling, S.

A New Paradigm from Observational and Banding Data for a Comprehensive Understanding of Landbird Life History Phenomena. C. John Ralph, USFS, Redwood Sciences Laboratory, Arcata, CA; Salas, L., PRBO, Petaluma, CA. cralph@fs.fed.us

Effective conservation requires a thorough and detailed understanding of the spatial and temporal strategies of bird species, both common and rare. Recent innovations in computer technology and web-based data retrieval have now provided a quantum leap in our abilities to collect, collate, analyze and understand various adaptive strategies of birds in all seasons. New visualizations of seasonal dynamics of landbird populations, now available from citizen science programs that collect observational data for many areas of the world, provide a dynamic continent-wide picture of migration, breeding, and wintering strategies, unavailable just a very few years ago. We have recently taken data from monitoring at constant-effort banding stations to further understand what individual birds are doing during the various stages of their life histories. It is now possible to determine the precise timing and location of various critical events, such as moult and details of the breeding, dispersal, and migration. For example, using weight, fat, and measurements, it is now possible to reveal precise indications of the condition of birds at various locations (e.g. mountains, coastal, deserts) and times of year, and therefore their strategies for survival, and to relate the results to observational data visualizations. We will illustrate this with several resident and migratory species of birds across the Americas.

Acciones de conservación efectivas requieren un entendimiento complete y detallado de las estrategias temporales y espaciales de diversas especies, tanto raras como comunes. Innovaciones recientes en tecnologías de computación y programación, en conjunto con procesos de colección de datos basados en la internet, han proveido un brinco quántico en nuestras habilidades de entender varias estrategias adaptativas de aves en todo el año. Las nuevas visualizaciones de dinámicas estacionales de poblaciones de aves terrestres, disponibles ahorade proyectos de ciudadanos científicos de varias partes del mundo, proveen una imagen dinámica del continente entero con respecto a estrategias de migración, reproducción y sobrevivencia en el invierno, las cuales no eran disponibles tan solo unos años antes. Hemos recientemente tomado datos de monitoreo en estaciones de esfuerzo constante, para entender qué están haciendo las aves durante las varias etapas de su historia de vida. Es ahora posible determinar el momento preciso y ubicación de varios eventos críticos, como son la muda y detalles de reproducción, dispersion y estaciones de migración. Por ejemplo, usando peso, grasa corporal y otras medidas, es ahora posible descubrir indicadores precisos de la condición de las aves en varias localidaded (e.g., en zonas montañosas, costas, desiertos) y epocas del año, y por ende elucidar sus estrategias de subrevivencia y poder relacionar los resultados a visualizaciones de datos observacionales. Ilustraremos estos métodos con varias especies de aves de las Américas, residentes y migratorias.

Raymundo°, A. A. ; Buehler, D. A.

Monitoring the Effect of Coastal Development on Avian Migration Stopover Habitat in Sian Ka'an Biosphere Reserve, Quintana Roo, Mexico. Raymundo A., UT, Knoxville, TN; Buehler D., UT, Knoxville, TN. araymund@utk.edu.

The eastern coastal ecosystem of the Yucatan Peninsula is one of the most important places for bird migration. Unfortunately, this ecosystem is under increasing development pressure. Conservation of this habitat is very important because at least half of all Nearctic Neotropical migrants depend on this region for stopover or wintering habitat. Although many organizations have been working to protect these habitats, the effects of development on birds have not been well documented. This information is necessary as a basis for developing a strategy for sustainable development practices for the Mexican government that will incorporate habitat conservation. We selected six sites with three differing levels of coastal development (low, medium and high) in which we monitored fall migration in Sian Ka'an Biosphere Reserve, Quintana Roo, Mexico. We set up 10 mist-nets per site from September to December 2006-2007. We banded for a total of 39 or 40 days per site. To complement the capture data, we conducted transect surveys. We sampled for a total of 2180.75, 2633 and 2333.45 net-hours for the low, medium and high development sites, respectively. We caught 3.14, 10.62, and 13.81 ind/10 net hours for the high, medium and low development levels, respectively. We captured a total of 109 species across all sites including 57 species for the high development level, and 72 species for medium and 69 for the low-level sites.

This project is a pioneer study in that area, and it will provide well documented data about the effects of coastal development on migratory birds.

Monitoreo Del Efecto Del Desarrollo Costero En El Hábitat De Parada Durante La Migración De Otoño En La Reserva De La Biosfera Sian Ka'an, Quintana Roo, México

La duna costera del Este de la Península Yucatán es uno de los lugares más importantes para la migración de aves. Desafortunadamente, este ecosistema esta bajo una constante presión debida al desarrollo turístico o urbano que ocurre en el área. Por tal motivo la conservación de dicho hábitat resulta muy importante debido a que mas de la mitad las aves migratorias Nearticas-Neotropicales utilizan esta región ya sea como zona de descanso o hábitat de invierno. Aunque muchas organizaciones han estado trabajando para proteger estos hábitats, los efectos del desarrollo costero en la avifauna no han sido bien documentados. Esta información es necesaria para poder implementar una estrategia de conservación, en la que se fomente el desarrollo sustentable de la zona. Se seleccionaron seis sitos con tres niveles de desarrollo costero (bajo, medio y alto) en la Reserva de la Biosfera Sian Ka'an, en los cuales la migración de otoño fue monitoreada de Septiembre a Diciembre del 2006-2007. En cada sitio se bandeo un total de 39-40 días, utilizando 10 redes de niebla. El uso de transectos diarios, fue necesario para complementar los datos de captura de las redes. Con un esfuerzo de 2180.75, 2633 y 2333.45 horas-red para los sitios con desarrollo bajo, medio y alto respectivamente, se capturaron un total 6,536 individuos, correspondientes a 109 especies. El presente proyecto, es un estudio pionero que pretende proveer la suficiente información sobre los efectos del desarrollo costero en la comunidad de aves en la reserva.

Reel°, S.; Hutto, R. L.

Birding Trails as Conservation Tools: Telling Stories about Fire. Susan Reel, USFS, Missoula, MT; Hutto, R. UM Avian Science Center, Missoula, MT. sreel@fs.fed.us

Birding trails are only as good as the stories they tell. Many proponents of birding trails and wildlife viewing stress the benefits these efforts have on local economies, or how they increase the public awareness of birds and provide great recreational experiences, but perhaps our birding trails focus too much on where to view birds, and miss a critical opportunity to include important conservation messages that may, in the long run, help us preserve the very things we treasure.

I'd like to show how we can accomplish our conservation goals by creating strategically placed birding trails that feature important habitats and that explain conservation issues. For example, one conservation issue central to the ecology of the Rocky Mountain West (and other regions in the world) is wildland fire. Fire is a tremendously misunderstood, but important ecological process. We can feature post-fire habitats, which are a great place to see fire-dependent birds such as Black-backed Woodpeckers (and a highly sought-after species), and include conservation messages that explain why we need the process of fire to create and maintain these critical habitats.

Reel°, S.; Hutto, R.L.

Black-backed Woodpeckers Catch People on Fire: Using birds as a way to connect people to nature conservation. Susan Reel, USFS, Missoula, MT; Hutto, R. UM Avian Science Center, Missoula, MT. sreel@fs.fed.us

Birds are a great tool for exploring conservation issues and critical ecological processes that are often misunderstood by the public. Fire, and its effect on forested landscapes, is one such process that is central to the ecology of the Rocky Mountain West. The public often views fire as a catastrophe that needs to be prevented because it leaves the forest lifeless and destroyed. To reach our conservation goals, we need to provide school children and the general public opportunities to see "first-hand" how fire affects many bird and plant species in beneficial ways. Taking children and adults to see these blackened landscapes to explore how some bird species, such as the Black-backed Woodpecker, Townsend's Solitaire, and Mountain Bluebird, not only thrive, but probably *depend* on post-fire habitats helps us build support for accepting and appreciating the role natural disturbances play in a healthy environment. We'll share a variety of educational curricula developed for elementary and secondary schools, and outreach materials for the general public and discuss the success of our efforts.

Rempel°, R.

Developing a Focal Species Bioassay for Assessment of Songbird Conservation Design Strategies. Robert S. Rempel, CNFER, OMNR, Lakehead University, Canada. rob.rempel@ontario.ca

Conservation of biodiversity is now a firmly entrenched objective of sustainable forest management, and emulating natural disturbance has been widely adopted as a conservation design strategy. Yet the foundation for this approach is still very much a hypothesis based on first principals, and there has been little rigorous testing. In addition, practical constraints mean that the full range and character of natural patterns can never be implemented, so decisions must still be made in setting forest management targets and levels. An alternative, but complementary approach is to select a focal group of species and use their habitat requirements to define the range of conditions that should be maintained on the landscape. In this study I tested the effect of landscape versus local scale factors for explaining relative abundance of 30 forest songbird species in boreal Ontario, and then examined components of variance and used multivariate analysis and logistic regression to describe these relationships in more detail. 13 species were selected with habitat associations ranging from high to low edge density, homogeneous to heterogeneous forest matrix, hardwood to softwood dominated overstory, young to old stands, and open to closed canopy. I found that variations in mature forest cover amount and configuration had relatively little influence on the overall boreal forest songbird community, but that individual species differ substantively in their response to these variables. This suite of 13 species can also serve as a "bioassay" for evaluating the effectiveness of conservation design strategies such as the emulation of natural disturbance.

Rempel°, R.

Development and Evaluation of Coarse-filter Policy Options for the Conservation of Forest Songbird Communities. Robert S. Rempel, CNFER, OMNR, Lakehead University, Canada. rob.rempel@ontario.ca

Changes in mature forest cover amount, composition and configuration can be of significant consequence to wildlife populations. The response of wildlife to forest patterns is of concern to forest managers because it lies at the heart of competing conservation design approaches such as aggregated versus dispersed harvest block layouts. In this study we applied a focal species bioassay to evaluate the outcomes of simulated forest management options on biodiversity conservation objectives. Scenarios were assessed in the context of a broad range of for-

est structure and pattern that would be expected to occur under natural disturbance and succession processes. Spatial habitat models were used to predict the effects of varying degrees of mature forest cover amount, composition and configuration on habitat occupancy for a set of 13 focal songbird species. We used a spatially-explicit harvest scheduling program to model forest management options and simulate future forest conditions resulting from alternative forest management scenarios, and used a process-based fire-simulation model to simulate future forest conditions resulting from natural wildfire disturbance. Spatial pattern signatures were derived for both habitat occupancy and forest conditions, and these were placed in the context of the simulated range of natural variation. We found that forest management options that create linear strips of old forest deviate the most from simulated natural patterns and had the greatest negative effects on habitat occupancy, while policy options that specify deferment and timing of harvest for large blocks helped insure the stable presence of an intact mature forest matrix over time.

Rice°, R.

Consuming Biodiversity: the Concept of Shade Coffee as Habitat. Robert Rice, SMBC-NZP, Washington, D.C. rice.r@si.edu.

A number of salient issues currently face what we could call the shade coffee "movement"—ranging from the scientific underpinnings of the concept of "coffee as habitat" to the challenges confronting a number of people in the coffee commodity chain. Since emerging onto the specialty coffee scene more than ten years ago, shade coffee has gone from ugly duckling to showcased specimen within certain quarters of the market. Initiatives promoted by Conservation International, Rain Forest Alliance and the Smithsonian Migratory Bird Center have all impacted the specialty coffee industry to varying degrees. And, with shade coffee's significant overlap with Fair Trade coffee holdings, increasing numbers of consumers are aware that coffee has a potential conservation dimension. An initial explanation of coffee generally and shade coffee in particular is followed by a brief overview of the various initiatives involved in "sustainable" coffee and how these efforts have affected the industry from landscape to latte.

Varios temas enfrentan el sector o "movimiento" de café bajo sombra, y varian de las pruebas científicas del concepto de "café como habitat' hacia los desafíos pegajosos que halan a los involucrados por todo la cadena comercial del rubro. El café bajo sombra, junto con "café sostenible", ha transformado en la última década de un bicho raro a algo muy popular dentro ciertos rincones del mercado de los cafés especiales. Grupos como Conservation International, Rainforest Alliance y el Smithsonian Migratory Bird Center han promovido initiativas y programas que han impactado el sector en varias maneras. Y, con bastante translape entre café bajo sombra y comercio justo en los paises de orígen, muchos consumidores estan dando cuenta que el café tiene una dimension conservacionista. Esta charla da una explicación inicial del café en general y café bajo sombra específico, luego siguido por un breve panorama de las initiativas enfocado en "café sostenible" y como estos esfuerzos han afectado la industria desde la finca hacia la taza del café.

Rideout°, C.; Mueller, A.; Osborne, S.; Piorkowski, M.

The Ivory-billed Woodpecker Project: Search Efforts and Findings, Partnership Development, and Outreach in the Big Woods of Arkansas (USA). Catherine Rideout, AGFC, Little Rock, AR; Allan Mueller, TNC, Little Rock, AR; Steve Osborne, NWTF, Russellville, AR; Martin Piorkowski, CLO, Ithaca, NY. cwrideout@agfc.state.ar.us

In April 2005, the rediscovery of at least one Ivory-billed Woodpecker in the Big Woods of Arkansas was announced by the Department of the Interior. Since 2005, a strong partnership built upon years of coordinated conservation and management in Arkansas has tackled multiple project aspects including the continued search for the Ivory-billed Woodpecker, and outreach and education in the communities of eastern Arkansas. A variety of groups conducted and implemented various search strategies in the three years since the announcement including foot and boat searches, cavity inventories, and foraging and habitat evaluation; all to refine high priority search areas. Professional as well as public participants reported potential auditory and visual encounters to complement ongoing search efforts. Coordination among various entities has been central to this effort and has involved partnership building and communication among state and federal agencies, NGOs, and the local communities. Local outreach and education occurred through a variety of activities and methods, including the development of the "Corridor of Hope" team, consisting of individuals from nearby communities and led by the state wildlife agency.

El proyecto Picamaderos Picomarfil: Esfuerzos y Resultados de las Búsquedas, Desarrollo de la Asociación y Extensión en los Grandes Bosques de Arkansas.

En abril de 2005, el Departamento del Interior anunció el redescubrimiento de por lo menos un picamaderos picomarfil en los Grandes Bosques de Arkansas. Desde 2005, una fuerte asociación construida tras años de conservación y administración coordinada en Arkansas ha abordado diversos aspectos del proyecto que incluyen la búsqueda continua del picamaderos picomarfil, y la extensión y educación en las comunidades del este de Arkansas. Varios grupos llevaron a cabo e implementaron distintas estrategias de búsqueda en los tres años desde el anuncio incluyendo búsquedas a pie y en bote, inventarios de cavidades y evaluación de la alimentación y el hábitat, todo para delimitar las áreas de búsqueda de mayor prioridad. Los participantes profesionales así como los independientes informaron posibles encuentros auditivos y visuales para complementar las tareas de búsqueda actuales. La coordinación entre las diversas entidades ha sido fundamental para esta tarea y ha implicado la creación de asociaciones y la comunicación entre agencias estatales y federales, organizaciones no gubernamentales y comunidades locales. La extensión y educación local se realizó mediante una variedad de actividades y métodos, que incluyen el desarrollo del equipo "Corredor de Esperanza", formado por miembros de comunidades cercanas y dirigido por la agencia de vida silvestre estatal.

Rimmer°, C. C.; McFarland, K. P.; Townsend, J. M.

Elucidating the Limiting Factors of a Rare, Declining Species: Bicknell's Thrush. Christopher C. Rimmer, McFarland, K.P., Vermont Center for Ecostudies, Norwich, VT; Townsend, J.M., State University of New York, Syracuse, NY. crimmer@vtecostudies.org

Bicknell's Thrush, one of North America's most rare and at-risk songbirds, is declining across its geographically restricted breeding range. Wintering is confined to the Greater Antilles, with > 90% of the global population concentrated on Hispaniola, which has suffered severe forest habitat loss in recent decades. The species' breeding adult sex ratio of > 2 males per female is poorly understood but may be linked to ecological constraints on the wintering grounds, where sexual habitat segregation appears to exist. We will present data from radio telemetry, mark-recapture mist-netting, food abundance sampling, and habitat characterization to illustrate that female Bicknell's Thrushes may occupy lower quality habitats, with consequences for over winter survivorship and possible seasonal carry-over effects. Limiting factors during all phases of the annual cycle likely affect the population dynamics of Bicknell's Thrush, but identifying and addressing those that pose the greatest risk are fundamental to effective conservation.

Ripper°, D.; McLachlan, M.; Toombs, T.; VerCauteren, T. L.

Assessment of Conservation Reserve Program Fields within Current Lesser Prairie-Chicken Range. Dana Ripper, RMBO, Fort Collins, CO; McLachlan, M., PLJV, Grand Island, NE; Toombs, T., ED, Boulder, CO; VerCauteren, T., RMBO, Fort Collins, CO. dana.ripper@rmbo.org.

Populations of Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*; LEPC) have declined by more than 90%, mainly due to the loss and conversion of sand-sage and mixed-grass prairie habitat. Conservation Reserve Program (CRP) fields contribute greatly to the remaining habitat of the LEPC; however, approximately three million acres of CRP within the current LEPC distribution will soon expire, and potentially be re-converted to cropland. We assessed the condition of 1019 CRP fields representing more than 126,000 acres in LEPC range in Colorado, Kansas, Oklahoma, New Mexico, and Texas. Fields displayed high variability in dominant grass species, grass species richness, and grass-to-forb ratios. Variability was evident both within and between Conservation Practices (CPs), as well as between states. The assessment of CRP condition is the first step in a process to help land managers target LEPC conservation efforts. Information collected will be placed in a landscape-level context to identify priority areas for CRP re-enrollment with the goal of maintaining and improving LEPC habitat.

Robinson°, S. R.

Breeding Birds on a Developed Recreational Site. Scott R. Robinson, BLM, Coeur d'Alene, ID. scott_robinson@blm.gov.

The Bureau of Land Management (BLM) constructed a seasonal, day-use recreation facility in 2002 and 2003. This study evaluated the breeding birds during 10 years: 5 years before construction with 5 years during and after construction of this facility. Forty-four species with established breeding territories were identified at least once during this study. The average number of species remained the same during both time periods. The finite number of territories, as well as the standard measurement per 40 ha, was also similar during both time periods. With few exceptions, the observed data supports the conclusion that the pre- and post-samples were not significantly different from one another. The major reason for this conclusion is that most trees and shrubs that provided nesting habitat remained standing along the water's edge after construction was completed. Human disturbances were minimized because most visitors used the site primarily to launch their boats and then left to play on the water during the day.

Crianza de Pájaros en un Sitio Recreacional Desarrollado.

La Agencia de la Gerencia de la Tierra (BLM) construyó una facilidad recreacional estacional, utiliza diurna en 2002 y 2003. Este estudio evaluó los pájaros de crianza durante diez años: cinco años antes de la construcción con cinco años durante y después de la construcción de esta facilidad. Cuarenta y cuatro especies con los territorios de crianza establecidos fueron identificadas por lo menos una vez durante este estudio. El número medio de las especies seguía siendo igual durante ambos períodos. El número finito de territorios, así como la medida estándar por 40 hectáreas, era también similar durante ambos períodos. Con pocas excepciones, los datos observados apoyan la conclusión que las pre- y las post-muestras no eran perceptiblemente diferentes a partir de la uno otra. La razón principal de esta conclusión es que la mayoría de los árboles y de los arbustos que proporcionaron el hábitat del nidificación seguían siendo que estaban parados a lo largo del borde del agua después de que la construcción fuera terminada. Los disturbios humanos fueron reducidos al mínimo porque la mayoría de los visitantes utilizaron el sitio sobre todo para lanzar sus barcos y entonces se fueron al juego en el agua durante el día.

Rodriguez°, W.

Ducación Ambiental en Escuelas Cercanas a las Fincas de Café Certificadas con el Sello Rainforest Alliance. Rodríguez, W. Auditor Asociado a la Dirección de Certificación Sostenible SalvaNATURA. rodriguezc@navegante.com.sv.

Durante cuatro años he trabajado como auditor del Programa de Agricultura Sostenible y como asesor de propietarios de fincas de café certificadas con el sello Rainforest Alliance. El principio siete de las normas requiere de educación ambiental en las escuelas, para lo cual se ha preparado un programa de educación ambiental, para niños entre los 7 a los 12 años este programa, incluye lecturas sobre las aves, dramatizaciones, adivinanzas, conocimiento de las biodiversidad que viven en las fincas, giras guiadas por las fincas, programa para dejar de usar cachanflacas, responsabilidad ambiental y material para las giras de los alumnos. Adicionalmente las fincas manejas un programa para la conservación de ecosistemas y vida silvestre.

Rohrbaugh°, R.; Charif, R.; Farnsworth, A.; Goldberg, K.; Song, D.; Luneau, D.

Acoustic and Digital Image Technologies for Detecting and Monitoring Ivory-billed Woodpeckers and Other Avifauna. Ron Rohrbaugh, CLO, Ithaca, NY; Charif, R., CLO, Ithaca, NY; Farnsworth, A., CLO, Ithaca, NY; Goldberg, K., UC Berkeley, Berkeley, CA; Song, D., Texas A&M, College Station, TX; Luneau, D., UA, Little Rock, AR. rwr8@cornell.edu.

Intensive search efforts for the Ivory-billed Woodpecker (*Campephilus principalis*) have resulted in numerous technological advancements related to bird monitoring methodologies. These include autonomous acoustic and image recording systems with potential applications for remote detection and constant-effort monitoring of avian populations. These devices are important for monitoring endangered species and conducting spatially explicit avian research. Exceedingly rare species, especially those in remote habitats, can go unobserved for long periods of time, making it difficult (or impossible) to determine their status (Scott et al. in press). The human and financial resources required to conduct surveys of sufficient magnitude to confidently assess that a species is extinct are frequently prohibitive, making autonomous systems an attractive alternative for future endangered species research. Furthermore, these systems, especially

when networked to provide real-time data, provide the ability to gather important population and behavioral information on more common species. Some example applications include monitoring migration via nocturnal flight calls, determining volume and composition of raptor migration, and identifying timing and causation of bird strikes at wind turbines. Future successful development and application of these technologies will rely on strong partnerships between biologists, engineers, and information systems specialists.

Tecnologías Acústicas y de Imagen Digital para Detectar y Monitorear el Picamaderos Picomarfil y otras Aves.

Los esfuerzos exhaustivos de búsqueda del picamaderos picomarfil (Campephilus principalis) dieron como resultado varios avances tecnológicos relacionados con las tecnologías de monitoreo de aves. Éstos incluyen los sistemas autónomos de grabación acústica y de imagen con posibles aplicaciones para la detección remota y el monitoreo del esfuerzo constante de la población aviaria. Estos dispositivos son importantes para monitorear las especies en peligro de extinción y realizar una investigación aviaria espacialmente fehaciente. Las especies muy raras, en especial las de hábitats remotos, pueden pasar inadvertidas durante largos períodos, lo que dificulta (o imposibilita) la determinación de su estado (Scott et al. en prensa). Por lo general, los recursos humanos y financieros necesarios para realizar estudios de magnitud suficiente para determinar que una especie está extinta son prohibitivos, convirtiendo a los sistemas autónomos en una alternativa atractiva para la investigación futura de especies en peligro de extinción. Además, estos sistemas, sobre todo cuando se conectan en red para proporcionar información en tiempo real, brindan la capacidad para recolectar información importante sobre la población y el comportamiento en más especies comunes. Algunos ejemplos de aplicaciones incluyen controlar la migración mediante los cantos de vuelo nocturno, determinar el volumen y la composición de la migración de las aves de rapiña e identificar la sincronización y la causalidad de los golpes de las aves en las turbinas de viento. El desarrollo y la aplicación futura y exitosa de estas tecnologías dependerán de fuertes asociaciones entre biólogos, ingenieros y especialistas en sistemas de información

Rojo°, A.

Bird Management in Mexico. Ariel Rojo. Independent Consultant, Mexico City. arc900@prodigy.net.mx

Traditionally, Mexico people use many bird species, or parts of them, with different purposes: feeding, ornamental, religious and hunting. Also, many people has birds in their homes, and related with this, exists many people dedicated to capture birds in the wild and sell it in the markets (*capturadores*), many of them are organized in groups

In the last decade Mexico wildlife management, birds included, has pass through many and deep changes. The government administration introduced a new legal framework, a wildlife Law, and developed a scheme called UMA (Wildlife Management Units). Basically the UMA requires that the landowner register his land and develop a management plan in order to obtain a harvest quota. This last issue implies that the UMA technician develop a survey in order to get an estimate of the population in which they are interested.

There are many issues scientific issues related with this. One of the focal points were to define standarized methods of survey for all UMAs, and also to define sustainable harvest quotas considering not just the UMA data and scale, but also the bird (species) population status. In order to develop this properly, we organized a workshop with many specialists in the main goup birds: wild turkey, parrots, waterfowl, raptors, landbirds, etc.

At this point, are two great challenges: habitat conservation in one hand, and in the other to involve "*capturadores*" in the legal framework, which requires register a UMA and develop scientific and technical capabilities in order to make a survey.

Manejo de Aves en México.

Tradicionalmente el pueblo de México ha utilizado a las aves, o parte de ellas, con distintos propósitos: alimentación, ornamental, religioso o caza. Además mucha gente tiene aves en sus casas, y relacionado con esto, existe mucha gente dedicada a la captura de aves silvestres para su venta en el mercado (*captiradores*), muchos de ellos organizados en grupos.

En la útima década la adminsitración de la vida silvestre, aves incluidas, ha tenido cambios profundos. La administración gubernamental introdujo un marco legal, la Ley de Vida Silvestre, y desarrolló un esquema llamado UMA (Unidad de Manejo para la Conservación de la Vida Silvestre). Básicamente, la UMA require que el dueño de la tierra la registre y desarrolle un plan de manejo con el propósito de obtener una cuota de aprovechamiento. Esto último implica que el técnico de la UMA lleve a cabo un monitoreo con el fin de obtener un estimado de la población en la cual está interesado.

Hay varios temas científicos relacionados con esto. Uno de los puntos focales fue el definir métodos estandarizados de monitoreo en las UMAs y también definir cosechas sustentables considerando no sólo la los datso y escala de la UMA, sino también el estado de las poblaciones (especies) de aves. Con el fin de desarrollar esto adecuadamente se organizó un taller con varios especialistas en distintos grupos de aves: guajolote silvestre, pericos, aves acuáticas, rapaces, aves terrestres, etc.

En este momento, hay dos grandes retos: conservación del hábitat por un lado, y por el otro involucrar a los "*capturadores*" en el marco legal, lo que requiere el registro de una UMA y el desarrollo de capacidades técnicas y científicas para realizar un monitoreo.

Root°, T. L.

Our Fossil-Fuel Addiction: Changing Climate, Changing Birds. Terry L. Root, Stanford University, Stanford, CA. troot@stanford.edu.

Over the last 100 years, average global surface temperature has increased approximately 0.8°C and the rate of warming continues to escalate. Animals and plants have shown that humans caused a large part of this increase. If we continue using fossil fuels as we are today, then the average global temperature could likely (> 66%) be 6.5°C above 1990 temperature around 2100. This is certainly cause for concern given the extent to which species have already changed with less than 1°C increase. Indeed, the most recent Intergovernmental Panel for Climate Change states that if temperatures rise 2°C above 1990 levels, ~20% of known species, and ~40% if temperatures hits 4°C, might head irreversibly toward extinction. Types of species changes expected with such temperature increases are more extreme modifications like those we are already seeing, including 1) shifts in range boundaries (e.g., moving poleward) and/or shifts in densities of individuals within their ranges, 2) shifts in timing (i.e., phenology) of various events primarily occurring in spring and/or autumn, 3) changes in genetics, behavior, and morphometrics (e.g., body or egg size), and 4) extirpation and extinction. Certainly, habitat change in response to climate change and human-caused land-use change (future human responses to warming) will continue. Synergistic effects between rapid global warming and habitat modification will likely cause

numerous extinctions, and as always, species with restricted ranges and migrants will be among the most sensitive.

Nuestro Apego del Fo'sil-Combustible: Clima Que cambia, Pájaros Que Cambian.

Durante los 100 años pasados, la temperatura superficial global del promedio ha aumentado aproximadamente 0.8^{o} C y el índice de calentarse continúa extendiéndose. Los animales y las plantas han demostrado que los seres humanos causaron una parte grande de este aumento. Si continuamos usando los combustibles fósiles mientras que estamos hoy, después la temperatura global media podría (> 66%) sea probablemente 6.5^{o} C sobre la temperatura 1990 alrededor de 2100. Ésta es ciertamente tema de causa dada el grado a el cual las especies han cambiado ya con menos que el aumento 1^{o}C. De hecho, el panel intergubernamental más reciente para el cambio del clima indica que si la subida 2^{o}C de las temperaturas sobre los niveles 1990, el ~20% de especies sabidas, y el ~40% si las temperaturas golpean 4^{o}C, pudieron dirigir irreversible hacia la extinción. Los tipos de cambios de la especie esperados con tales aumentos de la temperatura son modificaciones más extremas como ésos que estamos viendo ya, incluyendo 1) cambios en los límites de la gama (e.g., poleward móvil) y/o las cambios en densidades de individuos dentro de sus gamas, 2) cambian de puesto en la sincronización (es decir, phenology) de los varios acontecimientos que ocurren sobre todo en resorte y/o el otoño, 3) cambia en genética, comportamiento, y morphometrics (e.g., tamaño del cuerpo o del huevo), y 4) extirpation y extinción. Ciertamente, el cambio del habitat en respuesta al cambio y al cambio humano-causado del land-use (respuestas humanas futuras del clima a calentarse) continuará. Los efectos sinérgicos entre calentarse y la modificación globales rápidos del habitat causarán probablemente extinciones numerosas, y como siempre, la especie con las gamas restrictas y los nómadas estarán entre el más frágil.

Rosemartin*, A.; Morzaria Luna, H.; Castillo, A.; van Riper, III, C.

**Spatial and Temporal Patterns in Avian Diversity and Abundance in a Coastal Estuary in Sonora, Mexico. ***Alyssa Rosemartin, UA, Tucson, AZ; Morzaria, L.H., CEDO, Mexico; Castillo, A., CEDO, Mexico; van Riper III, C. UA, Tucson, AZ. ahouse@email.arizona.edu.

Negative estuaries on the coast of Sonora support migratory and wintering birds, including vulnerable species (least tern, *Sternula antillarum*; long-billed curlew, *Numenius americanus*; and "large-billed" savannah sparrow, *Passerculus sandwichensis rostratus*). We sampled avian diversity and abundance every two months in Estero Morúa, a negative estuary on the northern coast of Sonora, from October 2005 to December 2006. We registered 65 species of birds in plots, representing 20 families. Thirty-seven species winter in the region, while only 4 species are local breeders, the remaining 24 species migrate through the region. We estimate abundance in the wetland for each species. For seven species, we are able to report densities after correcting for detection probability using distance sampling. The three most common species across all seasons and habitats were long-billed curlew, willet (*Tringa semipalmata*) and marbled godwit (*Limnosa fedoa*). Fifteen species comprised eighty percent of cumulative abundance. Shorebird species richness was greater in mudflats than in marsh plains. Richness and abundance decline in the summer months, indicating both migratory and wintering use of Estero Morúa. Our research provides important baseline information on avian diversity and abundance, and creates a potential for informed development in this rapidly growing coastal region.

Variación temporal y espacial en diversidad y abundancia de aves en un estero costero de Sonora, México.

Esteros en la costa de Sonora albergan poblaciones de aves en migración e invierno, incluso especies vulnerables (charrán mínimo, *Sternula antillarum*; zarapito piquilargo, *Numenius americanus*; y el gorrión sabanera, *Passerculus sandwichensis rostratus*). Muestreamos diversidad y abundancia de aves cada dos meses en el Estero Morúa, un estero en la norte de la costa de Sonora, desde octubre 2005 hasta diciembre del 2006. Registramos 65 especies de aves en nuestros puntos de conteo, representando 20 familias. Treinta y siete especies inviernan en la región, mientras hay solamente cuatro especies que anidan en el estero, las otras 24 especies lo usan durante migración. Estimamos abundancia para cada especie en el estero. Para siete especies estimamos su densidad después de considerar la probabilidad de detección. Las aves mas comunes a través de las temporadas y hábitats fueron el zarapito piquilargo, el playero pihuihui (*Tringa semipalmata*) y el picopanda canelo (*Limnosa fedoa).* Quince especies representan una ochenta por ciento de la abundancia cumulativa en el estero. Las planicies lodosas tuvieron más riqueza de aves playeras que las marismas. Proveemos una línea base sobre la diversidad y abundancia de avifauna, y creamos la potencial para un desarrollo informado en esta región de crecimiento costero rápido.

Rosenberg°, K. V.; Blancher, P. J.

A Recent History of Bird Initiative Population Objectives. Kenneth V. Rosenberg, CLO, Ithaca, NY; Blancher, P.J., Canadian Wildlife Service, Canada. kvr2@cornell.edu.

Numerical population objectives were introduced by the North American Waterfowl Management Plan (NAWMP) as a compelling tool for conservation actions and as a means for measuring success of these actions. Under NAWMP, the goal of returning continental waterfowl populations to 1970's levels is linked to regional wetland habitat objectives, as well as regional harvest levels, through adaptive harvest management models. Following this lead, Partners in Flight developed continental objectives for all landbirds, based on population estimates from breeding-season abundance surveys and on population trend indices from these same surveys. Whereas indices provide a measure of how well populations are doing relative to a desired baseline (e.g. pre-BBS levels), population estimates convey the magnitude of change necessary to achieve a desired objective. The U.S. Shorebird Conservation Plan followed a similar approach to setting preliminary conservation targets based on continental population estimates and trends, whereas waterbird objectives have so far only been set in certain regions. Although continental population objectives are expressed as abundances, achieving these objectives ultimately depends on influencing vital rates, in particular recruitment and survival. A continuing challenge is the lack of clear empirical connections between habitat amount, habitat quality (influencing carrying capacity), and population vital rates. Regional objectives also must be realistic and achievable by willing partners, often necessitating approaches other than simply stepping down continental objectives to states or regions.

Rosenberg°, K. V.; Marra, P. P.

Applying Concepts of Seasonal Connectivity to the Conservation of High Priority Migratory Landbirds. Kenneth V. Rosenberg, CLO, Ithaca, NY; Marra, P.P., Smithsonian Migratory Bird Center, Washington, D.C. kvr2@cornell.edu.

Our goal is to develop a unified process for incorporating non-breeding season biology into conservation planning for high-priority Neotropical migrant species. Recent research on American Redstarts, Northern Waterthrushes, and Kirtland's Warblers, provide strong evidence that conditions and events on the wintering grounds can influence population trends of species on the breeding grounds. What can we learn from these well-studied model systems that can be applied directly to species, such as Cerulean or Golden-winged Warbler, for which we lack detailed data? Are there commonalities that can be used to identify limiting factors in any migratory species? In the following discussion, we will introduce a new matrix approach to identifying limiting factors for long-distance migrant landbirds. The key to this approach will be to find characteristics easily identified from natural history observations or limited research that can imply seasonal connectivity or non-breeding limitation for a species. For example, is there evidence of sexual habitat or geographic segregation in winter? Do species show evidence of territoriality or do they join mixed-species flocks of resident species? How does timing of migration relate to potential limiting events in winter or on migration routes? We will also explore how research on geographic connectivity using stable isotopes and other techniques can help PIF refine migratory connections maps and help establish conservation linkages among international partners.

Rotenberg°, J. A.; Barnhill, L. M.; Gerwin, J.

The Painted Bunting Observer Team: Engaging Citizens to Collect Data to Answer Research Objectives. James Rotenberg, UNCW, Wilmington, NC; Barnhill, L., SCDNR, Columbia, SC; Gerwin J., NC Museum of Natural Sciences, Raleigh, NC. Rotenbergj@uncw.edu.

Citizen science has been employed in a variety of ways to harness the energy of volunteers to collect data to answer various research questions. We developed the Painted Bunting Observer Team (PBOT) in 2006 to collect data to address distribution, abundance, and behavioral questions to fulfill needs identified by state action and FWS focal species plans. Breeding Bird Survey data show that eastern Painted Buntings have declined at least 3.2% annually over a 30-year period, possibly due to increased coastal development and agricultural practices, both of which reduce the shrub-scrub brush vital to breeding Painted Buntings. Since Painted Buntings readily visit backyard bird feeders, citizen scientists can readily participate in a variety of data generating components that aids us in comparing subpopulations breeding in suburban, rural and natural habitats. In addition to data collection to answer research questions, the PBOT model demonstrates a means to reconnect science with society and we feel this model can be applied to a variety of urban bird studies. Here we present a number of recommendations to others who may be considering a citizen science-based data collection program and how PBOT data has impacted Painted Bunting conservation in the Carolinas.

Rotenberg°, J. A.; Requena, W. W.; Marlin, J.

Integrated Community-Based Harpy Eagle and Avian Conservation Program for the Maya Mountains Massif. James A. Rotenberg, UNC, Wilmington, NC; Requena, W.W., Belize Foundation for Research and Environmental Education, Belize; Marlin, J., BFREE, Belize; rotenbergj@uncw.edu.

Historically, research and monitoring of species of flora and fauna in the protected areas of the Maya Mountains Massif (MMM) of Belize have been conducted primarily by foreign scientists. These studies have had little to no direct benefits to the local community members in the buffer zone communities that border these areas. What little benefits that have been received, have been temporary, such as salaries for jobs such as porters or cooks. These short term benefits, although helpful, have had little long term impact on the local population's appreciation of the protected areas themselves, and have not created a society of advocates and supporters of the MMM. This disconnect between hard science and the local society creates an adversarial condition, with locals perceiving science as a benefit for foreign academics, and the protected areas themselves as partially set aside for use by educated non-Belizeans, who do not contribute on a measurable scale to the economic development of the local economies. This is particularly true in protected areas such as the Bladen Nature Reserve, where its strict category of protection prevent even tourism as a means of alternative livelihoods for locals such as tour guiding and providing other services. Our goal is to build capacity for avian conservation in the Maya Mountains by enhancing the links between protected areas and their surrounding communities. Project objectives include surveys and monitoring of rare Harpy Eagles and the bird community supported by the Reserve, providing base-line data, a community-based alternative livelihood strengthening program for the development of a core group of Avian technicians from buffer zone communities providing them the tools for acquisition of science based skills in the use of GPS, bird identification, scientific methodology and data collection, and an environmental awareness and education program. Here, we present accomplishments and program results from our first year; highlighting recommendations including both short-and long-term benefits for conservation and preservation. The project is supported by Nature Conservancy Belize Program.

Rothman°, A.

International Perspective: A Case Study of Birding Trail Development Internationally. Andrew Rothman, RBG, Madison, WI. andrewrothman@yahoo.com.

As bird habitat in the new world tropics continues to disappear, innovative approaches are necessary for habitat conservation. In Central America, countries are attempting to create biological corridors to main the biological integrity of the region. As birding trails are successfully being established across the United States, bringing birding trails to other countries in Latin America may help with the establishment of biological corridors and the conservation of wildlife habitat. The Rainforest Biodiversity Group is working in Costa Rica to develop the Costa Rican Bird Route as means to increase connectivity and landowner participation in the San Juan – La Selva Biological Corridor. As there are few international bird trails to draw from, developing a birding trail outside of the United States faced a unique set of challenges. From getting people to understand the concept of a birding trail to getting private landowners interested in participation to the overall operation of the trail there are lessons to be learned. If the Costa Rican Bird Route can successfully increases habitat connectivity within a biological corridor by provid-

ing an economic incentive for private landowners, others in the region may use birding trails as a tool for habitat conservation.

Perspectiva Internacional: Un ejemplo internacional de desarrollo de un sendero de observación de aves

A medida que el hábitat de aves en los trópicos de América sigue desapareciendo, se hacen necesarios enfoques innovadores para la conservación del hábitat. En Centro América, algunos países están intentando crear corredores biológicos para mantener la integridad biológica de la región. Teniendo en cuenta que los senderos para la observación de aves han sido implementados con éxito a lo largo de los Estados Unidos de Norte América, el traslado de esta experiencia a otros países en Latinoamérica podría ayudar a establecer corredores biológicos y a conservar el hábitat para la vida silvestre. El Grupo de Biodiversidad de la Selva esta trabajando en Costa Rica para desarrollar la Ruta Costarricense para la Observación de Aves, como estrategia para aumentar la conectividad y la participación de los propietarios en el Corredor Biológico San Juan – La Selva. Debido a que existen pocos senderos internacionales para la observación de aves de los cuales extraer lecciones, el desarrollo de un sendero fuera de los Estados Unidos de Norte América presenta desafíos únicos. Entre ellos, enseñarle a la gente el concepto de un sendero para la observación de aves y ganar el interés de los propietarios privados de participar en la operación general del sendero. De todo este proceso hay lecciones que aprender. Si la Ruta Costarricense para la Observación de Aves puede incrementar exitosamente la conectividad del hábitat dentro de un corredor biológico mediante la provisión de incentivos económicos para los propietarios privados, otros en la región pueden utilizar este tipo de senderos como herramienta para la conservación del hábitat.

Ruelas Inzunza°, E.; Goodrich, L. J.; Martinez Leyva, E.; Peresbarbosa Rojas, E.; Mesa, R. R.; Scheuermann, K. L.; Ortiz, S. L.; Carrasco, Y. C.; Ferriz, N.; Straub, R.; Pérez, M. M.; Barrios, J.; Smith, J.; Hoffman, S. W.

The Veracruz River of Raptors Project: Threats, Opportunities, and Long-term Conservation Strategies. Ernesto Ruelas Inzunza, Ithaca, NY; Goodrich, L. J.; Martinez Leyva, E.; Peresbarbosa Rojas, E.; Mesa, R. R.; Scheuermann, K. L.; Ortiz, S. L.; Carrasco, Y. C.; Ferriz, N.; Straub, R.; Pérez, M. M.; Barrios, J.; Smith, J.; and Hoffman, S. W. er99@cornell.edu

Millions of raptors and other Neotropical migratory birds are constrained to a narrow geographic corridor during migration in Veracruz, México. Over many years of work, a clearly identified list of problems has defined the agenda of a long-term conservation plan for this migration stopover site of global importance.

Threats to migrants in the area include habitat loss, pesticide use, and negative human attitudes towards raptors that result in direct persecution. The Veracruz River of Raptors Project (VRR) started in 1991 as a long-term initiative to address these problems. Its adaptive conservation plan is based on three core strategic lines of work: (1) Research, focused on identifying key stopover habitat sites, understanding migration ecology, and assessing conservation risk by species/habitat associations; (2) Monitoring, through a long-term program to track populations based on migration counts and banding; and (3) Environmental education, through an alliance to implement programs with students and teachers in rural and urban schools and permanent, year-round presence through the new Mario A. Ramos Bird Observatory.

These activities are supported by three core processes for long-term sustainability: (a) An international training scheme to ensure qualified human resources; (b) A renewable fundraising system that includes a membership and private donor base, an ecotourism program, and a continuous fundraising process through foundations; and (c) The formalization of partnerships and development of a network of contacts, from local to international, to synergize the work developed on-site.

This approach to conservation implementation has sustained the Veracruz River of Raptors Project for >15 years and expects to continue over long-term.

Millones de rapaces y otras aves migratorias Neotropicales se ven obligadas a migrar por un estrecho corredor en Veracruz, México. Durante muchos años de trabajo, una lista de problemas claramente identificados ha definido la agenda de conservación a largo plazo en este sitio de importancia global para la migración.

Las amenazas a las aves migratorias en esta región incluyen la pérdida de hábitat, el uso de plaguicidas y las actitudes negativas hacia las rapaces que resultan en persecución directa. El proyecto Veracruz Río de Rapaces (VRR) inició en 1991 como una iniciativa de largo plazo para resolver estos problemas. Su plan de conservación adaptativo esta basado en tres líneas estratégicas de trabajo: (1) Investigación, centrada en la identificación de sitios de hábitat críticos, el entendimiento de la ecología de la migración de las aves y la determinación del riesgo de conservación de las aves y sus hábitats; (2) Monitoreo, a través de un programa de largo plazo para seguimiento de las poblaciones y que se basa en conteos de la migración y anillado; y (3) Educación ambiental, a través de una alianza para implementar programas con estudiantes y maestros en escuelas rurales y urbanas sumada a la presencia durante todo el año, a través del nuevo Observatorio de Aves Mario A. Ramos.

Estas actividades están apoyadas por tres procesos centrales de sostenibilidad a largo plazo: (a) Un programa de entrenamiento internacional para asegurar recursos humanos calificados; (b) Una base de financiamiento renovable que incluye donantes privados, un sistema de membresía, un programa de ecoturismo y esfuerzos continuos de procuración de fondos a través de fundaciones; y (c) La formalización de alianzas y el desarrollo de una red de contactos, desde locales hasta internacionales, para apoyar el trabajo desarrollado en sitio.

Esta forma de implementación de la conservación ha sostenido al proyecto VRR por más de 15 años y anticipamos seguir utilizando estas mismas estrategias para avanzar las metas del proyecto en el futuro.

Ruelas Inzunza°, E.; Hussell, D. J. T.

Monitoring with a Conservation Goal: Principles and Practice of Raptor Migration Monitoring. Ernesto Ruelas Inzunza, HMANA, Ithaca, NY; and Hussell, D.J.T., Ontario Ministry of Natural Resources, Canada. er99@cornell.edu

Open-ended ecological monitoring has been criticized for failing to address specific questions regarding the biological objective of interest or the extrinsic variables that may be affecting it. To enhance the contribution of monitoring for conservation, programs must address three central questions: (1) Why monitor? (2) What (parameters) should be monitored? and (3) How should monitoring be done?

The Raptor Population Index Partnership (Hawk Mountain Sanctuary, HawkWatch International, and Hawk Migration Association of North America), was conceived to produce scientifically-sound, timely, and regularly-updated assessments of the status raptor populations using migration count data, in accor-

dance to recommendations of the PIF North American Landbird Conservation Plan.

To achieve this, we have set up an on-line system to collect data using a standardized protocol that includes variables affecting raptor migration. The rationale for the operation of this monitoring network has a set of concepts, principles, and assumptions that are required for the proper application of current analysis methods. This methodology is a two-step process that involves the calculation of an annual index of abundance, and the estimation of an annual rate of change over the length of the time series of data available.

The recent completion of a first continental-scale assessment of population status of raptors also provided a set of recommendations to improve the operation of the complete system. These include (1) Improvements and modifications to the existing data-collection protocol, (2) Systematic documentation of additional site metadata, (3) Improvements to the geographic and seasonal coverage of data-contributing sites, particularly outside the northeastern United States, (4) The development of some data-analysis techniques to improve estimates of species that are rare or recorded in very large numbers.

The largest improvement of monitoring for conservation is setting up goal-oriented, targeted monitoring, with a focus on crucial information that addresses the three central questions outlined above. Assessing whether targets and objectives have been met should be the primary objective of monitoring.

Monitereo con Metas de Conservacion: Pricipios y Metodos para el Monitereo de Rapaces en Migracion.

El monitoreo ecológico con propósitos indefinidos ha sido criticado por no atender preguntas específicas relacionadas al objetivo biológico de interés o las variables extrínsecas que pueden afectar sus estimaciones. Para mejorar la contribución del monitoreo para la conservación, estos programas deben responder a tres preguntas (1) ¿Para qué monitorear?, (2) ¿Qué (parámetros) deben ser monitoreados? y (3) ¿Cómo debe hacerse el monitoreo?

El proyecto Índice de Poblaciones de Rapaces (RPI por sus siglas en inglés, formado por Hawk Mountain Sanctuary, HawkWatch Internacional y Hawk Migration Association of North America) fue creado para producir estimaciones del estatus de las poblaciones de rapaces que sean científicamente rigurosos, generados en tiempo y que sean regularmente actualizados, de acuerdo con el Plan de Conservación de Aves Terrestres de PIF.

Para lograrlo, hemos establecido un sistema en línea para colectar datos de campo en sitios que utilizan un protocolo estandarizado que incluye datos de las variables que afectan la migración de las rapaces. La lógica para la operación de esta red de monitoreo tiene una serie de conceptos, principios y fundamentos que se requieren para la aplicación apropiada de los métodos de análisis actuales. Esta metodología es un proceso de dos pasos que entraña el cálculo de un índice anual de abundancia y la estimación de la tasa anual de cambio sobre la serie de tiempo según los datos disponibles.

La publicación reciente de la primera evaluación del estado poblacional de las rapaces a escala continental, también nos aportó una serie de recomendaciones para mejorar la operación del sistema completo. Estas incluyen (1) Mejoras y modificaciones al protocolo estandarizados de colecta de datos, (2) La documentación sistemática de metadatos de sitio, (3) Mejoras a la cobertura geográfica y estacional de los sitios que contribuyen datos, particularmente los que están fuera de la región noreste de los Estados Unidos, y (4) El desarrollo de algunas técnicas de análisis de datos que mejoren las estimaciones para especies raras o que ocurren en grandes cantidades.

La mayor mejora del monitoreo para la conservación es establecer metas y objetivos claros, con un enfoque especial para la información crítica que responda a las tres preguntas centrales que se refieren arriba. El objetivo principal del monitoreo debe ser determinar si las metas y objetivos han sido alcanzados.

Ruíz-Aymá, G.; González-Rojas°, J. I.; and Ruvalcaba-Ortega, I.

Reproductive Success and Prey Delivery of the Burrowing Owl, in Short-grasslands of Galeana, Nuevo León, México.
Gabriel Ruiz-Aymá; González-Rojas, J.I.; Ruvalcaba-Ortega, I. FCB/UANL, México. ayma_g@hotmail.com.

The Burrowing Owl (*Athene cunicularia hypugea*), is a North American, vulnerable, grassland species, whose main cause of population decline is habitat loss. The objective of this study is to obtain the reproductive success and prey delivery of this species on a resident population in Mexico. Field work was conducted from April to August 2007 in three grasslands of Galeana municipality in Nuevo León: two in disturbed areas, impacted by agriculture and anthropogenic pressure (Erial and San Rafael); and one without disturbance, inside of a state natural protected area (La Soledad). For reproductive success (Mayfield, 1975), nests were monitored during the beginning of incubation and during the nestling to fledgling period. Reproductive success during the nestling-fledgling stage was slightly higher in the disturbed area (69.85%; N= 19) than in the conserved one (71.57%; N=21). Respecting prey delivery, 7 nests were observed, recording parents activity during 6 daily hours in three visits. Females made 53.8% of the deliveries, from which, 58.3% were insects. On the other hand, mammals outstand as the main prey item for males (97.2%). These results contribute importantly to this species breeding biology knowledge. They also give us the basis to recommend more effective conservation measures for grasslands and their avifauna.

Éxito reproductivo y Entrega de Presas de Tecolote llanero (*Athene cunicularia hypugea*), en Pastizales de Galeana, Nuevo León, México.

El tecolote llanero es una especie vulnerable de Norteamérica y característica de los pastizales. El objetivo de este trabajo es conocer el éxito reproductivo y la entrega de presas en una población residente de México. El trabajo de campo se realizó de abril a agosto (2007), en tres pastizales de Galeana, Nuevo León: dos en zonas con disturbio antropogénico (Erial y San Rafael) y una sin disturbio, dentro de un área natural protegida estatal (La Soledad). Para el éxito reproductivo se monitorearon los nidos durante el inicio de la incubación y durante el periodo de pollo a volantón. El éxito reproductivo en la etapa de pollo a volantón fue ligeramente mayor en el área impactada (69.85%; N= 19) que en el área sin disturbio (71.57%; N=21). Respecto a la entrega de presas se observaron 7 nidos, registrándose la actividad de los padres durante 6 horas diarias en tres visitas. La hembra sobresalió con un 53.8% de las entregas, de las cuales, las presas principales fueron los insectos con el 58.3%. Los mamíferos sobresalen como la presa principal de los machos (97.2%). Estos resultados contribuyen de manera importante al conocimiento de la biología reproductiva de la especie en México. Además, aportan bases para la recomendación de medidas de conservación más efectivas a nivel del ecosistema de los pastizales.

Rush°, S. A.; Gaines, K. F.; Woodrey, M. S.; Fisk, A. T.; Cooper, R. J.

Clapper Rails as Ecological Indicators of Tidal Marsh Health. Scott A.Rush, Univ. Georgia, Athens, GA; Gaines, K.F., Eastern Illinois University, Charleston, IL; Woodrey, M.S., MSU, Biloxi, MS and Grand Bay National Estuarine Research Reserve, Moss Point, MS; Fisk, A.T., Univ. Windsor, Windsor, ON; Cooper, R.J., UG, Athens, GA. rushs@warnell.uga.edu.

Despite the rapid loss of tidal marsh from the coasts of the United States, the ecology of marsh birds such as the Clapper Rail (*Rallus longirostris*) remains largely unknown. In an effort to further our understanding of the ecological niche of these birds and their potential application as ecological indicators we studied the spatial and trophic ecology of this species. Spatial distributions were studied along the northern coast of the Gulf of Mexico using standardized marsh bird surveys and radio-telemetry while the trophic ecology was addressed using isotopic and elemental tracers. Across our focal systems we found differences in the densities of Clapper Rails and their detection probabilities correlated with landscape characteristics measured at various spatial scales. Based on stable isotope and element analyses Clapper Rails appear to maintain a diet that may vary spatially, with tissue-based concentrations of environmental contaminants, such as mercury (Hg), often exceeding those expected for their trophic position. We present these new findings and compare and contrast them with data from southeastern Atlantic rail populations which are influenced by similar anthropogenic activities and pollution. Synthesis of this information will not only further our understanding of the ecology of tidal communities but also find application in the effective management, and restoration of these tidal systems.

***Rallus longirostris* como Indicadores de la Salud del Pantano de Marea.**

A pesar de la pérdida rápida de pantano de marea de las costas de los Estados Unidos, la ecología de los pájaros del pantano tales como el *Rallus longirostris* sigue siendo, en gran parte, desconocida. En un esfuerzo para mejorar nuestra comprensión del lugar ecológico de estos pájaros y de su uso potencial como indicadores ecológicos, estudiamos la ecología espacial y trofica de esta especie. Las distribuciones espaciales fueron estudiadas a lo largo de la costa norteña del golfo de México, usando muestreo de aves del pantano y radio-telemetria, mientras que la ecología trofica fue tratada usando trazalíneas isotópicos y elementales. A través de nuestros sistemas focales, encontramos diferencias en las densidades de *Rallus longirostris* y sus probabilidades de la detección, correlacionadas con las características del paisaje medidas en las varias escalas espaciales. De acuerdo con isótopos estables y de los análisis elementales, *Rallus longirostris* apareze mantener una dieta que puede variar espacialmente, con concentraciones basadas en tejido de contaminantes ambientales, tales como mercurio (hectogramo), excediendo a menudo ésos esperados para su posición trofica. Presentamos estos nuevos resultados y los comparamos y ponemos en contraste con datos de las poblaciones atlánticas del sudeste de *Rallus* que son similarmente influenciadas por actividades y la contaminación antropogenica. La síntesis de esta información fomentará no solamente nuestra comprensión de la ecología de comunidades de marea, pero también encontrará el uso en el manejo eficaz, y la restauración de estos sistemas de marea.

Rush°, S. A.; Soehren, E. C.; Fisk, A. T.; Woodrey, M. S.; Cooper, R. J.

Habitat Use by Marsh Birds Along the Northern Coast of the Gulf of Mexico. Scott A. Rush, UG, Athens, GA; Soehren, E.C., Alabama Department of Conservation and Natural Resources, Montgomery, AL; Fisk, A.T., University of Windsor, Windsor, ON; Woodrey, M.S., MSU, Biloxi, MS and Grand Bay National Estuarine Research Reserve, Moss Point, MS; Cooper, R.J., D. B., UG, Athens, GA. rushs@warnell.uga.edu.

As a habitat, emergent tidal marsh continues to disappear from the Northern Gulf Coast of the United States at an alarming rate. Despite this rapid loss the ecology of marsh birds inhabiting this ecotype, species such as the Clapper Rail (*Rallus longirostris*), King Rail (*Rallus elegans*), Least Bittern (*Ixobrychus exilis*), Purple Gallinule (*Porphyrula martinica*), and Common Moorhen (*Gallinula chloropus*) remains largely unknown. In an effort to further our understanding of the ecological niche of these birds we studied their spatial ecology at several locations in Mississippi and Alabama. Spatial distributions were studied using standardized marsh bird surveys and radio-telemetry. Across our focal systems we found differences in the densities of these species correlated with landscape features measured at various spatial scales. Further exploration into the trophic and reproductive ecology of Clapper Rails from several spatially distinct locations in Mississippi indicates that both the diet and reproductive success of this species may vary both within and between estuarine systems. Applying several reproductive metrics we will discuss possible ecological relationships between ecotype, trophic interactions, habitat use and movement, and this species' population demographics. Synthesis of this information will not only further our understanding of the ecology of tidal communities but also find application in the effective management, and restoration of these tidal systems.

Russell°, J. M.; Russell, D. E.; Herrera, J. R.

American and Mexican University Workshop Focuses on Avian Conservation. Jill M. Russell, College of Mount St. Joseph, Cincinnati, OH; Russell, D. E., Miami University, Oxford, OH; Herrera, R., Autonomous University of Tamaulipas, Mexico. jill_russell@mail.msj.edu.

Precipitous declines in migrant bird populations have lead to increased public concern. Conservation programs based solely in the US will have little overall success in avian population recovery if areas such as over-wintering grounds, are not included. *Birds Without Borders* is a collaborative study-abroad workshop between Miami University, the College of Mount St. Joseph, and the Autonomous University of Tamaulipas, Mexico. Participants in this two-part workshop spent 6 days in Mexico and 6 days in Ohio studying temperate and neotropical migrants. Bird banding and biological surveys were conducted at El Cielo Biosphere Reserve in Mexico and at the Miami University Bird Observatory in OH. Pairs of students, one from each country, selected a migrant bird known to winter in Tamaulipas and nest or pass through Ohio. Important communication, critical thinking, socio-cultural, ethical and interdisciplinary skills were developed as they worked together in Mexico and Ohio observing, banding, and researching conservation of "their" bird. Students also designed and participated in environmental education activities in the remote village of 20 de Abril where the endangered Military Macaws breed. Collaborative projects planned for the future include isotopic, genetic and physiology studies, exchange of students between universities, increased biological surveys of El Cielo, establishment of a Mexican bird banding station and the creation of a sustainability program in 20 de Abril.

Taller entre Universidades de Estados Unidos y México se enfoca en la conservación de Aves.

Las reducciones estrepitosas en las poblaciones de aves migratorias han llevado al incremento de la preocupación pública. Los programas de conservación con base solamente en los Estados Unidos tendrán poco éxito total en la recuperación de las poblaciones de aves si no se incluyen las áreas, tales como las tierras invernales. *Aves sin Fronteras* es un Taller de colaboración amplia entre la Universidad de Miami, el Colegio Mount St. Joseph y la Universidad Autónoma de Tamaulipas, México. Los participantes del Taller, que consta de dos fases, invirtieron seis días en México y seis días en Ohio estudiando aves migratorias Neárticas y Neotropicales. Durante el Taller se llevó a cabo el anillamiento de aves y estudios biológicos en la Reserva de la Biosfera El Cielo y en el Observatorio de Aves de la Universidad de Miami en Ohio. Se formaron pares de estudiantes, uno de cada País, que seleccionaron una especie de ave migratoria que pasa el invierno en Tamaulipas y que se reproduce o pasa durante la primavera por Ohio. Se desarrolló una comunicación importante, pensamiento crítico, habilidades socioculturales, éticas e interdisciplinarias cuando se trabajó en equipo en México y en Ohio, observando, anillando e investigando tópicos de conservación de "su especie de ave". Los estudiantes también diseñaron y participaron en actividades de educación ambiental en el remoto Ejido 20 de Abril donde la guacamaya verde, especie en peligro de extinción, se reproduce. Entre los proyectos de colaboración que se tienen planeado para el futuro se incluyen estudios de isótopos, genéticos y fisiológicos, intercambio de estudiantes entre Universidades, nuevos estudios biológicos en la Reserva de la Biosfera El Cielo, el establecimiento de una Estación Mexicana para el anillamiento de aves y la creación de un Programa Sostenible en el Ejido 20 de Abril.

Russell°, R. P.

Solving Habitat Mysteries of the Black Rail (*Laterallus jamaicensis*) in the Midwest. Robert P. Russell, USFWS, Ft. Snelling, MN; Robert_Russell@fws.gov.

The Black Rail has been known from a broad area of the interior United States since the earliest days of American ornithological exploration, yet the species' habitat, local range, and conservation needs are virtually unknown. Habitat data collected on Black Rail sightings throughout the Midwest point to some common characteristics shared by many of the records. Additional habitat clues gathered from observations of birds from Atlantic, Gulf Coast, and far West populations may shed light on site-selection by Midwestern Black Rails. The potential for developing landscape-based models for this and other Midwestern rail species is discussed.

Rustay°, C. M.; Carter, M. F.

Approaching Conservation with Private Landowner Working Groups in the Playa Lakes Joint Venture. Christopher Rustay, PLJV, Albuquerque, NM; Carter, M., PLJV, Lafayette, CO. christopher.rustay@pljv.org.

The Playa Lakes Joint Venture (PLJV) brings partners together to support the four U.S. bird plans in the Southern Great Plains. We operate under the idea that all conservation is local, especially when the habitats in which you work are owned primarily by private landowners. Building networks that employ locals who offer a conservation message can be the best hook for bringing private landowners to the table. Because this process is different than the usual habitat conservation paradigm, it requires a different approach, an appreciation of the pressures on private landowners, and a working knowledge of the full array of funding opportunities that are available, especially the Farm Bill. It also requires understanding that conservation timetables may be different, especially where there is the need to increase education on conservation issues and/or to establish trust among landowners. Working in different areas may also require differing operational models depending upon the people resources available and the local "conservation climate". Understanding these factors prior to setting up a group is often critical to developing a conservation agenda and may require flexibility in determining work plans. The PLJV supports a variety of local conservation partnerships in its region through $20,000 grants to support building capacity to develop and sustain local conservation partners. Our partner habitat accomplishments have increased dramatically in the last three of the five years that we have offered these grants. We will highlight some of these partnerships and lessons learned in developing networks to support private landowner habitat conservation.

Salas°, L.; Ballard, G.; Sullivan, B.; Geupel, G.; Ralph, C.J.; Herzog, M.

Design and Roles of an AKN Node. Leo Salas, PRBO Conservation Science & RSL, Arcata, CA; Ballard, G., PRBO CS, Petaluma, CA; Sullivan, B., Cornell University, Ithaca, NY; Geupel, G., PRBO CS, Petaluma, CA; Ralph, C.J., RSL, Arcata, CA; Herzog, M., PRBO CS, Petaluma, CA. lsalas@prbo.org.

The design of the AKN is such that data and resources are not centrally located in one place. An AKN node should thus be designed to provide data, act as a safe data repository, and provide tools and tool development capacity at a smaller regional scale (regional nodes) or for a specific thematic specialty (thematic nodes). The AKN node is also a point for metadata collection for all datasets it posts. Regional Nodes are expected to absorb information at regional scales that are not necessarily appropriate at large scales (such as specific biophysical databases, or even data for regional taxonomic purposes) Thematic Nodes specialize in making sure that more complex or specialized data types are carefully archived and represented as well as possible to the full AKN. Like Regional Nodes, they also serve as centers for the development of specialized tools designed to work specifically and at advanced levels with the data types they host. The AKN provides continent-wide datasets by harvesting data from regional and thematic nodes via the exchange schema file to which datasets are "mapped." We will demonstrate the California Avian Data Center as an example of a regional node, and the Landbird Monitoring Network of the Americas banding data node as an example of a thematic node. We will also explain how data harvesting happens, and show how web-based visualizations use data from the schema and thus, are readily portable across nodes. Under the current AKN concept, and because significant data management and tool-development roles (i.e., editing, updating) occur at the node, a large share of the costs of the AKN is carried by the nodes. An organization contemplating establishing a node should not just evaluate the need to service data and tools to a network of people and institutions, but the realities of costs to create and maintain a node. We intend to facilitate the process of node incorporation by providing tools and expertise to reduce the costs of establishing new nodes.

Sallabanks°, R.; Dixon, R.

Biodiversity Conservation in Ponderosa Pine Forests of the Interior West: Meeting Habitat Objectives for the White-headed Woodpecker and other Dry Forest Associates. Rex Sallabanks; IDF&G, Boise, ID; Dixon, R., IDF&G, Boise, ID. rsallabanks@idfg.idaho.gov.

Dry forests of the Interior West, especially Ponderosa Pine, appear prominently in the list of high priority habitats identified by Partners in Flight (PIF) and the Intermountain West Joint Venture bird conservation planning efforts. Concerns are primarily driven by changes in historical fire regimes, as well as logging and grazing practices, which have resulted in significant habitat loss, fragmentation, and degradation. Bird species associated with old forest structures appear to have been affected the most, such as the Flammulated Owl (*Otus flammeolus*), Pygmy Nuthatch (*Sitta pygmaea*), and especially the White-headed Woodpecker (*Picoides albolarvatus*). In our paper, we will explore the concept of conserving dry forest biodiversity through specific actions intended to benefit the White-headed Woodpecker. We do this by synthesizing current knowledge about the status and habitat relationships of this species, potential overlap with the habitat needs of other pine associates, and offering prescriptions for habitat restoration, conservation, and management. We will debate the potential success of an 'if we build it, they will come' approach and address monitoring needs designed to answer the question 'if they do come, how will we know it?' Finally, we will evaluate the potential role of the White-headed Woodpecker to serve as an umbrella species for other high priority birds and dry forest biodiversity.

Sallabanks°, R.; Moulton, C.

State-level Coordination of All-Bird Monitoring: the Idaho Bird Inventory and Survey (IBIS) Program. Rex Sallabanks, IDFG, Boise, ID; Moulton, C., IDFG, Boise, ID. rsallabanks@-idfg.idaho.gov.

The Idaho Bird Inventory and Survey (IBIS) is a program designed to monitor all birds (waterbirds, shorebirds, waterfowl, and landbirds) throughout the state in a coordinated, standardized manner. Phase I of IBIS emphasized aquatic species and habitats, and focused on determining the distribution and abundance of waterbirds at Idaho's wetland Important Bird Areas (IBAs) and Idaho Department of Fish and Game (IDFG) Wildlife Management Areas (WMAs). Phase II addresses terrestrial species and habitats and is oriented more toward addressing management issues important to the state. A third component of IBIS describes species-specific protocols for priority species that would otherwise be inadequately sampled using the general methods proposed for aquatic and terrestrial birds (examples include black swifts, long-billed curlews, harlequin ducks, and forest owls). Ultimately, IBIS will establish permanent surveys at Idaho's IBAs, generate much-needed inventories of state WMAs, yield baseline data for statewide population trend monitoring, and address high priority management issues using short-term species assessments. IBIS has been implemented using a combination of state and regional coordinators, hired technicians, and volunteer "citizen scientists"; financial support has primarily been provided by IDFG's Nongame Wildlife Program, the State Wildlife Grants Program, and cooperative agreements with federal partners. Goals and objectives of the IBIS program are closely aligned with those described in the 2007 U.S. NABCI Committee Report "Opportunities for Improving Avian Monitoring."

Coordinación de la observación de las aves al nivel estatal: El Programa del Inventario y la Encuesta de las Aves en Idaho.

El Programa del Inventario y la Encuesta de las Aves en Idaho (IBIS) es un programa diseñado para observar a todas las aves (aves acuáticas, zancudas y en tierra) a través del estado en una manera regularizada y normalizada. En la fase I se hizo énfasis en las especies y los entornos acuáticos, y se concentró en determinar la distribución y la abundancia de las aves acuáticas en las Áreas Pantanosas de Aves Importantes (los IBA) en Idaho y las Áreas del Manejo Silvestre (los WMA) del Departamento de Pesca y Caza (IDFG). La fase II se concentra en las especies y los ecosistemas terrestres y se orienta más hacia los temas de la dirección que son importantes para el estado. El tercer componente de IBIS describe los protocolos especies-específicas para las especies principales las cuales de otra manera se clasificarían inapropiadamente usando los métodos generales propuestos para las aves acuáticas y terrestres (los ejemplos incluyen vencejos negros, zarapitos americanos, patos arlequines y mochuelos de blewitt). Al final, IBIS establecerá medidas permanentes en los IBA de Idaho, generará inventarios de los WMA estatales, rendirá una base de referencia para la observación estatal de las tendencias de poblaciones, y enfrentará los temas de dirección de alta prioridad usando evaluaciones a corto plazo para las especies. IBIS ha estado implementado una mezcla de coordinadores estatales y regionales, técnicos contratados y "científicos ciudadanos" voluntarios; el apoyo financiero ha sido proporcionado principalmente por el Programa del Silvestre No Destinados para la Caza de IDFG, el Programa de Estatales Subvenciones Silvestres y los acuerdos cooperativos con socios comerciales federales. Las metas y los objetivos del programa IBIS están estrechamente asociados con estos como se describió el Informe del Comité NABCI, "Oportunidades para Mejorar la Regulación de las Aves," en los Estados Unidos en 2007.

Santana Castellón°, E.; Contreras, S.; Schondube, J.; Verdugo, H.; Carrillo, J.; Ruan, I.; Guerrero, C.

Conservation of Endemic Birds in Montane Successional Mosaics in Western Mexico. Eduardo Santana Castellón; Contreras, S; Schondube, J; Verdugo, H.; Carrillo, J.; Ruan, I.; Guerrero, C. Instituto Manantlan de Ecologia y Conservacion de la Biodiversidad, Universidad de Guadalajara-CUCSUR, Mexico. esantana@-cucsur.udg.mx

One of the principal strategies for achieving the conservation of tropical birds is the identification of regions that harbor a high proportion of endemic species to be protected.IUCN and Bird Life International have established Endemic Bird Areas (EBAS) as one of the criteria for establishing regional conservation priorities. However, aside from identifying the ecosystem, life zone, ecoregion or plant community where
the endemic species are found, little is known about their habitat requirements and management needs. Based on a sampling effort of over 42,500 mistnet hours and 858 point-counts along a cloud forest successional gradient in the Sierra de Manantlan Biosphere Reserve, Jalisco, Mexico, we recorded a total of 221 bird species of which 30 (14%) are endemic to Mexico and 52 (24%) to Mesoamerica. Secondary scrub vegetation had more Mexican endemic species than mature cloud forest or pine forest. Habitat use and selection analyses showed that a significant number of endemic species require early stages of vegetation succession to survive. Over the long-term their populations decrease as succession progresses. Their conservation will involve not just habitat protection, but the maintenance of habitat-

specific disturbance regimes that create a mosaic of successional gradients in a given landscape. Fire dynamics research in the Sierra de Manantlan shows that the main forest types are exposed to (or maintained by) different fire-related disturbance regimes. The conservation of the montane endemic birds of western Mexico will depend on our ability to either preserve or imitate these disturbances.

Conservación de Aves Endémicas Mosaicos Sucesionales de Montaña en el Occidente de México.

Una de las estrategias principales para lograr la conservación de aves tropicales es la identificación de regiones que albergan una alta proporción de especies endémicas a proteger. La UICN y BirdLife International han identificados las Áreas de Endemismo de Aves (EBAS) como uno de los criterios para establecer prioridades regionales de conservación. Sin embargo, más allá de identificar el ecosistema, la zona de vida, ecoregión, o comunidad vegetal donde se encuentra la especie endémica, poco se sabe sobre sus requerimientos de hábitat y las necesidades de manejo. Basado en un esfuerzo de muestro de más de 42,500 horas red y 858 puntos de conteo a través de un gradiente sucesional de bosque mesófilo de montaña en la Reserva de la Biosfera Sierra de Manantlán, Jalisco, México. Documentamos un total de 221 especies de aves de las cuales 30 (14%) son endémicas a México y 52 (24%) a Mesoamérica. La vegetación de matorral secundario sostuvo mas especies endémicas que los bosques mesófilo y de pino. Análisis de selección de hábitat mostraron que un número importante de especies endémicas requerían áreas perturbadas para sobrevivir. A largo plazo las poblaciones se redujeron mientras avanzaba la sucesión. Para lograr su conservación se requiere no solo proteger su hábitat, sino mantener los regímenes de perturbación que generan el mosaico de diferentes estados de sucesión en el paisaje. Estudios sobre la dinámica del fuego en la Sierra de Manantlán muestran que los diferentes tipos de bosques están expuestos (o son mantenidos) por diferentes regímenes de fuego. La conservación de las aves endémicas de montaña en el Occidente de México dependerá de nuestra habilidad de conservar los regímenes de perturbación o de imitarlos.

Saracco°, J. F.; DeSante, D. F.; Nott, M. P.; Hochachka, W. M.; Kelling, S.

Integrated Bird Monitoring and the Avian Knowledge Network: Using Multiple Data Resources to Understand Spatial Variation in Demographic Processes and Abundance. James Saracco, IBP, Point Reyes Station, CA; DeSante, D. F., IBP, Point Reyes Station, CA; Nott, M. P., IBP, Point Reyes Station, CA; Hochachka, W. M., CLO, Ithaca, NY; Kelling, S., CLO, Ithaca, NY. jsaracco@birdpop.org.

Multiple sources of bird, habitat, climate, and weather data can provide unique insights into causes of variation in bird abundance through space and time. Such 'integrated bird monitoring' can be used to effectively direct avian conservation efforts. Current practices of integrated bird monitoring typically apply statistical, hypothesis-confirming, analyses to data. This approach, however, assumes that the *a priori* identification of a small set of models will accurately describe the processes driving population dynamics. Data resources of the Avian Knowledge Network (AKN) lend themselves to a different form of integration; one in which one data type is used to generate candidate hypotheses for the causes of varying bird numbers and another is used to confirm hypotheses. We will apply exploratory data-mining analyses to bird count data to identify environmental factors that may be affecting bird abundance at various spatial scales. We will then incorporate these factors into hypothesis-testing statistical analyses of bird-banding data from the Monitoring Avian Productivity and Survivorship (MAPS) program. We will use recently-developed spatial mark-recapture analytical techniques to interpolate the demographic health of bird populations in areas where MAPS data are sparse, based on knowledge of the environmental features affecting demographic processes.

Monitoreo Integrado de Aves y la Red de Conocimiento de Aves (Avian Knowledge Network): Utilizando Múltiples Recursos de Datos para Entender Variación Espacial de los Procesos Demográficos y la Abundancia.

Las múltiples fuentes de datos de aves, hábitat, clima y tiempo atmosférico pueden proporcionar un entendimiento único sobre las causas de la variación en la abundancia de aves a través del espacio y el tiempo. Tal 'monitoreo integrado de aves' puede ser utilizado para dirigir eficazmente los esfuerzos de conservación de aves. Las prácticas actuales del monitoreo integrado de aves típicamente aplican a los datos, análisis estadísticos de confirmación de hipótesis. Este enfoque, sin embargo, asume que la identificación *a priori* de un conjunto pequeño de modelos que describen con precisión los procesos que gobiernan la dinámica de las poblaciones. Los recursos de datos del 'Avian Knowledge Network' (Red de Conocimiento de las Aves; AKN) se prestan a una forma diferente de integración, una en la cual un tipo de datos es utilizado para la generación de hipótesis candidatas respecto a las causas de variación en los números de aves y otro tipo es utilizado para confirmar las hipótesis. Aplicaremos el análisis exploratorio de datos espaciales a conteos de aves para identificar factores ambientales que pueden estar afectando la abundancia de aves en diversas escalas espaciales.. Incorporaremos después estos factores a un análisis estadísticos de pruebas de hipótesis, a datos de anillamiento de aves del programa 'Monitoring Avian Productivity and Survivorship' (Monitoreo de la Productividad y Supervivencia de aves; MAPS). Utilizaremos técnicas desarrolladas recientemente para el análisis espacial de datos de captura-recaptura para interpolar la salud demográfica de las poblaciones de aves a áreas en donde los datos de MAPS son escasos, con base en el conocimiento de las características ambientales que afectan los procesos demográficos.

Saracco°, J. F.; DeSante, D. F.

Using Constant-effort Mist Netting and Mark-recapture Data to Understand Dynamics, Trends, and Limiting Factors of Bird Populations and to Address Threats to Them. James F. Saracco, IBP, Point Reyes Station, CA; DeSante, D.F., IBP, Point Reyes Station, CA; Nott, M.P., IBP, Point Reyes Station, CA. jsaracco@birdpop.org.

Effective management and conservation of bird populations has been hindered by our limited ability to gather and analyze broad-scale spatially-explicit demographic data. Such data are critical because they (1) describe the processes that are directly affected by human activities, (2) can be modeled as functions of habitat, climate, and weather variables to identify factors limiting populations, and (3) can be incorporated into population dynamics models to predict changes in bird populations under various land-use and climate-change scenarios. Collection of these data is relatively difficult (compared to the collection of abundance data) because large numbers of birds must be captured, marked, and recaptured to estimate (or index) demographic parameters precisely. Nevertheless, via hundreds of partnerships established since 1989 as part of the Monitoring Avian Productivity and Survivorship (MAPS) program, we have been largely successful in collecting these types of data for small landbird spe-

cies that are easily captured in ground-level mist nets. Analytical techniques for exploiting the full richness these data are rapidly evolving, and recent advances are providing unique insights into spatial variation in demographic rates across species' ranges. The value of MAPS would be further enhanced by greater incorporation into hypothesis-driven sampling schemes (e.g., to examine effects of management), targeted sampling of underrepresented species and habitats, and integration into continental scale coordinated bird monitoring efforts.

Utilizando el Redeo de Esfuerzo Constante y Datos de Marcaje-recaptura para Entender la Dinámica, Tendencias, y Factores Limitando Poblacionales de Aves y para Dirigir Amenazas a Ellos.

El manejo y conservación efectivos de las poblaciones de aves han sido frenados por nuestra limitada habilidad de reunir y analizar datos demográficos de amplia escala, espacialmente explícitos. Tales datos son críticos porque (1) describen los procesos que son directamente afectados por actividades humanos, (2) pueden ser incorporados en modelos como funciones de variables de hábitat, clima y tiempo atmosférico para identificar factores que limitan a las poblaciones, y (3) pueden ser incorporados en modelos de dinámica poblacional para predecir cambios en las poblaciones de aves, bajo diversos escenarios de uso del suelo y cambio climático. La recolección de estos datos es relativamente difícil (en comparación con la de datos de abundancias) porque numerosas aves tienen que ser capturadas, marcadas y recapturadas para obtener estimaciones precisas de parámetros demográficos (o índices). Sin embargo, a través de cientos de alianzas establecidas desde 1989 como parte del programa Monitoreo de la Productividad y Supervivencia de Aves (MAPS, por sus siglas en inglés), hemos sido exitosos en la recopilación de estos tipos de datos para especies pequeñas de aves terrestres que son fácilmente capturadas en redes de niebla a nivel del piso. Técnicas analíticas para el aprovechamiento de toda la riqueza de estos datos están siendo desarrolladas rápidamente y avances recientes están proporcionando penetración única respecto a la variación en las tasas demográficas a través de las áreas de distribución de las especies. El valor de MAPS seria mejorado más mediante una mayor incorporación de esquemas de muestreo basados en hipótesis (p. ej., para examinar efectos de manejo), muestreo enfocado a especies y hábitats no bien representados y mediante la integración de esfuerzos de monitoreo de aves coordinados a escala continental.

Sauer°, J. R.; Link, W. A.

Hierarchical Models, the North American Breeding Bird Survey, and Estimation of Attributes Relevant to Management. John R. Sauer, USGS, Laurel, MD; Link, W. A., USGS, Laurel, MD. jrsauer@usgs.gov.

Maintaining the value of the North American Breeding Bird Survey (BBS) as a source of information for status assessments and modeling of North American bird populations requires innovation in both survey design and statistical analyses. Hierarchical models provide opportunities both for accommodating issues associated with analyzing many species at a variety of geographic scales and for controlling detectability and the roadside nature of the counts. As these models become more familiar to the conservation community, applications provide new insights into old problems. We describe 2 such applications here: (1) the use of BBS data in conjunction with data on abundance and visibility data along roadsides and off roads to provide adjusted regional abundance estimates; and (2) aggregation of information among species to provide summary "State of the Birds" indexes for collections of species of management interest. These models permit estimation of a variety of attributes relevant to managers, highlight information presently missing from the survey, and suggest new ways of integrating additional information into the survey to extend inferences from BBS data.

Schmidt°, P. R.; Van Horne, B.; Hahn, D.

Opportunities for Improving Avian Monitoring. Paul R. Schmidt, USFWS, Washington, D.C.; Van Horne, B., USGS, Reston, VA; Hahn, D., AFWA, Washington, D.C. Paul_Schmidt@fws.gov.

Bird monitoring is a strategic activity that can be used to assess conservation status, ascertain and predict immediate or cumulative effects of habitat change, establish management and conservation priorities, and determine the effects of management so it can be adapted to meet its objectives. On the other hand, if it is ill-conceived, monitoring can waste funds, equipment, and personnel time. This report describes how current, disparate efforts to monitor avian populations could be improved to enhance efficiency and effectiveness. If recommendations in this report are implemented, our ability to understand and predict the effects of management and natural disturbance on birds would be substantially improved. This will require a commitment to include monitoring as an integral part of management and conservation practices, from project inception to periodic program review. Regular review should be rigorous enough to ensure that monitoring programs address the most critical needs and priorities, are based on consistent and valid methods, and provide secure and accessible data and syntheses.

We provide a number of recommendations for general consideration by the bird conservation community and a set of specific actions for implementation by the U.S. North American Bird Conservation Initiative (U.S. NABCI) Committee and Monitoring Subcommittee; all recommendations and actions address current challenges to our ability to achieve four monitoring goals. The first goal is to fully integrate monitoring into bird management and conservation practices and to ensure that monitoring is aligned with management and conservation priorities. The second goal is to solve conservation or management problems effectively through coordinating monitoring efforts among organizations and integrating them across spatial scales. The third goal is to increase the value of monitoring programs by improving statistical design.

Oportunidades para Mejorar el Monitoreo de las Aves.

El monitoreo de aves es una actividad estratégica que puede ser utilizada para determinar su estatus de conservación, dilucidar y predecir efectos inmediatos o cumulativos de los cambios de hábitat, establecer prioridades de manejo y conservación, y determinar los efectos del manejo para ajustarlo a sus objetivos. Por otro lado, si es erróneamente concebido, el monitoreo puede desperdiciar fondos, equipo y tiempo del personal. Este reporte describe cómo los diversos esfuerzos que a la fecha se llevan a cabo para monitorear poblaciones de aves pueden ser mejorados para aumentar su eficiencia y efectividad. Si las recomendaciones de este reporte son implementadas, nuestra capacidad de entender y predecir los efectos del manejo y perturbaciones naturales en las aves serían mejoradas sustancialmente. Esto requerirá del compromiso de incluir el monitoreo como una parte integral de las prácticas de manejo y conservación, desde la concepción del proyecto hasta la evaluación periódica del programa. Las revisiones periódicas deben ser suficientemente rigurosas para asegurar que los programas de monitoreo atienden las prioridades y necesidades más críticas y se basan en métodos consistentes y válidos, y que proveen datos y

síntesis seguros y accesibles. Damos una serie de recomendaciones para consideración general de la comunidad conservacionista de aves así como recomendaciones específicas para ser implementadas por el comité, en Estados Unidos, de la Iniciativa de Conservación de las Aves de Norteamérica (US NABCI por sus siglas en inglés) y su Subcomité de Monitoreo. Todas las recomendaciones y acciones responden a los retos actuales a nuestra capacidad para alcanzar las metas de monitoreo. La primera meta es integrar completamente el monitoreo en las prácticas de manejo y conservación y asegurar que el monitoreo se conduzca en paralelo a las prioridades de manejo y conservación. La segunda meta es resolver problemas de conservación y manejo a través de la coordinación de esfuerzos entre organizaciones e integrarlos a través de escalas espaciales. La tercer meta es incrementar el valor de los programas de monitoreo a través de mejoras en el diseño estadístico.

Schmitt°, B.

Panama Rainforest Discovery Center at Pipeline Road: Ecotourism, Conservation, Education and Science. *Beatriz Schmitt, Fundacion Avifauna Eugene Eisenmann, Panama. bschmitt@avifauna.org.pa.

The Panama Rainforest Discovery Center at Pipeline Road is an ecotourism and environmental education facility in central Panama. This facility was created and is administrated by Fundacion Avifauna Eugene Eisenmann, a Panamanian environmental nonprofit organization. The Panama Canal is surrounded by old secondary and primary forests in good shape of conservation, but the growth of panama's economy, special in the real state sector, as well as the lack of advocacy for this former canal zone forest, are putting this areas is jeopardy. Fundacion Avifauna prepared a program that will help to this conservation, at the same time that provides finance sustainability and environmental education to the neighbor communities.

The Panama Rainforest Discovery Center main attraction is an observation tower of 100 feet over the canopy. It also has a visitor center and ground trails. The funds collected by entrance fee and sales in the store go to conservation, scientific and environmental education programs.

One of the scientific programs is the monitoring of migratory birds with a MOSI station that works yearly from November to February. In the next years, there will be a monitoring station of raptors migration from the top of the observation tower, and other studies from the University of Panama.

Panama Rainforest Discovery Center en Pipeline Road: Ecoturismo, Conservacion, Educacion y Ciencia.

El Panama Rainforest Discovery Center en Pipeline Road es un centro de educación ambiental y ecoturismo localizado en Panama Central. El centro fue creada y es administrada por la Fundacion Avifauna Eugene Eisenmann, organización no gubernamental sin ánimo de lucro panameña. El Canal de Panamá está rodeado de bosque primario y secundario maduro en buen estado de conservación. Sin embargo estos bosques están en riesgo real dado el crecimiento económico de la economía panameña, en especial en el sector de bienes raíces, así como por la falta de conciencia y conocimiento sobre la existencia de estos bosques anteriormente bajo administración estadounidense de la zona del Canal. La Fundacion Avifauna Eugene Eisenmann trabaja en proyectos que apoyan esta conservación y que proveen sostenibilidad financiera y educación ambiental a las comunidades vecinas.

La atracción principal del Panama Rainforest Discovery Center es una torre de observación de 32 metros de altura sobre el dosel del bosque. Asimismo cuenta con un centro de visitantes y una ruta de senderos. Los fondos recolectados por la venta de entradas y productos de la tienda van para financiar los programas de conservación, investigación científica y educación ambiental. Uno de los programas de investigación científica es el monitoreo de aves migratorias en una estación MOSI (monitoreo de supervivencia invernal) que funciona de noviembre a febrero de cada año. En los próximos años se implementara un programa de monitoreo de migración de rapaces en la terraza de la torre de observación, y otras investigaciones por la Universidad de Panamá.

Schulte°, L. A.; Atwell, R. C.; Palik, B. J.

Avian Community Response to Spatial Patterns Created by Overstory Retention in Ecological-based Forestry. Lisa Schulte, ISU, Ames, IA; Atwell, R.C., ISU, Ames, IA; Palik, B.J., USFS-NRS, Grand Rapids, MN. lschulte@iastate.edu.

Overstory retention has been proposed as a mechanism to overcome structural and compositional simplification sometimes associated with traditional forest harvesting practices. Simplification may pose a problem for maintaining biodiversity, particularly of bird species, given their known response to habitat heterogeneity. Here we report initial breeding bird response to different spatial harvesting patterns in mature red pine (*Pinus resinosa*) forests in northern Minnesota, USA. The experiment includes four replicates of three overstory manipulations—dispersed retention, aggregate retention with small gaps, and aggregate retention with large gaps—and unharvested controls. Treatments were designed to increase structural complexity over time. Directly following harvest, we found few differences in the bird communities between control and treatment stands. Three years following harvest, avian abundance, richness, and diversity were all greater within treatments, with edge, shrub, and early successional habitat associates (e.g. Chestnut-sided Warbler [*Dendroica pensylvanica*], Chipping Sparrow [*Spizella passerine*]) generally showing positive response, as well as some mature forest species (e.g., Pine Warbler [*Dendroica pinus*], Rose-breasted Grosbeak [*Pheucticus ludovicianus*]). Ovenbirds (*Seiurus aurocapilla*) and Black-throated Green Warblers (*Dendroica virens*) were more abundant in control stands. There are, as of yet, no discernable differences in community composition between the three overstory treatments, but we expect differences to develop as they diversify due to understory development. While overstory retention harvests provide habitat for a diverse and abundant bird community, the temporal divergence we observed between treatment and control stands reveals the importance of uncut, mature red pine forest as a component of a biodiverse landscape.

Schultz°, C.; Wells, J.

The World's Most Ambitious Bird Conservation Plan: The Boreal Forest Conservation Framework. Caroline Schultz, Ontario Nature, Canada; Wells, J., BSI, Seattle, WA. carolines@ontarionature.org

Covering 1.5 billion acres, North America's Boreal Forest region contains one-quarter of the world's remaining original forests and is the largest intact forest ecosystem on Earth. However, rapid industrial development is expected to significantly impact the Boreal landscape in the next several decades. In an attempt to balance conservation and commercial interests and create a shared vision of the Boreal's future, a coalition of conservation groups, resource companies, financial institutions, and First Nations developed the Boreal Forest Conservation Framework in 2003. The Framework has two major goals: to protect at least half of Canada's Boreal Forest region in large, intercon-

nected protected areas; and to encourage the use of world-leading ecosystem-based resource management practices and state-of-the-art stewardship practices in the remainder of the region. In 2007 alone, the Canadian government protected nearly 36 million acres of federal lands in the Boreal, and important initiatives are currently underway to create new protected areas on provincial lands across Canada's Boreal Forest region. In addition, the Framework's principles have been incorporated into the land use plans developed by several First Nations, likely resulting in additional protected areas in the coming years. Current and future implementation of the Boreal Forest Conservation Framework's goals will undoubtedly benefit the estimated 1.65 to 3 billion birds that annually nest in the vast undisturbed landscapes of the Boreal Forest region.

Schwartz°, J.; Latimer, S.; Whitney, P.; Rhahmig, T.

Impacts of Recreation and the Benefits of Restoration Activities to Western Snowy Plover Along the Oregon Coast. Jesse Schwartz, Jones & Stokes Associates, Inc., Portland, OR; Latimer, S., JS&A,I, Portland, OR; Whitney, P., JS&A,I, San Jose, CA; Rhahmig, T., JS&A,I, Portland, OR. jschwartz@-jsanet.com.

The Pacific Coast population of western snowy plover (*Charadrius alexandrinus nivosus*) is federally listed as Threatened. However, populations of this coastal beach-associated shorebird in Oregon are increasing. Some mortality (or "take") associated with recreational activities does occur in its various life stages (egg, hatchling, fledgling, and adult). At the same time the Oregon Department of Parks and Recreation has implemented mitigation measures to improve population performance, including predator control and habitat restoration. We used life tables and regression analysis to assess the relationships between restoration efforts, beach recreation, and population performance at seven sites along the Oregon Coast. Restoration data was provided by the Oregon Department of Parks and Recreation which manages some of the occupied sites. Recreation data was previously assessed using field and mail-in surveys at all occupied sites along the Oregon Coast. Western Snowy Plover demographic data was compiled from field studies conducted by the Oregon Natural Heritage Information Center. Analysis of demographic data (2000-2006) showed mortality to be highest for the fledgling and hatchling stages. Egg-to-hatchling survival was the vital rate most strongly correlated with the population's intrinsic potential (lambda), explaining approximately 89% of the variability seen in lambda. Density of access points (number of access points per acre of total habitat) was the strongest indicator of a relationship between recreational activities and egg-to-hatchling survival and appears to be a good overall indicator of the impacts of recreational activity. The number of years of predator control was a strong indicator of fecundity, suggesting that this restoration activity may be providing some benefits. It is not possible to determine what specific activities have been directly contributing to the overall impacts of recreation on survival. Dogs are likely a factor, since 30% of Oregon beach visitors include dogs in their beach visits. Other impacts, such as the attraction of predators from human-associated food and refuse, and harassment from recreational activities other than dogs, are likely at play.

Schweitzer°, S. H.; McGregor, S. P.; Wiggers, E. P.; Mills, W. E.

Distribution Within, and Use of Marsh Habitats by Clapper and King Rails in South Carolina. Sara H. Schweitzer, UG, Athens, GA; Sean P. McGregor, UG, Athens, GA; Ernie P. Wiggers, Nemours Wildlife Foundation, Seabrook, SC; William E. Mills, NWF, Seabrook, SC. schweitz@warnell.uga.edu

Although there are concerns about providing quality, tidal marsh habitat to multiple species in coastal South Carolina, no studies had investigated the distribution or frequency of occurrence of indicator species such as Clapper (*Rallus longirostris*) and King Rails (*R. elegans*). We estimated frequency of occurrence of Clapper and King Rails in managed impoundments and tidal marshes during summer 2005, and winter and summer 2006 within the ACE Basin of South Carolina, using call broadcast surveys. We related occurrences to habitat structure during winter and summer 2006. We assessed distribution of rails relative to marsh type by radio-tracking 3 Clapper Rails and 1 King Rail from March to August 2006. Rails occurred more frequently in tidal marshes during summer and winter. Tidal marshes were characterized by dense, horizontal cover of tall (100–200 cm) grass species (*Spartina* spp.). All Clapper Rail radio-locations were in tidal marshes, but locations of the King Rail were in managed impoundments. Tidal marshes provided resources for Clapper Rails, while managed impoundments may provide resources for King Rails. Further research is needed to improve our understanding of rails' use of coastal marsh impoundment systems under different management schedules.

Seamans°, Mark

A Pilot Study to Test a Continental Sampling Design for Marsh Bird Population Monitoring in the United States. Mark Seamans, USFWS, Laurel, MD. mark_seamans@fws.gov.

The conservation status of most marsh bird species is unclear because existing monitoring programs do not effectively sample this group of birds. A pilot study in New York and Wisconsin will begin in 2008 to examine the feasibility of a continental sampling design for marsh birds. Strata for the continental design are hierarchical and allow for estimation of abundance or occupancy at various spatial scales, including states. Existing wetland cover maps (e.g., National and Wisconsin Wetland Inventory) will be used to define the spatial sampling frame. A generalized random tessellation stratified (GRTS) approach will be used to randomly select primary sampling units from a hexagonal grid. Secondary sampling units (survey locations) will be randomly located in wetlands within selected primary sampling units. The standardized response design (protocol) adopted by National Wildlife Refuges will be used for this survey. Some of the key design and implementation issues to be addressed during the pilot include: accessibility of survey locations (private land and interior marsh); temporal changes in wetlands; utility of existing wetland maps; accounting for imperfect detectability; combining design and model based estimation; and coordination of survey effort. Data from the proposed design can be used to inform management decisions regarding harvest, endangered species status, and habitat management.

Estudio Piloto del Diseño Continental para el Monitoreo de las Poblaciones de Aves de Humedales en los Estados Unidos

El estado de conservación de la mayoría de las aves de humedales es incierto porque los programas de monitoreo existentes no muestrean efectivamente a este grupo de aves. Un estudio piloto comenzará en Nueva York y Wisconsin en el 2008

para determinar la viabilidad de establecer un esquema de muestreo continental de las aves de humedales. Los estratos del diseño continental serán jerárquicos y permitirán la estimación de abundancia y ocupación en varias escalas espaciales, incluyendo a los estados. Los mapas de humedales existentes (por ejemplo, el Inventario de Humedales Nacional y de Wisconsin) serán usados para definir el marco de muestreo a nivel espacial. Un esquema generalizado aleatorio, teselado y estratificado (GRTS por sus siglas en inglés) se usará para seleccionar las unidades de muestreo en una grilla hexagonal. Las unidades secundarias de muestreo (localidades de de conteos) serán seleccionadas de forma aleatoria en los humedales de las unidades primarias de muestreo. El diseño estandarizado de respuesta (protocolo) adoptado por los Refugios de Vida Silvestre en la Nación será usado para el muestreo. Algunos de los problemas de diseño e implementación que serán estudiados durante la fase piloto incluyen: el acceso a las localidades de conteo (en propiedad privada y el interior de los humedales); la utilidad de los mapas de humedales existentes; el ajuste de los conteos para la detección imperfecta; la combinación de estimados basados en modelos y diseño; y la coordinación del esfuerzo de muestreo. Los datos del diseño propuesto podrán ser usados para informar la toma de decisiones de manejo con relación a la caza, el status de especies en peligro de extinción, y el manejo de los hábitats.

Seavy°, N. E.

Evaluating Decision Support Tools for Riparian Habitat Conservation: What is Important and What is Needed? Nathaniel E. Seavy, PRBO, Petaluma, CA, and ICE, UC, Davis, CA. nseavy@prbo.org.

Over the last two decades, PRBO Conservation Science has been conducting research in riparian habitats in California's Central Valley. A major goal of this work has been to provide land mangers and policy makers with information that can inform decisions about the conservation and restoration of riparian habitats. To achieve this goal, PRBO Conservation Science has worked to communicate their information to decision makers in a wide variety of formats, including habitat conservation, publications in scientific journal, web-pages, and reports to management agencies. However, because these decision support tools can be used in many different ways, in can be difficult to evaluate their success. To develop a better understanding of how riparian habitat decision support tools are used, and where investments in new tools may be most important, I conducted a survey of the riparian habitat conservation and restoration community. Respondents were asked to rate the importance and availability of information and resources used to make decisions about restoration and conservation of riparian habitats. These results provide an example of one approach toward refining decision support tools for avian conservation.

Sedgley°, A.; Norman, D. M.

The Puget Sound Seabird Survey. Adam Sedgley, Seattle Audubon Society, Seattle, WA; Norman, D., SAS, Seattle, WA. adams@seattleaudubon.org.

Many wintering seabirds in Puget Sound are declining. Birdwatchers who remember rafts of thousands of Western Grebes, scoters, and loons are now lucky to see more than a couple hundred. Data from the Washington State Puget Sound Ambient Monitoring Program, and more recently from a Washington Sea Grant funded study, have confirmed these declines, but the research and monitoring to establish causation, let alone reversal of the trends is lacking. With a new campaign to "clean up" Puget Sound, the new Puget Sound Partnership, and as the largest bird conservation group in Puget Sound, Seattle Audubon has initiated a citizen-based study of seabirds in central Puget Sound this winter. The Puget Sound Seabird Survey (PSSS) is comprised of 40 volunteers who visit 30 survey sites monthly, covering 25 square miles of near-shore saltwater. Modeled after the British Columbia Coastal Waterbird Survey with online data entry and validation, this program is providing the ONLY land-based survey for birds in central or south Puget Sound. The major interest by local birders in this project, which has no local and regional funding, indicates that Citizen Science, with good training and outcomes, can succeed. Seattle Audubon members will report on the progress of the project as it seeks major collaboration between a multitude of local agencies and other Audubon chapters, to expand the study into a multi-year program throughout Puget Sound. Only through dedicated and talented citizen scientists, backed by sound science, can such a project of this ambition and scope be possible.

Shriver°, G. W.

Landscape Characteristics and Habitat use of Marsh Birds in the Northeastern U.S. Greg Shriver, University of Delaware, Newark DE. gshriver@udel.edu

We evaluated the contributions of spatial distribution, juxtaposition, and quality of salt marsh habitat to salt marsh breeding birds along the New England coast, U.S.A. We divided the region into two landscapes, Long Island Sound and the Gulf of Maine, based on latitude, geologic and human land use histories, and physical characteristics (tidal amplitude, wave energy). Species richness in both landscapes was at least 20% greater on larger salt marshes. Response to marsh isolation and human development varied regionally, with bird species more sensitive to marsh isolation and road proximity in the more pristine (Gulf of Maine) than altered (Long Island Sound) region. Relatively little overlap was evident between regions in predictors of occurrence and effects of marsh area on particular species. These results indicate that: (1) salt marsh bird communities show similar associations with habitat area and isolation as do forest, grassland, and freshwater wetland bird communities, and (2) landscape context mediates the influence of these parameters on the avian community and should be considered when defining the habitat requirements of salt marsh breeding birds.

Shriver°, G. W.; Sauer, J. R.

Coordinating Across Scales: Building a Regional Marsh Bird Monitoring Program from National and State Initiatives. Greg Shriver, UD, Newark, DE, Sauer, J. USGS Patuxent, MD. gshriver@udel.edu.

Salt marsh breeding bird populations (rails, bitterns, sparrows, etc.) in eastern North America are high conservation priorities in need of site specific and regional monitoring designed to detect population changes over time. The present status and trends of these species are unknown but anecdotal evidence of declines in many of the species has raised conservation concerns. Most of these species are listed as conservation priorities on comprehensive wildlife plans throughout the eastern US.

National Wildlife Refuges, National Park Service units, and other wildlife conservation areas provide important salt marsh habitat. To meet management needs for these areas, and to assist regional conservation planning, survey designs are being developed to estimate abundance and population trends for these breeding bird species. The primary purpose of this project is to develop a hierarchical sampling frame for salt marsh birds in Bird Conservation Region (BCR) 30 that will provide the ability to

estimate species population abundances on 1) specific sites (i.e. National Parks and National Wildlife Refuges), 2) within states or regions, and 3) within BCR 30. The entire breeding range of Saltmarsh Sharp-tailed and Coastal Plain Swamp sparrows are within BCR 30, providing an opportunity to detect population trends within the entire breeding ranges of two priority species.

Coordinando a Través de Escalas: La Construcción de un Programa Regional de Monitoreo de Aves de Marisma en Base a Iniciativas Estatales y Nacionales.

Las poblaciones de aves reproductivas en marismas salinas (rascones, avetoros, gorriones, etc.) en el este de Norteamérica, son una alta prioridad de conservación que necesita de monitoreo regional específico al sitio para detectar cambios poblacionales a través del tiempo. El estatus presente y las tendencias (poblacionales) de estas especies son desconocidos, pero se cree que están declinando. La mayoría de estas especies están enlistadas como prioridades de conservación en planes globales de de vida silvestre en todo el este de los Estados Unidos.

Los Refugios Nacionales de Vida Silvestre, Parques Nacionales y otras áreas de conservación disponen de hábitat de marismas salinas, sin embargo, se sabe poco acerca de la abundancia, tendencias poblacionales o necesidades de manejo de estas especies de aves reproductivas. El propósito principal de este proyecto es desarrollar un marco de muestreo jerárquico para aves de marismas salinas en la Región de Conservación de las Aves 30 (BCR por sus siglas en inglés), que nos brinde la posibilidad de detectar abundancias de poblaciones de especies en (1) Sitios específicos (e.g. Parques Nacionales y Refugios Nacionales de Vida Silvestre), (2) Dentro de estados y regiones, y (3) Dentro del BCR 30. Todo el rango reproductivo de los gorriones *Ammodramus caudacutus* y *Melospiza georgiana nigrescens* está dentro de la BCR 30, lo que nos da la oportunidad de detectar tendencias poblacionales en todo el rango reproductivo de estas dos especies prioritarias.

Simons°, T. R.; Pollock, K. H.; Wettroth, J. M.; Alldredge, M. W.; Pacifici, K.; Brewster, J.

Sources of Measurement Error, Misclassification Error, and Bias in Auditory Avian Point Count Data. Theodore R. Simons, USGS, Raleigh, NC; Pollock, K.H., NCSU, Raleigh, NC; Wettroth, J.M., Maxim Integrated Products, Cary, NC; Alldredge, M.W., NCSU, Raleigh, NC; Pacifici, K., NCSU, Raleigh, NC; and Brewster, J.,NCSU, Raleigh, NC. ted_simons@ncsu.edu.

Avian point counts vary over space and time due to actual differences in abundance, differences in detection probabilities among counts, and differences associated with measurement and misclassification errors. Most practitioners assume that current methods for estimating detection probability are accurate, and that observer training obviates the need to account for measurement and misclassification errors in point count data. Our approach combines empirical data from field studies with field experiments using a system for simulating avian census conditions when most birds are identified by sound. Our objectives are to; identify the factors that influence detection probability on auditory point counts, quantify the bias and precision of current sampling methods, and find new applications of sampling theory and methodologies that produce practical improvements in the quality of bird census data. We have found that factors affecting detection probabilities on auditory counts, such as ambient noise, can cause substantial biases in count data. Distance sampling data are subject to substantial measurement error due to the difficulty of estimating the distance to a sound source when visual cues are lacking. Misclassification errors are also inherent in time of detection methods due to the difficulty of accurately identifying and localizing sounds during a count. Factors affecting detection probability, measurement errors, and misclassification errors are important but often ignored components of the uncertainty associated with point-count-based abundance estimates. The PIF network can serve as an important conduit for promoting the adoption of sampling methods that account for sources of bias and measurement error.

Sinclair°, J.; Perrigo, G.

Utilizing Thermal Imagers to Monitor Nocturnal Neotropical Migrant Activity in the Rotor Swept Area of a Wind Turbine. Jim Sinclair, TXESA, Kingsville, TX; Perrigo, G., TAMUK, Kingsville, TX. jim.sinclair@tx-esa.com

In September 2004 we commenced a 33 month pre-construction avian risk assessment for a proposed wind turbine farm in Kenedy County, TX. One of the major objectives was to quantify the number of neotropical migrants that might be expected to pass through the rotor swept area (RSA) during nocturnal migration. In order to meet that objective it was necessary to develop a methodology that could, with acceptable accuracy, determine if a given contact was a bird in the RSA. Infrared thermal imagers are currently the only device that can reliably detect individual small birds. Two limitations of using thermal imagers are the lack of range information and the difficulty of determining the identity of a detected object (bird, bat, insect, etc.). We developed a technique that enabled us to determine whether a detected object was a bird in the rotor swept area. Application of this technique enabled us to quantify the exposure risk to nocturnal neotropical migrants.

Skorkowsky°, R. C.; Beck, J. L.; Hayward, G. D.

Designing a Regional Northern Goshawk Monitoring Program Based on a National Protocol. Robert C. Skorkowsky, USFS; Beck, J.L., University of Wyoming; Hayward, G.D. USFS. rskorkowsky@fs.fed.us .

Northern goshawk (*Accipiter gentilis*) have been designated as a sensitive species in 6 of 8 administrative regions of the U.S. Forest Service. The Forest Service developed the Northern Goshawk Bioregional Monitoring Design (Woodbridge and Hargis 2006) to estimate goshawk presence over broad spatial extents. Here, we adapt this design to the Forest Service Rocky Mountain Region. We developed a stratified random design to monitor presence in primary and secondary sampling units, defined by (1) delineating suitable nesting habitat, and (2) modeling to define primary and secondary strata within suitable habitats. We categorized 58 previously located nesting territories in the region as primary (21) or secondary (37), and used these territories to model nesting habitat. We applied model results to stratify 688-ha sampling units containing 120 call stations within each analysis cell. Primary and secondary strata were further stratified as low or high cost and sample sizes were estimated across the scale of the region. In summer 2006, we conducted a pilot study to estimate fledgling and nestling season detection probabilities and presence of goshawk across the region. Region 2 of the USFS is working towards developing partnership to implement at the required sampling intensity in 2009 and 2012 in order to determine the population trend of this species.

Skorkowsky°, R. C.; Klute, D.; Lukacs, P. M.; Hanni, D.; Blakesley, J.

A Strategy for Monitoring Priority Bird Species within Bird Conservation Regions. Robert Skorkowsky, USFS, Steamboat Springs, CO; Klute, D., CDOW, Denver, Co; Lukacs, P., CDOW, Fort Collins, Co; Hanni, D., RMBO, Fort Collins, CO; Blakesley, J., RMBO, Fort Collins, CO. rskorkowsky@fs.fed.us.

Recent species prioritizations have increased interest in assuring that bird monitoring programs target priority species and are responsive to management issues. We propose a BCR-based sampling frame and improved sample design to address these issues. The sample design is a generalized random tessellation stratified design that ensures a spatially balanced sample even with fluctuating funding levels. The design incorporates stratification based on unchanging physical features rather than on ephemeral habitat conditions that can complicate data analysis. This approach removes dependence on mapped cover-types and allows for flexible implementation. We propose a point-transect design with collection of vegetation data to allow for post-stratification, direct hypothesis testing and evaluation of vegetation-specific population trends. Information from existing databases provides the ability to correlate bird population changes to management. For abundant species, distance analysis is recommended, whereas for less common species, removal and occupancy models are often effective alternatives. Data collection techniques can be layered during field work to allow multiple analysis approaches without additional costs. As an example, we applied this strategy to BCR 16, demonstrating increased scientific defensibility, improved spatial relevance, and more flexibility for partner participation. The result is a coordinated bird monitoring strategy that addresses management of priority bird species across agency boundaries.

Slattery, S.; Smyth, S.; Devries, J.; Howerter, D.; Armstrong, L.; Mack, G.; Smith, K.; Butterworth, E.°

Predicting Breeding Waterfowl Population Distribution to Direct Conservation Activities in the Western Boreal Forest. Stuart Slattery, DUC Stonewall, Canada; Smyth, S., DUC, Edmonton, Canada; Devries, J., DUC Stonewall, Canada; Howerter, D., DUC Stonewall, Canada; Armstrong, L., DUC Stonewall, Canada; Mack, G., DUC Edmonton, Canada; Smith, K., DUI Edmonton, Canada; Butterworth, E., DUC Edmonton, Canada. e_butterworth@ducks.ca

About 12–15 million waterfowl annually use the Western Boreal Forest (WBF) during the breeding season, which is why the WBF ranks as the second most important duck breeding area in North America. Despite this importance, we know very little about waterfowl, their habitat requirements, and hydrology in this wetland-rich region. Potential impacts of the growing human footprint on waterfowl are largely unstudied and conventional landscape and management practices may be challenged to effectively conserve waterfowl habitat. However, WBF waterfowl conservation is challenged further by some fundamental questions including: 1) How are waterfowl populations distributed across this region; and 2) What suite of conservation programs are most likely to be effective given this pattern of spatial distribution? Currently, waterfowl are counted across much of the WBF annually each spring, but this U.S. Fish and Wildlife Service (USFWS) survey only provides a coarse indication of waterfowl distribution. Consequently, we are combining USFWS survey data with several large-scale habitat databases to develop models predicting waterfowl distribution across the entire survey area. As well, we are developing smaller-scale models to predict distribution patterns useful for local conservation planning. Ultimately, these models will help us better target research and conservation actions at several spatial scales.

Slay*, C. M.; Smith, K. G.

Nest Success of Four Shrubland Specialists in Actively Maintained Early Successional Habitat in Connecticut. *Christy M. Slay, UA, Fayetteville, AR; Smith, K.G., UA, Fayetteville, AR. cmelhar@uark.edu

Though shrubland species continue to decline 1-3% annually, few nest success studies have focused on shrubland specialists, disturbance dependent species that occupy areas of low, woody habitat. In this study, nest success rates of four shrubland species, Prairie Warbler, Blue-winged Warbler, Field Sparrow, and Indigo Bunting, were determined at a site actively maintained for shrubland habitat. Data were collected on 123 nests (June-August, 2004-2006) at Bent of the River Audubon Center, Southbury, Connecticut. Nest success was calculated using the Mayfield method for comparison to other studies, and rates were higher than previous studies. These previous studies relate shrubland nest success to land management, but management recommendations were made using results from single species, or results where shrubland specialists were grouped with canopy gap/ forest species. Grouping different guilds to advise habitat management may not lead to best practices for shrubland specialists. Nest success reported in prior studies was often low and/or had small nest sample sizes when multiple species were targeted. All of these factors should be considered when addressing future studies on shrubland management. Preliminary results identified in this study show that active management of shrubland habitat consistently supported shrubland specialists above or near replacement level and may be a source population for these declining species.

Slobe°, D.

Playa Lakes Joint Venture's Use of Communications and Education to Help Achieve Bird Conservation Goals. Debbie Slobe, Playa Lakes Joint Venture, Lafayette, CO. Debbie.slobe@pljv.org.

The Playa Lakes Joint Venture employs a Strategic Habitat Conservation framework to achieve bird population and habitat goals. This framework includes communications and education (C&E) which are as essential as biological planning in reaching goals. C&E are subject to the same rigorous planning, implementation and evaluation processes as is biology. "Audiences" are like "species" in our process and are prioritized, monitored and evaluated. Bird population and habitat goals are correlated to audience data to determine how much C&E is needed to reach goals. For example, according to our audience research, 28% of playa landowners in the PLJV region are "highly willing" to plant native grass buffers around the wetlands. According to our biological data, if 28% of playas were buffered through native CRP, that would equal about 159,600 wetland and 478,800 upland acres conserved region-wide (1:3 playa to buffer ratio). In Texas Bird Conservation Region 18, if 28% of playas were buffered, it would increase the area's carrying capacity for Cassin's Sparrow by 15% and maintain 35% of the goal for non-breeding shorebirds and 40% of the waterfowl goal in all seasons. C&E programs are designed to bring that 28% of playa landowners from willingness to conservation action and increase willingness among the unwilling. We document how C&E programs are making progress toward increasing landowner participation in con-

servation programs and willingness, and make improvements as necessary.

Playa Lakes Joint Venture: El Empleo de la Comunicación y la Educación para Ayudar a Lograr las Metas Propuestas en Conservación de Aves

El Playa Lakes Joint Venture implementa un marco de Conservación Estratégica de Hábitats para alcanzar metas concretas en el manejo de hábitats y de poblaciones de aves. Este marco incluye la comunicación y la educación (C&E), herramientas tan esenciales como el planeamiento biológico para alcanzar las metas propuestas. Al igual que la planificación biológica, C&E están sujetas a los mismos procesos de planeamiento, implementación y evaluación. El público especifico con el cual trabajamos conjuntamente, es como una "especie" en nuestro proceso de planificación, al cual se le da una alta prioridad, se supervisa y se evalúa. Las características de las poblaciones de aves y de sus hábitats se correlacionan a las características particulares de cada grupo para poder determinar la C&E necesaria para alcanzar las metas propuestas. Por ejemplo, según nuestra investigación, el 28% de los propietarios de humedales que están localizados dentro de la región PLJV están "muy de acuerdo" con sembrar plantas nativas alrededor de las humedales, para generar zonas de amortiguamiento. Según nuestros datos biológicos, si el 28% de los humedales fueran sembrados con CPR nativo, esto valor sería cercano a 159.600 acres de humedales y a 470.800 acres de hábitats de terrenos elevados. Esto sería equivalente a una proporción 1:3 de área de humedal respecto al área de amortiguamiento. Si en la Región de Conservación de Aves número 18 en Texas el 28% de humedales fueran protegidos con zonas de amortiguamiento, aumentaría la capacidad de carga para el Gorrión de Cassin en un 15% aproximadamente. Además abarcaría el 35% de la meta para aves playeras que no están en época reproductiva y el 40% de la meta para aves acuáticas que habitan todo el año. Programas de C&E están diseñados para llevar el 28% de propietarios actuales de humedales de la buena predisposición a la acción directa de conservación y así, incentivar a que otros propietarios se sumen a esta acción de conservación. En este trabajo hemos documentado como los programas de C&E incentivan e incrementan la participación y la buena predisposición de los propietarios en programas de conservación y realizar acciones como necesarias para mejorar cosas.

Smith*, J.; Marra, P. P.; Reitsma, L. R.

The Northern Waterthrush: Territoriality and Roosting Behavior during the Non-breeding Season and Its Consequences on Individual Performance. Joseph Smith; Marra, P.P., Smithsonian Migratory Bird Center, Washington, DC; Reitsma, L.R., Plymouth State University, Plymouth, NH. smithjoe@si.edu.

Using radio-telemetry we examined the relationships among space use strategies and home range attributes along with behavioral and physical characteristics of the northern waterthrush (*Seiurus noveboracensis*). Evidence for territoriality emerged with the pattern that more aggressive individuals were more site-persistent and maintained more exclusive home ranges. A significantly greater proportion of these aggressive individuals were male. Territoriality had benefits, with birds occupying the most exclusive areas gaining mass during the study period. These benefits may be the result of maintaining higher-quality territories which were both wetter and had higher food availability than less exclusive home ranges. The probability of site-persistence was influenced by food availability. Birds that were not site-persistent consistently moved from drier areas with lower food availability to wetter areas with higher food availability. This mid–season movement does not appear to adequately compensate for initially lower levels of food availability as these birds tended to lose mass throughout the study period. Regardless of diurnal space use strategies, most birds were site-faithful to coastal red mangrove roost sites at night. Overall our results suggest that high-quality habitat, determined by moisture levels and food availability may be limiting for northern waterthrush. Continued habitat destruction and predictions of a drying climate on wintering areas have the potential to severely impact populations of this species.

Smith°, D.; Maestas, J.; Lipsky, A.

Focused Bird Conservation Delivery through Farm Bill Programs: Partnerships and Programmatic Approaches. Dave Smith, Intermountain West Joint Venture, Missoula, MT; Maestas, J., NRCS, Redmond, OR; Lipsky, A., NRCS, Warwick, RI. dave@iwjv.org.

Farm Bill conservation programs are identified as a key element of bird conservation delivery by the major bird conservation initiatives and the 18 U.S. Habitat Joint Ventures. Opportunities for partnership-based Farm Bill delivery have been expanded with each successive Farm Bill. The core element of Strategic Habitat Conservation is a strong science foundation to guide habitat implementation, including habitat objectives (what needs to be done) and spatial prioritization (where it needs to be done). We present a framework for developing successful Farm Bill bird conservation initiatives using the science foundation of the Joint Ventures and bird conservation plans. Key elements of the framework are as follows: 1) identify priority landscapes with detailed bird conservation planning and significant amounts of private lands, 2) take advantage of partner leveraged resources, and 3) develop Farm Bill program initiatives to focus habitat delivery. Initiatives may involve dedicated program funding pools, programmatic adjustments, focused partner outreach, and/or agreements to involve partners in program delivery. Initiative design should consider: biological justification, staffing capacity to deliver projects, monitoring and evaluation that includes the effect of the initiative on NRCS national indicator goals, assessment of Farm Bill program applicability and eligibility, and programmatic adjustments that may be necessary to facilitate effective on-the-ground conservation (e.g., cost share rates, priority ranking tools, etc.)

Smith°, M. D.; Godwin, D.; McKenzie, D.; Burger, Jr., L. W.

Northern Bobwhite Conservation Initiative: Working Multiple Fronts in Bird Conservation. Mark Smith, Auburn University, Auburn, AL; Godwin, D., MDWFP, Starkville, MS; McKenzie, D., WMI, Ward, AR; Burger, W., MSU, MS State, MS. Mds0007@auburn.edu.

The Northern Bobwhite Conservation Initiative (NBCI) is an aggressive range-wide habitat-based effort to restore northern bobwhite populations to 1980 levels. Created in 2002 by the Southeast Quail Study Group (SEQSG) at the request of the Directors of the Southeastern Association of Fish and Wildlife Agencies, NBCI is managed by a full-time coordinator in conjunction with the SEQSG. Whereas the NBCI specifically targets bobwhite restoration on private lands, other disturbance-dependent birds benefit through the restoration and management of native habitats (e.g., grasslands, pine and hardwood savannas), habitat enhancement on agricultural and forest land bases, control of invasive exotic plant communities, and reintroduction of natural disturbance regimes (mainly fire). Working

with numerous state, federal, and non-governmental organizations, the NBCI simultaneously targets habitat restoration on private lands through multiple avenues including a spatially explicit, range-wide habitat-based management plan, a realistic, pragmatic research agenda, participation in land management decisions at local, state, and national levels, enhancement of Farm Bill programs and practices, national advocacy and awareness, and identification and development of new, non-traditional partnerships. NBCI has served as the catalyst for several state-sponsored private land programs and initiatives, recruitment of private lands biologists, and adoption of "quail friendly" management practices by private and public organizations. We address several key issues required to further facilitate bird conservation on private lands.

Sneary°, M.; Clay, R.; Fisher, I.

Mobilizing Bird Knowledge for Conservation through a Range of Linked Web Applications. Martin Sneary, BirdLife International, Cambridge, UK; Clay, R., BI, Quito, Ecuador; Fisher, I., Royal Society for Protection of Birds, Bedfordshire, UK. martin.sneary@birdlife.org.

Timely access to up-to-date information underpins national, regional and global conservation priority-setting, and the implementation of focused and cost-effective conservation action. As a Partnership, BirdLife has focused its scientific efforts on compiling information on bird species and their conservation status, and identifying and documenting a network of sites critical for their survival – Important Bird Areas (IBAs). BirdLife has developed a range of web-based tools to ensure that this information can be kept up-to-date and readily accessed. These tools support data collation, verification, update, storage and dissemination, and address a range of users, from scientists and decision-makers to national Partners, and their local conservation groups and caretaker networks, involved in IBA conservation action and advocacy. Public participation (essential for effective IBA monitoring) is encouraged through citizen science initiatives such as Worldbirds (www.worldbirds.org) and eBird (www.ebird.org). By mobilizing knowledge on bird species and the sites they depend on we hope to support greater uptake and appropriate use of objective, up-to-date information by key audiences (including national Governments and agencies, international development institutions, multilateral environmental agreements and the corporate sector), resulting in better conservation decision-making nationally, regionally and globally.

Movilizando el Conocimiento Sobre las Aves para su Conservación a lo Largo de una Gama de Aplicaciones Web Relacionadas Entre Sí.

El acceso oportuno a la información actualizada sostiene la priorización de las acciones de conservación a nivel nacional, regional y global, y la puesta en práctica de las acciones de conservación focalizadas y reentables económicamente. Como una red de socios, BirdLife ha centrado sus esfuerzos científicos en la recopilación de información sobre especie del aves y su estado de conservación; y en la identificación y documentación de una red de los sitios críticos para su supervivencia, las Áreas Importantes para las Conservación de las Aves (IBAs). BirdLife ha desarrollado una gama de herramientas basadas en la web para asegurar que esta información pueda ser mantenida actualizada y sea fácilmente accesible. Estas herramientas facilitan la colección, verificación, actualización, almacenaje y la difusión de la información; y le permiten acceder a una amplia gama de usuarios, desde científicos y de tomadores de decisiones a los socios nacionales, grupos locales de conservación y redes locales de vigilancia; todos implicados en las acciones de conservación y cabildeo de la IBA. La participación pública (esencial para el monitoreo eficaz de la IBA) se fortalece con iniciativas de "ciencia ciudadana" tales como *Worldbirds* (www.worldbirds.org) y *eBird* (www.ebird.org). A través de la movilización del conocimiento sobre las especies de aves y los sitios de los éstas dependen esperamos apoyar de manera efectiva y apropiada al uso de la información objetiva y actualizada por parte de las audiencias claves (incluyendo gobiernos nacionales y agencias, instituciones internacionales de desarrollo, convenios ambientales multilaterales y al sector corporativo), dando como resultado la mejor toma de decisiones para la conservación a nivel nacional, regional y global.

Somershoe°, S. G.; English, P.; Campbell, J.

Grassland Habitat Management for Henslow's Sparrow on an Important Bird Area in Tennessee. Scott G. Somershoe, TWRA, Nashville, TN; English, P. TWRA, Nashville, TN; and Campbell, J. TWRA, Nashville, TN. scott.somershoe@state.tn.us.

Bark Camp Barrens WMA (BCBWMA), a 2700-acre wildlife management area in Coffee County, Tennessee, has been recognized as an Audubon Important Bird Area and is managed by Tennessee Wildlife Resources Agency. Henslow Sparrows were first found breeding on BCBWMA in 2000. The Henslow Sparrow is a species of Greatest Conservation Need in Tennessee, and as a result of the discovery of a sizeable breeding population (>50 breeding pairs), TWRA began conversion of fescue fields to native warm season grasses. Approximately 250 acres of fescue fields were sprayed, burned, and planted with native warm season grasses in 2004. Approximately 48 singing males were counted in summer 2006 on the aforementioned 250 acres and on 50 acres of a wetland mitigation site that was burned by an arsonist in 1999. A management plan was also finalized in 2007 to manage grasslands for Henslow Sparrows via prescribed fire. The first implementation of the plan occurred in winter 2006-2007 with 60 acres being burned. To monitor sparrow response to burning and vegetation structure, line transect surveys have been conducted in 2006 and 2007 by TWRA non-game biologists to assess sparrow breeding density with respect to time since management. Only 22 Henslow Sparrows were found in 2007.

Sorenson°, L. G.

Impacts of Climate Change on Birds and Habitats in the Caribbean. Lisa G. Sorenson, Society for the Conservation and Study of Caribbean Birds, Boston, MA. LSoren@bu.edu

The Caribbean is home to over 560 species of birds, more than 25% of these species are endemic to the region and 56 are globally threatened. It is also a critically important region for many Neotropical migrants. These species depend on the same marine, wetland, and forest habitats as resident and endemic species. Expected effects of global warming in the Caribbean include warmer oceans, increased frequency and severity of hurricanes, sea level rise, and increased summer drought. These effects are already being observed in some areas and are likely impacting birds. Hurricanes cause mortality from exposure to winds, rain, and storm surge. In the storm aftermath, birds experience shortage of food, nest and roost sites. Data from the Bahamas and Puerto Rico show a trend of decreasing rainfall that is consistent with global warming predictions. Local wetlands are at risk of drying up and wildfires will likely increase, resulting in habitat loss and more invasive plants. Caribbean islands and waters are already under considerable pressure from widespread development and land management practices, activities which have already diminished habitat for wildlife. Global warm-

ing threatens to exacerbate these problems considerably and could push some of the most endangered species to extinction. It is imperative to protect and restore coral reefs, mangroves, wetlands and forests, increase public awareness, devise management strategies to mitigate impacts, and lower our greenhouse gas emissions.

Les Impacts du Changement Climatique sur les Oiseaux de la Caraïbe et leurs Habitats.

La Caraïbe accueille plus de 560 espèces d'oiseaux dont 25% sont endémiques et 56 sont en danger. C'est une région importante pour les migrateurs néotropicaux. Ces espèces dépendent des mêmes habitats que les espèces résidentes et endémiques utilisent. Les effets du réchauffement de la planète pour la Caraïbe sont le réchauffement des océans, l'augmentation de la fréquence et de la sévérité des cyclones, l'augmentation du niveau de la mer et des sécheresses. Ces effets sont déjà observés dans certaines zones et ont un réel impact sur les oiseaux. Les cyclones engendrent une mortalité des oiseaux par l'action du vent et de la pluie. Apres les cyclones, les oiseaux ont du mal à trouver nourriture et sites de nidification. Des données en provenance des Bahamas et de Porto Rico montrent une tendance a la diminution de la pluviométrie ce qui correspond avec les modèles de prédiction du changement climatique. Les zones humides deviennent ainsi plus vulnérables à l'assèchement et aux feux. Ceci entraine une plus grande perte d'habitats et une augmentation des espèces invasives. La Caraïbe subit déjà une pression environnementale énorme causée par le développement et la mauvaise gestion des terres qui entraine elle aussi une perte considérable d'habitat pour la faune. Le réchauffement de la planète risque d'augmenter ces pertes de façon irréversible de sorte que certaines espèces pourraient faire face à l'extinction. Il est impératif de protéger et de réhabiliter les récifs coralliens, mangroves, zones humides et forêts ainsi que d'augmenter la sensibilisation du public quant à ces dangers et de formuler une stratégie de gestion afin de limiter les impacts et diminuer les émissions de gaz à effet de serre.

Sornoza°, F.

Land Acquisition as a Vital Tool to Protect the Rarest Birds in Ecuador. Francisco Sornoza, Fundacion Jocotoco, Equador. Fsornoza@fjocotoco.org.

Over two decades ago it was still thought that environmental education alone was sufficient to protect threatened bird species in Ecuador. We realized that was insufficient and that something more was needed. This is where Fundacion Jocotoco became involved in land conservation through the acquisition of strategic sites that maintained key populations of bird species at risk of extinction. Strategic land acquisition is an effective tool for conservation, as it not only secures in perpetuity natural habitat for birds and biodiversity, but importantly directly links with the surrounding communities. This permanent marriage between the private protected area and adjacent community greatly strengthens conservation actions, as experienced by the Fundacion Jocotoco. In its first ten years, Fundacion Jocotoco has created eight nature reserves distributed throughout Ecuador that protects more than 55% of Ecuadorian birds, of which 100 species are endemic and 45 are globally threatened. This network of reserves has enabled an increase in the populations of many threatened and endemic birds, as well as provided key habitat for Neotropical migratory birds.

Adquisición de Tierras una Herramienta Vital para Proteger Especies de Aves Amenazadas en Ecuador.

Hace más de dos décadas todavía se pensaba que la educación ambiental era suficiente para proteger especies de aves amenazadas en Ecuador. Actualmente sabemos que no. Hacía falta algo más. Es aquí donde Fundacion Jocotoco se involucra en conservación las compras de tierras en sitios claves, estratégicos e importantes que mantienen especies de aves en peligro de extinción. Las compras de tierra son una alternativa efectiva de conservación, las cuales están ligadas directamente con las comunidades circundantes, lo que hace que haya un matrimonio entre ambas, garantizando una conservación efectiva y duradera entre reserva y comunidad. Esta gran verdad, es la experiencia de la Fundación de Conservación Jocotoco, que en sus diez primeros años ha creado ocho reservas naturales distribuidas en todo el país, en donde se protegen más del 55% del avifauna ecuatoriana, de las cuales 100 especies son endémicas y 45 son consideradas globalmente amenazadas, logrando una conservación efectiva y con un incremento de las poblaciones de cada una de ellas y aves migratorios Neotropicales.

Steiner°, R.

Reforestation, Public Lands Protection and Connectivity in Honduras. Ricardo Steiner, FUPNAPIB, Honduras. fitosteiner-@yahoo.com

Pico Bonito National Park (PBNP) encompasses a diverse range of lowland to montane lifezones, and humid to dry forest ecosystems. The Park is an oasis for Neotropical migratory birds, with 67 species regularly using the park as non-breeding or passage area, of which 13 are Green List priority species. The park is also adjacent to dry forest habitats where the Honduran Emerald, an IUCN CR species occurs. At present, strategic pine and dry forest habitats for migratory species are largely outside of the park. Fundación Parque Nacional Pico Bonito has begun a conservation effort for both the Neotropical migrants and endangered residents through an innovative combination of four strategic activities: 1) protecting habitat already in the national park through improvement of staffing and restoration of bird habitat; 2) establishing a Migratory Bird Corridor connecting the Park to El Polígono, a former Air Force bombing range with 1,235 acres of dry forest habitat essential for the conservation of the Honduran Emerald; 3) improving training of park staff in bird surveys and protected area management; and 4) expanding outreach to communities in the buffer area surrounding the park with a visitor center in the migratory bird corridor. The unique combination of an important site for migratory birds plus endangered residents and innovative efforts to reach out to buffer-zone communities and develop corridors connecting critical areas is significantly advancing avian conservation at PNPB.

La reforestación, la protección de las tierras públicas y la conectividad en Honduras

Parque Nacional Pico Bonito (PBNP) abarca una amplia gama de las tierras bajas a montano lifezones, húmedo y seco a los ecosistemas forestales. El Parque es un oasis para las aves migratorias neotropicales, con 67 especies periódicamente usando el parque como la no aprobación o la zona de cría, de los cuales 13 son Lista Verde de especies prioritarias. El PBNP también es adyacente al bosque seco hábitats en que los Amazilia luciae, una especie críticamente amenazada. En la actualidad, estratégico de pino seco y los hábitats forestales para las especies migratorias que están en gran medida fuera del parque. Fundación Parque Nacional Pico Bonito se ha iniciado un esfuerzo de conservación tanto para las aves migratorias neotropicales y en peligro de residentes a través de una innovadora combinación de cuatro actividades estratégicas: 1) proteger a los hábitats ya en el parque nacional a través de la

mejora de la dotación de personal y la restauración de hábitat de aves; 2) el establecimiento de un Aves Migratorias corredor que conecta el PBNP de El Polígono, la Fuerza Aérea de un ex campo de tiro con 1235 acres de bosque seco hábitat esencial para la conservación del Amazilia luciae; 3) mejorar la formación del personal del parque de aves en las encuestas y de gestión de áreas protegidas, y 4) Ampliar los programas de difusión a las comunidades de la zona de amortiguación que rodean al parque con un centro de visitantes en el corredor de aves migratorias. La combinación única de un sitio importante para las aves migratorias en peligro de extinción además de los residentes y los innovadores esfuerzos por llegar a las comunidades de la zona de amortiguación y corredores de conexión desarrollar áreas críticas es promover en la conservación aviar en PNPB.

Stephens°, J. L.; Alexander, J. D.

Adaptive Management in Action: Three examples from Klamath Bird Observatory and Medford District Bureau of Land Management. Jaime L. Stephens, KBO, Ashland, OR; Alexander, J.D., KBO, Ashland, OR. jlh@KlamathBird.org.

Klamath Bird Observatory integrates research into land management through effective partnerships at local and regional scales. We have developed a number of adaptive management projects with the Medford District Bureau of Land Management. Through the integration of Partners in Flight conservation objectives with current land management challenges, the BLM is implementing bird conservation on the ground. We provide 3 examples at different phases of the adaptive management cycle. We present results that demonstrate the integration of research in defining desired habitat conditions of management prescriptions in oak woodlands and chaparral. A second example details the impact of a collaborative multi-taxa grazing study to inform the management plan for the Cascade-Siskiyou National Monument. Recently, the relationship between our organization and the BLM has yielded a research study to assess the effects of riparian fuels reduction on ecosystem function. This relationship has facilitated adaptive management within existing land management practices and provides a collaborative framework generating research questions to inform the most pressing management decisions.

Stewart°, G. R.; Lee, P.; Wells, J.

The Future of North America's Bird Nursery: Projected Threats to Boreal Birds. Gary Stewart, IBCC, Edmonton, Canada; Lee, P., Global Forest Watch Canada, Edmonton, Canada; Wells, J., BSI, Seattle, WA; Medler, M., BSI, Seattle, WA. gstewart@cruzinternet.com

Home to an estimated 1.6 to 3 billion breeding birds, the Boreal Forest region has rightfully been deemed North America's Bird Nursery. But more than 30% of Canada's Boreal Forest has already been allocated to logging, mining, hydroelectric projects, or oil and gas extraction, and development in the Boreal will continue to increase in the future. To assess potential risks to birds in the Canadian Boreal, we mapped areas that had undergone anthropogenic disturbance and areas that were under some form of protected areas status and overlaid these map layers with the breeding ranges of each of 238 bird species. In 168 (71%) of the species, 10% or more of their Canadian Boreal range was encompassed within areas with anthropogenic disturbance. In only 25 (11%), did 10% or more of their Canadian Boreal range lie within existing protected areas. Of the 168 species in which 10% or more of their Canadian Boreal range was disturbed, only 5 had 10% or more of their range in existing protected areas. For example, our analyses show that more than 30% of the Canadian Boreal ranges of Evening Grosbeak and Connecticut Warbler have been disturbed by industrial activity while both have less than 10% of their ranges within existing protected areas.

Strong°, A. M.; Perlut, N. G.

Grassland Bird Conservation in the Northeastern US: Management Opportunities in a Dynamic Agricultural Landscape. Allan Strong, UV, Burlington, VT; Perlut, N. Vermont Cooperative Fish and Wildlife Research Unit, Burlington, VT. Allan.strong@uvm.edu.

Conversion of forested habitat to agriculture in the Northeastern US has led to the creation of substantial habitat for grassland birds, most of which is in private ownership. Habitat quality, however, varies with management practices. Results from a survey of dairy farmers suggest that they are constrained in their ability to provide high quality habitat by delaying first harvests, as early cuts are required to provide high protein forage. Grassland landowners with no agricultural interests are constrained by lack of mowing equipment and frequently lack information on the relationship between the timing of management and grassland bird ecology. As population declines in grassland birds are associated with both declines in habitat extent (development, succession) and quality (management practices) it is important to include both agricultural and non-agricultural landowners in landscape-level conservation plans. We address these divergent concerns through two initiatives. First, in collaboration with Vermont NRCS biologists, we developed an incentive program through EQIP that allows farmers to harvest their first cut on a routine schedule (prior to 3 June) but delay their second cut until mid-August, providing a sufficiently long window for birds to renest. For target non-agricultural owners, we have developed an outreach program that provides information on the ecology of grassland birds and "bird-friendly" management practices through DVDs, brochures, web-based material, and media coverage.

Conservación de Aves de Pastizal en el Noreste Estadounidense: Oportunidades de Manejo en un Paisaje Agrícola Dinámico.

La conversión de bosques en tierras agrícolas en el noreste estadounidense ha contribuido con la aparición de hábitats importantes para aves de pastizal, los cuales en su mayoría se encuentran en propiedades privadas. La calidad del hábitat, sin embargo, se encuentra ligada a las distintas prácticas de manejo. Resultados de un estudio realizado entre tamberos sugieren que éstos se hallan limitados en su posibilidad de generar buena calidad de hábitat retrasando la primera cosecha, ya que los cortes tempranos son sinónimo de forraje de alto contenido proteico. Dueños de pastizales carentes de interés agrícola se encuentran limitados por la falta de equipamiento de cosecha y frecuentemente por falta de información acerca de la relación entre los tiempos de manejo y la ecología de las aves de pastizal. Dado que la disminución en las poblaciones de aves de pastizal se encuentra asociada tanto a la reducción de la superficie del hábitat (desarrollo, sucesión) como a la calidad del mismo (prácticas de manejo), es importante incluir en los planes de conservación a nivel paisajístico tanto a propietarios de tierra que ejercen la agricultura como a aquellos que no. Estas preocupaciones divergentes fueron abordadas a través de dos iniciativas. Primero, en colaboración con biólogos del Vermont NRCS desarrollamos un programa de incentivo a través del EQIP que permite a los productores recoger sus primeras cosechas dentro de un esquema rutinario (antes del 3 de junio) y postergando la segunda cosecha hasta mediados de agosto, brindando suficiente margen para que las aves vuelvan a nidifi-

car. Apuntando a los propietarios de tierra no agricultores, desarrollamos un programa de divulgación que provee información sobre la ecología de las aves de pastizal y prácticas de manejo "en armonía con las aves" a través de DVDs, folletos, información en Internet y cobertura en medios de comunicación.

Strum*, K.M.; Sandercock, B.K.; Hooper, M. J.; Johnson, K.A.; Lanctot, R.B.; Zaccagnini, M. E.

Nearctic-neotropical Migratory Shorebird Exposure to Cholinesterase-inhibiting Pesticides on the Non-breeding Grounds. Khara M. Strum*, KSU, Manhattan, KS; Sandercock, B.K., KSU, Manhattan, KS; Hooper, M.J., TIEHH, TTU, Lubbock, TX; Johnson, K.A., SIU, Edwardsville, IL; Lanctot, R.B., USFWS, Anchorage, AK; Zaccagnini, M.E., IRB, INTA-CIRN, Argentina. kmstrum@ksu.edu.

Migratory shorebirds traverse long distances during their annual movements and quality stopover habitat is critical to their successful migration. As natural habitats are destroyed and (or) changed, shorebirds may utilize alternative habitats, such as agricultural fields which may increase their risk of pesticide exposure. We evaluated nearctic-neotropical migratory shorebirds' potential exposure to cholinesterase-inhibiting pesticides in turf grass farms in North American and rice fields on the non-breeding grounds in South America during migration. Migratory sandpipers were sampled from reference sites, with no known pesticide use, and pesticide "use" sites, where pesticides are recommended for pest control in each region. We used two methods of evaluating exposure, comparison of mean enzyme activity from reference and use sites and the increase of enzyme activity after reactivation assays. We also analyzed foot washings and feather samples for pesticide residues. We will present ChE activity and residue analysis from shorebirds sampled throughout the western hemisphere, discuss our estimates of exposure, and make recommendations for conservation of nearctic-neotropical migrants.

Sullivan°, B. L.

Exploring Observational Data Using Visualization Tools. Brian L. Sullivan, CLO, Ithaca, NY 14850. bls42@cornell.edu.

Observational data represent the largest and longest time-series biological dataset on earth, and will play an increasingly important role in biodiversity databases and conservation efforts. Observational data are being collected on an on-going basis by scientists as well as bird enthusiasts worldwide, thus representing a vast historic and living data resource on bird distribution, occurrence and relative abundance. Visualization tools allow the discovery and exploration of raw data, revealing simple patterns of occurrence, distribution and relative abundance. Using visualization tools developed by the Avian Knowledge Network (http://www.avianknowledge.net), we show how federated observational datasets can be mined to discover biological patterns relating bird occurrence with anthropogenic factors such as human population density, land-cover, land use, and meteorological phenomena. The results of these explorations will help scientists discover areas for future targeted research efforts, and will allow us to visualize the dynamics of bird populations in the face of new threats such as global climate change.

Explorando Datos Observacionales a Través de Herramientas de Visualización.

Datos observacionales representan la más larga y grande base de datos biológicos de serie de tiempo en el planeta, y van a jugar un rol cada vez más importante en bases de datos de biodiversidad y esfuerzos de conservacion. Los datos observacionales están siendo colectados corrientemente por científicos y observadores de aves aficionados al rededor del mundo, representado así un recurso vasto histórico y viviente sobre la distribución, ocurrencia y abundancia relativa de aves. Herramientas de visualización permiten la exploración de datos no procesados, revelando simples patrones de ocurrencia, distribución y abundancia relativa. Mediante tales herramientas, desarrolladas por la Avian Knowledge Network (http://www.avianknowledge.net), mostramos como datos observacionales federados pueden ser minados para descubrir patrones biológicos que relacionan la ocurrencia de aves con patrones antropogénicos tales como densidad de poblaciones humanas, cobertura de terreno, uso del terreno y fenómenos metereológicos. Los resultados de esas exploraciones ayudarán a científicos a descubrir areas de investigación futuras, y nos permitirán visualizar la dinámica de poblaciones de aves en presencia de nuevas amenazas, tales como cambios climáticos globales.

Sullivan°, B. L.; Geupel, G. R.; Hanni, D.; Ballard, G.; Herzog, M.; Moody, D.

Information sharing via Decision Support Tools and the Avian Knowledge Network. Brian L. Sullivan, CLO, Ithaca, NY; Geupel, G.; Hanni, D.; Ballard, G.t; Herzog, M.k; Moody, D. bls42@cornell.edu

Land-owners, stewardship agencies and conservationists are often confronted with the need to make real-time biological conservation decisions based on the best available science. The need to access the best available scientific data in a timely manner has lead to the development of Decision Support Tools (DSTs). DSTs can be as simple as a pamphlet of suggested ecological management practices or as complicated as analytical tools relating bird occurrence and density to habitat type and structure. Often they are a combination of both. The Avian Knowledge Network (http://www.avianknowledge.net) has improved the capacity for information sharing across local, regional and hemispheric scales by creating a network of AKN Access Nodes, which can be region, data, or protocol specific in scope. DSTs developed at the node level are designed to be open-source and portable, thus they can be shared and adapted across regions. Using the California Avian Data Center and the Rocky Mountain Bird Observatory, we show how a tool designed to serve conservation issues in California has been adapted to provide similar results in the Rocky Mountain region. This improved capacity to share technology is both efficient and effective in delivering on-the-ground conservation results.

Svingen°, D.

Grassland Bird Management on Public Lands in the United States: an example from the Northern Great Plains. Dan Svingen, USFS, Bismarck, ND. dsvingen@fs.fed.us.

The Dakota Prairie Grasslands manages one-third of the National Grassland acreage within the United States. As a "multiple-use" entity, we attempt to balance livestock grazing, public recreation, oil extraction, and wildlife conservation needs. Grassland birds are the primary focus of our conservation program. This program consists of three parts: education and interpretation, habitat management, and applied research. Education and interpretation activities include: newspaper articles, professional papers, and informative booklets, such as annotated bird checklists. Habitat management is focused on diversifying vegetative structure and composition; constraints on that diversifica-

tion will be discussed. Applied research includes: golden eagle, burrowing owl, Sprague's pipit, ferruginous hawk, and grassland bird community projects.

Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman°

Priorities for Outreach as Determined by the Swallow-tailed Kite Conservation Alliance. Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman, ARCI, Gainesville, FL. Zimmerman@arcinst.org.

In October 2007, the Swallow-tailed Kite Conservation Alliance met in Ocean Springs, Mississippi to identify and discuss the highest-priority conservation issues and information needs regarding *Elanoides forficatus forficatus*. Specifically, we identified several objectives among the outreach priorities that could best be achieved through collaboration in the short term by Alliance partners. First, we propose to educate loggers, foresters, and land managers on how to identify the signs of nesting Swallow-tailed Kites so they can take the appropriate measures to insure that nest trees and their surrounding area are protected. This may be accomplished with workshops and field trips and by the production of a DVD that will be widely distributed. The Alliance also wants to capitalize on a citizen-science sightings database by providing additional information to all contributors and by promoting the use of kite-friendly land practices to landowners. In addition, we will create informative articles on kite management and publish them in newsletters of state and federal agencies, timber companies, and relevant non-governmental organizations. The Alliance has begun collaborative planning to address the logistical, financial, and technical challenges associated with these short-term outreach needs.

Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman°

Swallow-tailed Kite Conservation Alliance – A Partnership to Advance Conservation of a Vulnerable Species. Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman, ARCI, Gainesville, FL Zimmerman@arcinst.org.

The Swallow-tailed Kite Conservation Alliance began informally in 1998 in response to a growing concern regarding populations of Swallow-tailed Kite (Elanoides forficatus forficatus) that breed in the U.S. Conservation partners from across the U.S. breeding range participate in the Alliance, which includes state and federal wildlife agencies, non-profit organizations, academia, and the timber industry. The Alliance is dedicated to protecting the U.S. population of Swallow-tailed Kites throughout their annual cycle. Operating within and alongside existing conservation partnerships, the Alliance works to prioritize, initiate, and coordinate actions that improve scientific understanding, promote habitat and landscape sustainability, implement management actions, and foster public awareness and social responsibility in support of kite conservation. Based on current population estimates, and continued, if not growing, threats on the breeding grounds and elsewhere, federal listing of this species under the Endangered Species Act may be warranted. However, the Alliance believes that a listing petition is not appropriate at this time because of a need for more robust population and trend estimates, and because of encouraging partnerships with corporate and non-industrial private landowners who voluntarily support kite conservation. Most recently, the Alliance identified several near-term objectives to guide the conservation of Swallow-tailed Kites through 2008 and 2009 (see other posters).

Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman°

Priorities for Research and Monitoring as Determined by the Swallow-tailed Kite Conservation Alliance. Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman, Avian Research and Conservation Institute, Gainesville, FL. Zimmerman@-arcinst.org.

In October 2007, the Swallow-tailed Kite Conservation Alliance met in Ocean Springs, Mississippi to identify and discuss the highest-priority conservation issues and information needs regarding *Elanoides forficatus forficatus*. Specifically, we identified several objectives among the research and monitoring priorities that could best be achieved in the short term through collaboration by Alliance partners. Foremost, the Alliance identified a need for a robust, range-wide population estimate for the subspecies. The Alliance has proposed to estimate the post-breeding population by conducting synchronized counts during late summer at pre-migration roosts. Linked to the need for a population estimate is a need to identify more comprehensively local breeding populations and roost sites throughout the kite's U.S. range. Survey methodologies currently used need to be standardized to obtain indices of abundance and distribution and, ultimately to detect population trends. With respect to survey data, there is a need for a centralized on-line database where researchers and citizen scientists alike can archive Swallow-tailed Kite breeding, distribution, and abundance data. A key element in the success of such a database in encouraging public input and participation will be to ensure quick responses to local contributors of data. The Alliance has begun collaborative planning to address the logistical, financial, and technical challenges associated with these short-term research and monitoring needs.

Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman°

Priorities for Management as Determined by the Swallow-tailed Kite Conservation Alliance. Swallow-tailed Kite Conservation Alliance c/o Gina Zimmerman, ARCI, Gainesville, FL. Zimmerman@arcinst.org.

In October 2007, the Swallow-tailed Kite Conservation Alliance met in Ocean Springs, Mississippi to identify and discuss the highest-priority conservation issues and information needs regarding *Elanoides forficatus forficatus*. We focused on specific objectives among the management priorities that could best be achieved in the short term through collaboration by Alliance partners. First, the Alliance would like to establish a target population size for each watershed within the Swallow-tailed Kite's range, which involves a review of previous delineations of key watersheds and their respective targets. Within each target area, there should be a well-planned effort to increase the proportion of nesting territories on public conservation lands, considering that the majority of kites seem to be nesting on private and industrial timber lands. The Alliance identified the need for a GIS database that would include known nest and roost sites, protected lands, and all citizen-science sightings. In support of increased cooperation and communication with landowners, a document highlighting the habitat management practices that best support Swallow-tailed Kites will be developed for distribution to owners, managers, and loggers. The Alliance also will review each state's wildlife action plan to assess the Swallow-tailed Kite's present status and elevate it where appropriate. The Alliance has begun collaborative planning to address the logisti-

cal, financial, and technical challenges associated with these short-term management needs.

Tautin°, J.; Cousens, B.; Kostka, K.; Kostka, S.; Airola, D.

Addressing Regional Declines in Purple Martin Populations. John Tautin, Purple Martin Conservation Association, Erie, PA; Cousens, B., British Columbia Purple Martin Stewardship & Recovery Program, Canada; Kostka, K., Purple Martin Preservation Alliance, Export, PA; Kotska, S., Western Purple Martin Working Group, Arlington, WA ; and. Airola, D. Airola Environmental Consulting, Sacramento, CA jtautin@purplemartin.org

The Purple Martin (*Progne subis*) is one of the best known and most popular migratory birds in North American. Breeding Bird Survey results indicate that the range-wide breeding population of Purple Martins has been stable over the last 40 years, a testament to the dedication of thousands of Purple Martin "landlords" who provide housing for nesting martins. Regionally, however, some martin populations are in decline, most notably in the Great Lakes states and provinces, New England and the Maritime Provinces (where some states and provinces are close to losing martins entirely), and in California. We document these declines, we report on successful efforts to restore previously declining martin populations in the Pacific Northwest, we report on a unique effort to increase martins in southwestern Pennsylvania, and we suggest additional, regional efforts to conserve Purple Martin populations.

Taylor*, A.; Stouffer, P. C.; Chamberlain, M. J.

Effects of Site Preparation on Breeding Birds in Early Successional LA Pine Plantations *Antoinette Taylor, LSU, Baton Rouge, LA; Stouffer, P. C., LSU, Baton Rouge, LA.; Chamberlain, M. J., LSU, Baton Rouge, LA. Atayl36@lsu.edu.

Changes to harvesting and planting protocols in pine plantations could have beneficial conservation implications for breeding early-successional birds, while also increasing efficiency of harvest and timber production. Leaving logging debris scattered in rows (rowed) keeps more ground level refugia for birds, and is easier than piling it. Wider row spacing reduces the need for thinning, but may decrease available vegetation. We examined the effects of row spacing and debris distribution on breeding birds in the first two years after planting. We sampled birds using point counts in six sites around Louisiana, each with two levels of row spacing and two levels of debris treatment. Birds were assigned a breeding score based on level of nesting activity. We found no treatment effects on abundance, breeding scores or species richness. Species richness averaged 30 species per treatment. Indigo Bunting and Blue Grosbeak were the most commonly detected species on all treatments. Species of special concern were most often detected on rowed plots, regardless of tree spacing, and included Bachman's Sparrow, Prairie Warbler and Northern Bobwhite.

Taylor°, G.

Climate Change and How the Hill is Addressing it through Legislation, Gary Taylor, Association of Fish and Wildlife Agencies, Washington DC. gtaylor@fishwildlife.org.

Several bills have been introduced in Congress to address climate change by reducing the emissions of greenhouse gases. Almost every bill recommends a cap and trade approach. In this approach, limits on overall emissions are capped and a fixed pool of allowances or permits is released to match the overall targets. Regulated emitters must obtain allowances to cover their carbon emissions. The remainder must be purchased through an emissions market. Emitters who come in below their permitted level can sell excess allowances to other emitters. The cap and trade system has been used successfully to reduce mercury and other air pollutants in the United States and abroad.

Most climate change bills allocate a large portion of these funds to energy efficiency research and deployment. However, most of the bills also include some funding to address the impacts of climate change on fish and wildlife and their habitats. Most proposals have been in the range of $500 million - $2 billion and recommend allocating the money through current programs such as the North American Wetlands Conservation Act, State Wildlife Grants Program, the Neotropical Migratory Bird Conservation Act, etc., with guidance that the fund are to be used to remediate impacts from climate change to fish and wildlife and their habitats. It is uncertain whether this Congress can conclude a comprehensive climate change bill that this Administration will sign.

Cambio Climático y como el Congreso de los Estados Unidos lo está abordando a través de la legislación.

Se han introducido al Congreso varias iniciativas de ley para abordar el cambio climático a través de la reducción de las emisiones de gases de invernadero. Casi todas las iniciativas recomiendan una aproximación de "tope y comercio". En este enfoque, los límites en emisiones totales tienen un tope y se genera solamente un número limitado de niveles permitidos o permisos para hacerlos compatibles con los objetivos totales. Los emisores regulados deben obtener permisos para cubrir sus emisiones de carbono. El resto es comprado a través de un mercado de emisiones. Los emisores que queden por debajo de sus niveles de emisiones permitidos pueden vender el exceso a otros emisores. El sistema de "tope y comercio" se ha usado exitosamente para reducir el mercurio y otros contaminantes del aire en los Estados Unidos y otros países.

La mayoría de las iniciativas sobre cambio climático destinan una gran cantidad de recursos financieros a la investigación e implementación de la eficiencia de la energía. Sin embargo, la mayoría de las iniciativas también incluyen algunos fondos para abordar los impactos del cambio climático en la pesca y fauna silvestres y sus hábitats. La mayoría de las propuestas han estado en el rango de $500 a $2000 millones de dólares y recomiendan colocar el dinero a través de programas activos como el North American Wetlands Conservation Act, el State Wildlife Grants Program, y el Neotropical Migratory Bird Conservation Act, entre otros, con la recomendación de que los fondos se usen para remediar los impactos del cambio climático en la vida silvestre y sus hábitats. Es todavía incierto si el Congreso pueda concluir una iniciativa completa de cambio climático que la presente Administración vaya a firmar.

Tenez°, D.

Observation of Nocturnal Hunting Activity by Peregrine Falcon in Guatemala City. Tenez, D. PIFMESO-Guatemala, Ciudad de Guatemala, Guatemala. lacandonguatemala-@yahoo.com.

The Peregrine Falcon occurs in Guatemala in smaller proportions relative to other migratory raptors. It can be found in many habitats and elevations, even in the reproductive season. In North America, it nests on cliffs, but also is adapted to big cities, and nests in taller buildings and bridges. I observed an individual Peregrine Falcon 23 times during its winter stay at Guatemala City (1500masl, 14°38'29", 90°30'47); during Febru-

ary, March, October, November, and December of 2006; and January and February of 2007.

Most of the time it was perched on a relief structure on the IPM building in the Historical Center. It arrived between 17:40 and 18:05 to spend the night. Hunting activity was evidenced by Rock Pigeon remains on this structure and on the sidewalk. Many times I watched it at night trying to hunt, but it was unsuccessful. On December 8th 2006, from 18:05h this Peregrine Falcon began to fly above Cathedral Square, frightening Pigeons that spend the night in the Cathedrals façade (about 280 birds). At 19:05, it hunted a pigeon and carried it to the IPM building, located 150m. The relief structure was perfect to put the prey. Hunting of pigeons in cathedrals also has been reported in South of Mexico. Peregrine Falcons have been observed hunting migratory birds during the night off the Empire State Building in New York as well.

Observación de Actividad de Cacería Nocturna del Halcón Peregrino (*Falco peregrinus*) en la Ciudad de Guatemala.

El halcón peregrino ocurre en Guatemala en proporciones menores respecto a otras rapaces migratorias, se le puede encontrar en diversos hábitats y elevaciones, e incluso se ha observado durante la época reproductiva. En Norte América suele anidar en acantilados, pero también está adaptado a las grandes ciudades, anidando en edificios altos y puentes. Realicé un total de 23 detecciones de un individuo de halcón peregrino durante su estadía invernal en la ciudad de Guatemala (1500msnm, 14°38'29", 90°30'47); en los meses de febrero, marzo, octubre, noviembre y diciembre de 2006; enero y febrero de 2007.

La mayoría de las veces estaba perchando en una estructura en relieve del edificio IPM del Centro Histórico. Llegaba a pernoctar entre las 17:40 y 18:05h. La actividad de cacería se evidenció por restos de paloma doméstica (*Columba livia*) en dicha estructura y en la acera del edificio; en varias ocasiones lo observé realizando intentos de cacería sin éxito durante la noche. El 8 de diciembre de 2006 desde las 18:05h empezó a volar sobre una plaza espantando a las palomas que pernoctan en la fachada de la Catedral Metropolitana (280 aprox.). A las 19:05 logró cazar una paloma y la llevó al edifico IPM localizado a unos 150m. La estructura en relieve era ideal para colocar la presa. La cacería de palomas en catedrales también ha sido reportada en el sur de México. Mientras que en el edificio Empire State de Nueva York se ha registrado al halcón peregrino cazando aves migratorias durante la noche.

Thatcher°, B. S.; Buehler, D. A.

Effects of Thinning to Increase Stand Structural Complexity on Priority Songbirds in Upland Oak-hickory Forests. Benjamin S. Thatcher; Buehler, D.A., Department of Forestry, Wildlife and Fisheries, UT, Knoxville. ben_thatcher@fws.gov.

Silvicultural management to increase forest structural complexity is a proposed method for improving songbird habitat quality in second-growth forests. We used a large-scale manipulative experiment to evaluate the initial (1-4 years post-harvest) effects of alternative thinning treatments (i.e., crown-release and gap creation) on avian populations in upland oak-hickory forests at the Tennessee National Wildlife Refuge. Thinning reduced average basal area from 28.5 to 20.3 m^2/ha and average canopy closure from 89 to 65% in the treated units. Partners in Flight priority species exhibited variable density responses to the treatment: seven species increased, two had inconclusive or negligible responses, and two species declined. We monitored 1,149 nests of 28 species. By functional group, mature-forest birds exhibited nest daily survival rates, realized brood sizes, and parasitism rates that were comparable between thinned and control plots. Overstory-nesting species exhibited nest daily survival rates that were greater in thinned than control plots. Midstory-nesting species experienced greater parasitism rates in thinned than control plots. In the short term, thinning appears to provide suitable breeding habitat for priority bird species that prefer dense understory vegetation or partially-opened overstories for nesting. Conversely, thinning had negative effects on some species that nest in midstory vegetation, indicating there may be an ecological cost, in the short-term, associated with implementing this treatment.

Thogmartin°, W.

Conservation Opportunities Assessment for Rare Birds in the Upper Midwestern United States. Wayne E. Thogmartin, USGS, La Crosse, WI. wthogmartin@usgs.gov.

Conservation design is comprised of five facets. These five elements are landscape characterization and assessment, population response modeling, conservation opportunities assessment, optimal landscape design, and monitoring and evaluation. Here, I focus on how I have used population response models to identify the conservation estate for a collection of rare birds occurring in the Prairie Hardwood Transition Bird Conservation Region. The rare birds I focused on included Bobolink (*Dolichonyx oryzivorus*), Savannah Sparrow (*Passerculus sandwichensis*), Grasshopper Sparrow (*Ammodramus savannarum*), Henslow's Sparrow (*A. henslowii*), Eastern Meadowlark (*Sturnella magna*), Sedge Wren (*Cistothorus platensis*), Upland Sandpiper (*Bartramia longicauda*), American Woodcock (*Scolopax minor*), Black-billed Cuckoo (*Coccyzus erythropthalmus*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Golden-winged Warbler (*Vermivora chrysoptera*), Cerulean Warbler (*Dendroica cerulea*), and Wood Thrush (*Hylocichla mustelina*). I mapped predicted abundances resulting from hierarchical spatial count models. These mapped results were then assessed relative to the conservation estate to ascertain which areas of peak abundance were outside of direct management by governmental authorities. Grassland species occurred largely outside of any direct governmental land management authority. This was true as well for forest species, but less so because of the prominence of federal, state, and county forests in the region. I identify peaks of predicted abundance outside of direct governmental management which could be targeted for added protection either through land acquisition or directed private lands programs.

Thompson, III°, F. R.

Bridging the Gap between Habitat-modeling Research and Bird Conservation and Land Management Planning. Frank R. Thompson, III. USFS Northern Research Station, Columbia, Missouri, USA. frthompson@fs.fed.us

Recent advances in modeling and estimation methods have great potential to improve bird conservation. Model based methods for estimation can produce less biased and more precise estimates of abundance and vital rates as well as demonstrate the effects of important environmental and habitat factors. Spatially explicit landscape simulation models can be used to forecast landscape change and dynamically liked to habitat suitability or population models. The widespread adoption of these approaches may be hindered because they require additional development or new data and skills compared to earlier approaches. For example, recording time of detection or distance to detections in bird monitoring can allow estimation of absolute abundance or density and reduce potential bias resulting from unknown detection probabilities in habitat modeling. Spatially

explicit information on habitat composition and structure is required to map habitat suitability, to simulate habitat and landscape change, and to dynamically link landscape or habitat change models to avian population models. This spatial data will likely come from existing and new remote-sensing products or from spatial modeling of existing stand or point-based inventories. The implementation of these methods and adoption into conservation planning can be facilitated by increased efforts in technology transfer; partnerships among scientists, planners, and managers on specific projects; and the development of spatial data that can be shared among many users.

Thompson°, C.

Acres for Antpittas: Wisconsin's Growing International Bird Conservation Program. Craig Thompson, WDNR, La Crosse, WI: Craig.Thompson@wisconsin.gov.

The Wisconsin Bird Conservation Initiative (WBCI) is a statewide alliance of 160+ organizations dedicated to conserving Wisconsin's rich birdlife. Recognizing more than half of Wisconsin's 237 species of breeding birds depend on tropical habitats for survival, in 2005 WBCI established an International Committee to advance conservation of migrant birds on their wintering grounds in Latin America. Built upon the twin pillars of education and conservation action, WBCI International collaborates with partners that have the organizational capacity to realize effective, long-term conservation of bird habitat in Central and South America. Since the program does not have a budget, innovation is necessary to generate needed funds. For the past two years, WBCI International has sponsored conservation birding trips – "birdathons" - to Ecuador. Designed to involve birders in conservation by providing opportunities to visit sites they help protect, the birdathon model has been effective for engendering new, grassroots support for conservation of tropical habitats. These events have raised thousands of private sector dollars to protect hundreds of acres of important bird habitat in Ecuador. In addition, new partnerships have been established between WBCI, international conservation organizations (American Bird Conservancy, World Land Trust –US), Ecuadorian NGO's (The Jocotoco Foundation, The Mindo Cloudforest Foundation) and the bird tourism industry (Tropical Birding, Inc.), setting the stage for future conservation action.

Thompson°, J. A.

Birds and Agriculture in the Northern Tallgrass Prairie Eco-Region: Can We Have Our Cake and Eat It Too? James A. (Tony) Thompson, Windom, MN. salix@rconnect.com.

Our global human footprint continues to grow, both in population and in per capita consumption, and compete with non-human ecological function. The energy sources which have been taken for granted by many for centuries are being exhausted or shown to be ecologically untenable. There is a global turn toward biofuels and wind in energy policy and a corresponding boom in land use conversion to energy production. The agricultural community is challenged to meet the consumption demands for food, fiber, livestock feed and now energy and bioindustrial feedstocks of this growing human population while at the same time protecting ecological functions upon which agriculture itself critically depends. Thus, challenging ecological issues are being further compounded. Here, I will describe one family's efforts to resolve complex land use demands while at the same time provide for the needs of the migrating phalaropes or breeding blue-winged teal.

Thompson°, S. G.; Bednarz, J. C.

Decline of the Bewick's Wren (*Thryomanes bewickii*) in Arkansas. Sarah Grace Thompson, ASU, Jonesboro, Arkansas; Bednarz J., ASU, Jonesboro, Arkansas. sarah.thompson-@smail.astate.edu

Throughout the world, many songbird species have been exhibiting marked declines over the last century. One such example is the eastern United States subpopulation of Bewick's Wrens (*Thryomanes bewickii bewickii*). I analyzed Breeding Bird Survey (BBS) results and Christmas Bird Count (CBC) data to examine the population change of this species in Arkansas. BBS data indicated that Bewick's Wrens have been steadily declining in Arkansas since 1966 (when the BBS began). From 1966 to 1979, there was a 9.0% decrease in Bewick's Wren detections, and from 1980 to 2006 there was a decrease of 7.6%. However, the Bewick's Wren's decline has been documented previous to 1966 elsewhere in the eastern United States. Thus, possibly the population may have declined more dramatically prior to 1966. CBC data from Arkansas seemed to support this hypothesis and showed a dramatic decrease in Bewick's Wren detections from 1940 (1.22 detections/party hour) to 1953 (0.02 detections/party hour). Afterwards, a steady but slow decline is evident. Analysis of BBS, CBC, and observation records by birders all demonstrate consistently that there was a dramatic decline of Bewick's Wrens in Arkansas. These patterns indicate that the population status of Bewick's Wrens is critical in Arkansas and warrants immediate conservation action. I suggest implementing a systematic field assessment of the status of this subspecies as well as investigating possible causes of their decline.

Disminución del cucarachero de Bewick (*Thryomanes bewickii*) en Arkansas

Alrededor del mundo, muchas especies de aves canoras han disminuido durante el último siglo. Ejemplo de esto es la subpoblación del cucarachero de Bewick (*Thryomanes bewickii bewickii*) en el oriente de Estados Unidos. Analicé los datos del Breeding Bird Survey (BBS) y los Conteos Navideños para examinar el cambio poblacional de esta especie en Arkansas. Datos de BBS indicaron que esta especie ha disminuido de manera constante en Arkansas desde 1966 (cuando el BBS inició). Desde 1966 hasta 1979, las detecciones del cucarachero de Bewick disminuyeron un 9.0%, y desde 1980 hasta el 2006 un 7.6%. Sin embargo, la disminución del cucarachero de Bewick se ha documentado desde antes de 1966 en otros lugares del oriente de Estados Unidos. Posiblemente la población ha disminuido más dramáticamente desde antes de 1966. Datos del Conteo Navideño de Arkansas parecen soportar esta hipótesis y mostraron una dramática disminución del cucarachero de Bewick desde 1940 (1.22 detecciones /hora) hasta 1953 (0.02 detecciones/hora). Es evidente una constante pero lenta disminución. Análisis del BBS, Conteos Navideños y registros de observadores de aves coinciden en demostrar la dramática disminución del cucarachero de Bewick en Arkansas. Estos patrones indican que el estado poblacional del cucarachero de Bewick's es crítico en Arkansas y requiere acciones de conservación inmediatas. Sugiero implementar una evaluación sistemática del estatus de esta subespecie así como investigar posibles causas de esta disminución.

Tirpak°, J.M.; Jones-Farrand, D.T.; Fitzgerald, J.A.; Thompson, III, F.R.; Twedt, D.J.; Uihlein, III, W. B.

Bird Habitat Conservation through Science, Technology, and Partnerships. John M. Tirpak, Lower Mississippi Valley Joint Venture, Vicksburg, MS; Jones-Farrand, D.T., UM, Columbia, MO; Fitzgerald, J.A., Central Hardwood Joint Venture, Brentwood, MO; Thompson, III, F.R., USFS, Columbia, MO; Twedt, D.J., USGS – PWRC, Vicksburg, MS; Uihlein, III, W.B., LMVJV, Vicksburg, MS. John_Tirpak@fws.gov.

Landbird planning in forested biomes is constrained by the inability to assess site-scale forest structure attributes across large areas. Recent research within the Central Hardwoods and West Gulf Coastal Plain BCRs integrated FIA and NLCD data to overcome this limitation. Application of habitat suitability index models allowed determination of habitat quality, limiting factors, and population size for 40 priority landbirds at the subsection scale within these regions. These geospatial products can be used to identify management options targeting habitat variables with the greatest potential impact on population size and to predict population response to habitat changes at the subsection scale. The Central Hardwoods and Lower Mississippi Valley Joint Venture partnerships play a pivotal role in transferring this technology from researchers to the conservation community. Through hands-on workshops and subsection-level strategic plans, these JV partnerships will in turn engage the broader landholding constituency impacting land use. Key to success is the ability of Joint Venture staff to create user-friendly tools and provide technical assistance to partners incorporating these data into their organizational operations. Partners must ensure their conservation strategies inform policy makers and the general public to promote favorable attitudes towards landbird conservation.

Trollinger°, J. B.; Harding, S.; Verner, L.

Birding Trails as Land Conservation Tools for the Future. Jeffrey B. Trollinger, VA Department of Game and Inland Fisheries, Richmond, VA; Harding, S.; Verner, L. Jeff.trollinger@dgif.virginia.gov

As people become more involved in outdoor and wildlife watching activities, the greater their interest becomes in conserving these natural resources. In recent years there has been a huge increase in participation in wildlife and other soft adventure activities. Two national surveys conducted in 2006 reported that over 81 million Americans took part in birdwatching (*2006 National Survey on Recreation and the Environment*) and spent over $268 M on wildlife watching trip-related expenses (*2006 USFWS National Survey on Fish, Hunting and Wildlife-Associated Recreation.*) This gives wildlife and the associated habitat a monetary value and provides an incentive to local communities to conserve these resources. The Virginia Birding and Wildlife Trail (VBWT) is a statewide effort to develop wildlife viewing opportunities and encourage local communities to utilize their natural resources to bring tourism dollars into the local economy, while also providing motivation to conserve the land and habitat that attracts these dollars. The Trail further provides an excellent tool to educate visitors to the trail of the importance of conserving land and habitat for the species they enjoy watching. Previous trails have demonstrated that once communities realize the economic potential of nature-based tourism, they become invested in open space preservation, managing for parkland and more wildlife-friendly development. This presentation will provide examples of how nature-based tourism initiatives, such as the VBWT, bring communities together to promote their natural resources and conserve land that is available for wildlife viewing.

Tweti°, M.

Here, There and Everywhere. Mira Tweti, Playa del Rey, CA. MiraTweti@ParrotPress.org.

Here, There and Everywhere (published in January 2008, www.parrotpress.org) is the 1st parrot-welfare children's book meant as a tool to educate children to issues of trapping, deforestation, smuggling, and keeping captive birds. Dr. Jane Goodall called it a "masterpiece" and recommends it for all libraries, schools and homes. The poster will demonstrate how this book is a tool to effect change on the issues raised in my talk.

Tweti°, M.

Parrot Smuggling across the US/Mexican Border and Related Issues. Mira Tweti, Playa del Rey, CA. MiraTweti@ParrotPress.org.

Next to habitat destruction illegal trade in wildlife is the greatest threat to parrots and other bird species worldwide. In the United States, it is second only to drug trafficking in revenue and proliferation and worldwide, third after drugs and illegal arms. Revenues are estimated at upwards of $10 billion a year. Mexican parrots are free for the taking from their nests in areas such as Chiapas and Vera Cruz, making them highly profitable regardless of the number of birds lost in the process. Many parrots are sneaked into the US across the Mexican border. One U.S. official said, "pound for pound, parrots were worth more than cocaine on the open market."

Evidence shows that CITES, may have done more damage than good to parrot populations uplisting them to Appendix I only when their populations are imperiled. CITES has in effect sanctioned the illegal trade, enabled an unsustainable trade. It is likely that the illegal international trade in parrots could end tomorrow if CITES uplisted all parrots to Appendix I needed action because it has been apparent for a long time that parrots cannot be traded sustainably in a global market.

This talk will address those issues, and that numbers today of parrot smuggled across the Mexican/US border is rising to those seen pre-WBCA. It will also look at issues with USDA policies regarding confiscated parrots, kept in small isolets, sometimes for years, at their border quarantine station. Making the birds twice victimized: by smugglers and their US rescuers.

La magnitud continua del comercio ilegal de psitácidos en Indonesia es perpetuada por una combinación de falta de prevención y orgullo en los campesinos respecto a su flora endémica y a la falta de entrenamiento e instalaciones disponibles para que los oficiales del gobierno manejen los loros confiscados. Como para corroborar lo último, un Centro de Rehabilitación de Aves fue construido en la Isla de Seram, en el centro de las "Molucas", Indonesia, en la selva adyacente y fuera del Parque Nacional de Manusela. Seram es el único hábitat remanente de la Cacatúa Crestada-salmón, *Cacatua moluccensis*, y del Lory de Nuca-púrpura, *Lorius domicella*. En consecuencia, virtualmente todos los psitácidos confiscados en la provincia central de Maluku, o en su puerto en la isla de Ambon, han sido llevados al Centro, donde ellos han sido rehabilitados con la ayuda de tramperos de aves retirados. Bajo condiciones muy especiales, algunas de estas aves han retornado a la selva siguiendo un "aligerado protocolo" de reintroducción. Con una disposición ahora disponible sobre las aves confiscadas, los oficiales locales llevan a cabo operaciones contra el contra-

bando. En adición, como parte de un programa integrado, El Proyecto de Loros de Indonesia conduce tours ecológicos a la Isla de Seram (el personal incluye tramperos de aves retirados). Además, nosotros hemos iniciado un Programa de Conservación-Prevención-Orgullo para inducir un "cambio de paradigma", de manera que los niños piensen sobre el mal efecto que resulta del trampeo de aves. Aunque solo pequeñas cantidades de son confiscadas los loros están siendo soltados. El principal valor de tal programa puede despertar en la gente local un interés duradero por la prevención y la conservación.

Valdez-Gómez°, H. E.; Holroyd, G. L.; Trefry, H. E.; Contreras-Balderas, A. J.

Do Burrowing Owl (Athene cunicularia) and Short-eared Owl (Asio flammeus) Share Prey during Winter in West Central Mexico? Héctor E. Valdez-Gómez, Universidad Autónoma de Nuevo León. Ciudad Universitaria CP, Mexico; Holroyd, G.L., Canadian Wildlife Service, Canada; Trefry, H.E., Canadian Wildlife Service, Canada; Contreras-Balderas, A.J., Universidad Autónoma de Nuevo León. Ciudad Universitaria CP, Mexico. arcontre@fcb.uanl.mx

Burrowing owl (BUOW) and Short-eared owl (SEOW) are widely distributed within grasslands, during winter in Mexico. Information about their winter ecology is limited particularly in areas where both species are present. Determining the diet is an important component to understand nocturnal raptor's habitat requirements. We analyzed 315 regurgitated pellets of burrowing owl collected over two winters (2001-2002 and 2002-2003), and 354 pellets of short-eared owl collected from December to March 2002-2003 in the Military Airbase of Zapopan, Jalisco. The owls share three main prey categories. Invertebrates constitute the bulk of the BUOW diet followed by small mammals, reptiles, and birds as secondary prey. SEOW in contrast consumes a low frequency of invertebrates but and wide variety of birds. Small mammals are the highest proportion of biomass consumed. The dietary overlap is present in items of relative low mass such as northern pigmy mouse. Food-niche breath was slightly lower in SEOW than in BUOW reflecting the diversity of invertebrates present in the area and in the diet. The diversity and frequency of invertebrates consumed is higher during early winter decreasing proportionally with lower temperatures. On the other hand, the proportion of small mammals increases at the end of the winter. This change in diet could be a response of the owls visiting Zapopan over the winter to changes in prey availability, reflecting their diet preferences.

Vega°, X.; Hernández, C.; Chu, J.; Miro, R.

Migration, Science and Mystery: Through Television Media an International Shorebird Conservation Program Along the Pacific Flyway Corridor. Xico Vega, PS, Mexico; Hernández, C., PS, Mexico; Chu, J., USFS, OR; Miro, R., AP, Panama. xicovega@manomet.org.

The Copper River International Migratory Bird Initiative (CRIMBI) and its partners have been promoting shorebird conservation along the Pacific Flyway Corridor using shared species. Mayors in three counties (Panama, México, United States) signed an agreement to protect Western Sandpipers (*Calidris mauri*), share environmental educational material, and promote ecotourism at Hemispheric WHSRN sites. One of the most important accomplishments was the implementation of a series of TV programs, webcams and chat programs from Panama to the Northern Slope of Alaska including Santa María Bay, Sinaloa, México; San Francisco Bay, California; Peuget Bay, Vancouver, Canada; Sistikine and Cordova, Alaska. These conservation activities confirmed the importance of partnerships to promote and increase bird awareness; maximize economic resources; and how to use birds as a vehicle to educate schoolchildren. The sites in Panama Bay, Santa María Bay and Cordova implemented live TV programs involving local schools and the signals were transmitted by Internet. Audiences of more than 800,000 people were estimated among nine countries.

La Iniciativa Internacional para la Conservación de las Aves Migratorias del Río Copper (CRIMBI) y sus socios promueven la conservación de aves playeras a lo largo del corredor migratorio del Pacifíco con especies compartidas. Resultando en la firma de convenios entre alcaldes de tres países y el intercambio de material educativo. Una de las actividades educativas más importantes logradas fue la elaboración de diferentes programas de televisión en vivo, webcam y chats interactivas. El playerito occidental ha sido utilizado para vincular estos sitios de la RHRAP en categoría Hemisférica por medio de un programa educativo que se realizó desde Panamá hasta la ladera Norte en Alaska, incluyendo Bahía de Santa María, Sinaloa, México, Bahía de San Francisco, California, Bahía de Pugeut, Canada, Sistikine y Cordova, Alaska. Estas acciones de conservación demuestran la importancia de la cooperación para la gestión de más recursos económicos y el cómo utilizar a las aves como un vínculo para promover la conservación, turismo y educación. Panamá, Sinaloa, y Cordova realizaron programas de televisión en vivo con niños de escuelas locales y la señal fue transmitida por Internet. Se estimó una audiencia superior a los 800,000 niños de nueve países.

Vega°, X.; Mejia, U.; Berlanga, H.

El Palmito, Sinaloa, México: An Example of Bird Conservation through Local Participation. Xico Vega, Pronatura Sinaloa, Mexico; Mejia, U., PS, Mexico; Berlanga, H. CONABIO, MX. xicovega@manomet.org.

In late 2005 the Private Land Conservation Program of Pronatura Noroeste A.C. signed a 30 year conservation easement agreement with the Ejido El Palmito to protect more than 5,500 hectares of Pine-Oak ecosystem. The main purpose was to protect the most important site to observe the charismatic, endemic and federally protected Tufted Jay (*Cyanocorax dickey*), one of the priority birds for birdwatchers to observe in México. More than 250 other bird species are also observable in this popular site. The Ejido was about to log the "Rancho La Liebre" with an approved permit. Pronatura and its partners purchased the logging rights in order to safeguard the area. Potential alternative economic activities were studied to provide income to local inhabitants. Ecotourism resulted as a high priority option. Seven cabins were built. Today, this action has proven successful with a positive economic impact for the community. Additional economic resources were allocated to prevent forest fires, training workshops for handcraft activities, bird observation and identification, environmental education, and school Bird Festival. Tourism activities have been increasing substantially with the construction of birding trails and a web page. As a result of this success the Ejido agreed to additionally protect more than 2,000 hectares as a bird sanctuary at the Federal Level.

A finales de 2005 el Programa de Conservación de Tierras Privadas de Pronatura Noroeste A.C. con el apoyo de CONABIO y NABCI México y aliados locales firmaron un contrato para establecer una servidumbre de conservación por un período de 30 años en 5,500 hectáreas con el Ejido El Palmito, Concordia, Sinaloa. El propósito de este convenio fue el proteger hábitat de

la chara pinta sinaloense (*Cyanocorax dickeyi*), una ave endémica, carismática y bajo protección Federal en México. Los ejidatarios contaban con un permiso de tala poniendo en riesgo el "Rancho la Liebre", uno de los sitios para la observación de más de 250 especies de aves y en particular la chara pinta. Se gestionó el pago total del valor estimado de la madera en pie para garantizar la protección de este hábitat. Posteriormente un grupo de socios y el ejido gestionaron apoyos para construir siete cabañas para promover el ecoturismo. Actualmente esta actividad tiene un impacto económico positivo como alternativa al aprovechamiento forestal. Se han gestionado otros proyectos incluyendo brigadas contra incendio, cursos de capacitación para la observación de aves, carpintería, manualidades, educación ambiental, talleres y festivales escolares de aves. El turismo se incrementó sustancialmente con la construcción de senderos interpretativos y de una página web. Actualmente esta en proceso la creación de un santuario de aves a nivel Federal.

VerCauteren°, T.; Gallagher, S.

Working with Private Producers for Grassland Bird Conservation. Tammy VerCauteren, RMBO, Fort Collins, CO; Gallagher, S., RMBO Fort Collins, CO. tammy.vercauteren-@rmbo.org.

Economic hardship, urban sprawl, drought, weed invasion, and an aging generation are affecting the long-term viability of private lands throughout the Great Plains. Private producers are also challenged with increased production costs and trying to sustain a viable operation. In addition, more than 80% of the Great Plains is in private ownership and most grassland bird populations have been declining since the Breeding Bird Survey was initiated in 1966. Rocky Mountain Bird Observatory's Prairie Partners program is working to keep lands healthy for grassland birds through education, outreach, and partnerships. Landowners are being informed of grassland bird population trends, habitat needs, and opportunities for partnerships. Many of these landowners are partnering with private, state, and federal partners to enhance habitat for wildlife, which in turn positively affects their bottom line, increases wildlife recreation opportunities, and helps keep land management in the hands of the locals. Through common sense approaches to wildlife conservation on private land we are working to enhance habitat, nearly 80,000 acres in 5-states, increasing wildlife viewing opportunities, and creating win-win solutions for bird conservation and production. We have reached nearly 3,000 private producers and resource professionals through more than 60 workshops and had personal conversations and ranch visits with more than 500 producers. Prairie Partners has been successful because landowners are actively recruited and engaged in solutions for grassland bird conservation. We are building consensus for conservation in the Great Plains; with a team effort opportunities and achievements are limitless.

Vermillion°, W. G.; Ortego, J. B.

Shorebird, Waterbird and Landbird Prioritization for Conservation Action in the Gulf Coast Joint Venture Region. Bill Vermillion, GCJV, Lafayette, LA; Ortego, J.B., TPWD, Victoria, TX. williamvermillion@fws.gov.

In 2004, the Gulf Coast Joint Venture (GCJV) Management Board formally resolved to move towards development and implementation of population and habitat objectives for priority species of non-waterfowl birds in the GCJV region. The GCJV Management Board directed the GCJV office to develop lists of 6-8 priority landbird, waterbird, and shorebird species, respectively, for conservation planning. The GCJV organizational structure ture provides for a Monitoring, Evaluation, and Research Team, consisting of four Working Groups: Waterfowl, Landbirds, Shorebirds, and Waterbirds. Working Groups consist of biologists and researchers from GCJV partner agencies and organizations, and from regional academia. The Working Groups use the best available scientific information to formulate conservation targets for individual GCJV Initiative Areas. This presentation will provide details on the GCJV Landbird, Waterbird, and Shorebird Working Groups' species prioritization process, and related conservation planning that has resulted from that prioritization process.

En 2004, el consejo de administración de empresa a riesgo compartido de la costa del golfo (GCJV) resolvió formalmente moverse hacia el desarrollo y la puesta en práctica de los objetivos de la población y del habitat para las especies de la prioridad de los pájaros de las no-aves acua'ticas en la región de GCJV. El consejo de administración de GCJV ordenó la oficina de GCJV para desarrollar listas del landbird de la prioridad 6-8, del waterbird, y de las especies del shorebird, respectivamente, para el planeamiento de la conservación. La estructura de organización de GCJV preve una supervisión, una evaluación, y un equipo de investigación, consistiendo en cuatro grupos de funcionamiento: Aves acuáticas, Landbirds, Shorebirds, y Waterbirds. Los grupos de funcionamiento consisten en biólogos e investigadores de las agencias y de las organizaciones del socio de GCJV, y de la academia regional. Los grupos de funcionamiento utilizan la mejor información científica disponible para formular las blancos de la conservación para las áreas individuales de la iniciativa de GCJV. Esta presentación proporcionará los detalles en el GCJV Landbird, Waterbird, y proceso del prioritization de la especie de los grupos de funcionamiento de Shorebird, y el planeamiento relacionado de la conservación que ha resultado de ese proceso del prioritization.

Vermillion°, W.; King, S. L.; Krementz, D. G.;

Habitat Suitability Models for King Rails on the Gulf Coast. Bill Vermillion, Gulf Coast Joint Venture, Lafayette, LA; King, S.L., USGS, Baton Rouge, LA; Krementz, D.G., USGS, Fayetteville, AR. williamvermillion@fws.gov.

Declines in King Rail populations across North America have spurred a wave of research, monitoring, and conservation planning for this species. Efforts are currently underway to develop habitat models for the species in various parts of its range, including the Gulf Coast of southwest Louisiana and southeast Texas. Little information exists on local and landscape factors affecting King Rail distributions in coastal marshes. An improved understanding of multi-scale habitat characteristics of King Rails in Louisiana and Texas marshes would facilitate predicting the effects of coastal wetland loss and degradation on King Rail populations, inform marsh restoration efforts to benefit secretive marsh birds, and assist with habitat conservation prioritization. This presentation will outline the proposed development of a Gulf Coast King Rail habitat model, and possible ways in which the model could be used for conservation planning.

El descenso de King Rail poblaciones en toda América del Norte han estimulado una ola de la investigación, el seguimiento y la planificación de la conservación de esta especie. Los esfuerzos están actualmente en curso para desarrollar modelos de hábitat para la especie en varias partes de su rango, incluido el suroeste de la Costa del Golfo de Luisiana y el sureste de Texas. Existe poca información sobre el paisaje local y los factores que afectan a King Rail distribuciones en las marismas costeras. Mejorar la comprensión de la escala múltiple carac-

terísticas del hábitat del Rey Rails en Louisiana y Texas pantanos facilitaría la predicción de los efectos de la pérdida de zonas húmedas costeras y la degradación de las poblaciones King Rail, informar a los esfuerzos de restauración de marismas en beneficio de las aves de marismas secreto, y ayudar en la conservación de los hábitats de prioridades. Esta presentación se esbozarán el desarrollo de un proyecto de la Costa del Golfo de King Rail modelo de hábitat, y las posibles formas en que el modelo podría utilizarse para la planificación de la conservación.

Vidal°, R. M.

Lessons Learned from 15 years of Community-based Conservation Projects in Mexico. Rosa Maria Vidal, Pronatura Chiapas, Mexico. rosavidal@pronatura-chiapas.org

IBAs and other priority areas for conservation occur in a human matrix of needs, expectations and interest. In Mexico, 80% of the forested areas are social property (owned by communities) and a number of areas of high biodiversity are located in indigenous regions. One of the major issues that conservation have faced is the conciliation of human needs and nature conservation. Pronatura Chiapas has developed approaches towards the achievement of this goal.

Some of the lessons show that: Land tenure is the major determinant of the feasibility of conservation. 2) The value of nature for communities includes at least the following a) social security b) income c) subsistence d) political status. Most of the communities understand the basic ecological relations 3) Power balance on natural resources control within the community. 4) Natural resource management has to have specific economical benefits. 5) Communities empowerment is a key process. 6) Political and economical pressures from outside, such as development policies affect community decisions and might have greater impacts on nature than the internal local decisions.

Projects that consider the above have more possibilities for success in the long term.. Projects that relate economical needs and natural resources such as shade grown coffee, sustainable forestry, community based tourism . This projects include training practical skills, literacy, access to credits and markets, social organization, conflicts resolution and environmental awareness. I present examples of such projects in IBAs in southern Mexico and observations of the consequences of avoiding social and political issues while working in community based conservation.

Vilella°, F. J.

History of Sugarcane Cultivation in Puerto Rico: Opportunities for Wetland Restoration and Waterbird Conservation. Francisco J. Vilella, USGS, Mississippi State, MS. fvilella@cfr.msstate.edu.

Cultivation of sugarcane (*Saccharum spp.*) was one of the earliest colonial agricultural ventures in the New World. Sugarcane came to the Americas in 1493 when it was brought to the island of Hispaniola. As a result of centuries of sugarcane cultivation, coastal wetlands in Puerto Rico and other Caribbean islands were greatly reduced in area and quality. Since 1996 we have been implementing wetland management practices in abandoned sugarcane fields at the Humacao Nature Reserve (HNR). We evaluated the effects of disking and hydrological manipulations on birds in moist-soil impoundments at HNR. We collected monthly data on vegetation, invertebrate, water depth, and salinity, and conducted weekly bird surveys. Avian species richness increased from 16 mostly upland species in 1996, to 67 wetland species by 2002. Among the waterbird species colonizing the impoundments were species of conservation concern such as Bahama Pintail (*Anas bahamensis*) and West Indian Whistling Duck (*Dendrocygna arborea*) and rare species such as the Yellow-breasted Crake (*Porzana flaviventer*). Water depths of 10-20 cm and salinity below 15 ppt will avoid impacting plants and invertebrates. Vegetative cover did not affect bird abundance, but it decreased bird species diversity and richness. Our results suggest construction of impoundments was responsible for most bird species detected. Manipulative wetland management practices in abandoned sugarcane areas represents an alternative to improve waterbird habitat in Puerto Rico.

Historia del Cultivo de la Caña de Azúcar en Puerto Rico: Oportunidades para Restauración de Humedales y Conservación de Aves Acuáticas.

El cultivo de caña de azúcar (*Saccharum spp.*) fue una de las primeras empresas agrícolas en la América tropical. La caña de azúcar llegó al Nuevo Mundo en 1493 durante el segundo viaje de Colón a la isla de La Española. Los humedales costeros de Puerto Rico fueron severamente degradados como resultado de siglos de cultivo de caña de azúcar. Desde el 1996 hemos trabajado en la Reserva Natural de Humacao (RNH) para implementar prescripciones de manejo para humedales en áreas de antiguos cañaverales. Evaluamos los efectos del arado y manipulaciones hidrológicas en módulos construidos en la RNH. Recolectamos informacion mensual sobre vegetación, invertebrados, profundidad del agua, y salinidad; además de censos semanales de aves. La riqueza de especies de aves aumentó de 16 especies de ambientes mayormente terrestres en 1996, a 67 especies de aves de humedal para el 2002. Entre las especies de aves acuáticas que utilizaron los módulos estaban el Pato Quijada Colorada (*Anas bahamensis*), la Yaguaza (*Dendrocygna arborea*), y especies raras como el Gallito Amarillo (*Porzana flaviventer*). El mantener la profundidad del agua en 10-20 cm. y la salinidad por debajo de 15ppm evita el impacto a las plantas e invertebrados. La cobertura vegetal no afectó la abundancia de aves, pero sí la diversidad y riqueza de especies. Nuestro resultados sugieren que los módulos fueron responsable por la mayor parte de las especies de aves acuáticas detectadas. El manejo manipulativo en áreas de cañaverales abandonados representa una alternativa viable para mejorar las condiciones de hábitat en humedales costeros de Puerto Rico.

Villa-Bonilla°, B.; Rojas-Soto O. R.; Colodner-Chamudis A. G; Tejeda-Cruz, C.

Avifauna of Zacapoaxtla County, Puebla, Mexico. Bernardino Villa-Bonilla, Escuela de Biología, ITSZ, Puebla.; Rojas-Soto, O.R., Instituto de Ecologia A.C, Xalapa; Colodner-Chamudis, A.G. ITSZ, Zacapoaxtla, Puebla. bernardino.villa@-yahoo.com.mx

We present a compilation and update for the avifauna of Zacapoaxtla County, Puebla, Mexico, focusing on richness distributional patterns by vegetation type and land use, seasonality, endemism and forms under some risk category. We found 194 species which represent 37% of the species registered for Puebla. Using mathematical estimators, we calculate that the total number of species recorded represents 93% of the expected richness. Seasonality patterns showed that 74% of the species are resident, 18.5% winter residents, 3.6% transient, 2% summer residents and 1.5% accidentals. We also found, 10 Mexican endemics and five Mexican quasi-endemics, this represents 15% of the endemics known to occur in Mexico. Two species are considered endangered, five threatened and seven under special protection. Habitat use patterns showed that cloud forest contained the highest numbers of species, endemism, threatened species and exclusive species; followed by pine forest, pine-oak

forest, temporal agriculture and cultivated grasslands. Based on this information we identified 14 priority conservation areas.

Avifauna de Zacapoaxtla, Estado de Puebla, México

En este trabajo se describe y analiza la distribución de la riqueza avifaunistica del Municipio de Zacapoaxtla, Puebla. Para ello se llevó a cabo un análisis por tipo de vegetación y uso de suelo así como a un nivel municipal. La riqueza específica, el endemismo, el número de especies bajo alguna categoría de riesgo, así como las especies exclusivas, fueron mayores en el bosque mesófilo de montaña, seguido por el bosque de pino, bosque de pino-encino, agricultura de temporal y pastizal cultivado. Con relación a la estacionalidad, el 74% son residentes, 18.5% migratorias de invierno, 3.6% transitorias, 2% migratorias de verano y 1.5% accidentales. Se registraron 10 especies endémicas y 5 cuasiendémicas a México, presentando el 15% de la avifauna endémica de México. Además, 14 especies están bajo alguna categoría de riesgo: 2 en peligro de extinción, 5 amenazadas y 7 bajo protección especial. Cabe resaltar que 11 especies resultaron sobresalientes ya sea por que amplían su distribución geográfica o su categoría estacional conocidas. Con base en los resultados, se proponen un total de 14 áreas como prioritarias para su conservación.

Villar, C.; Vega°, X.; Paul D.

Marismas Nacionales: Linking Communities for Bird Conservation. Carlos Villar, SEMARNAT Nayarit, MX; Vega, X., Pronatura Sinaloa, Culiacán, MX; Paul, D. IMJV, UTA. xicovega@manomet.org

Marismas Nacionales (MN) is one of the most important areas for bird species in Northwest México. The area encompasses more than 113,000 hectares and has the most extensive mangrove forest in the Mexican Pacific coast. Its various ecosystems provide refuge to more than 450 bird species, including migratory, endemic and resident species. Since 1998 an international coordinated effort has been undertaken to link Great Salt Lake, UT and Chaplin Lake, Canada and Marismas Nacionales. Each area is a WHSRN site and shares some species in common. These conservation efforts facilitated a tri-national conservation strategy with positive outcomes. Some of the activities include: School teacher and students workshops, cultural exchanges, environmental education, habitat restoration, shared species at their bird festivals, scientific research and technical cooperation. This work and the importance of MN for birds provided the foundation for including the area as one of NABCI pilot programs and additionally, the conformation of the Regional Alliance for Bird Conservation at MN. The Regional Alliance is a group of organizations, government agencies, institutions and individuals working for the protection of birds and their habitats. Thus, the international Project "Linking Communities" is an example of international cooperation sustaining different conservation activities at Marismas Nacionales.

Marismas Nacionales: Vinculando Comunidades para la Conservación de las Aves

Marismas Nacionales (MN) es uno de los sitios más importantes para aves en el Noroeste de México. Con una superficie mayor a 113,000 hectáreas y la zona más extensa de manglar en la costa del Pacifico Mexicano. Sus diversos ecosistemas proveen refugio a más de 450 especies de aves, incluyendo migratorias, endémicas y residentes. Desde 1998 se ha realizado un esfuerzo coordinado internacional para vincular MN, México, el Gran Lago Salado, Utah, y el Lago Chaplin, Canadá. Estos esfuerzos de conservación han permitido establecer diversos proyectos en estos tres países. Estos proyectos han servido como puente para establecer una visión común sobre las necesidades de conservación a una escala internacional. Algunas de las actividades desarrolladas en el marco del proyecto han sido la capacitación a maestros y estudiantes, intercambio cultural, educación ambiental, restauración de hábitat, hermandad de festivales de aves, investigación científica y cooperación técnica. Este trabajo y la importancia de MN para las aves es la base para su inclusión como sitio piloto de los proyectos de trinacionales de NABCI. Por otra parte, se trabajó en la consolidación de la Alianza Regional para la conservación de las aves en MN, resultando en una mejor coordinación entre los actores de la conservación locales. El proyecto "vinculando comunidades" es un ejemplo de colaboración internacional que ha sustentado diversas acciones de conservación en MN.

Villegas Patracaº, R.; Perez, C. E.; Martinez, J. E.

Wind Farm Fatalities for Raptors and other Diurnal Soaring Birds During Migration Season in Mexico. Rafael Villegas Patraca; Veracruz, México; Perez; C.E.; Martinez, J.E. rafael.villegas@inecol.edu.mx

Power lines, communication towers, and wind farms are human infrastructures responsible for frequent incidents of mortality in many species of wildlife. There exist some estimates on the impact of such man-made structures, mostly done in northern localities where aggregations of soaring migrants occur (waterfowl, wading birds, vultures, and raptors). The nature of migration in Middle America, where birds aggregate along corridors where thermal convection enhances their opportunities for energy-saving flights, multiplies the impact of threats to soaring migrants. We present estimates of the relative impact of wind farms to populations of soaring birds during the migration season in Mexico. These estimates are based on analyses of existing literature and original information collected in southern Mexico. We make some projections on future scenarios and present a case study on near-future plans to develop large-scale wind farms along a critical migration route for raptors. We will close with recommendations to help mitigate the impacts of human infrastructure on birds based on results from wind farm and power line monitoring projects currently working in the Isthmus de Tehuantepec and in southern México, respectively.

Vukovich°, M. A.; Kilgo, J. C.

Effects of Radio Transmitters on the Behavior of Red-headed Woodpeckers. Mark Vukovich, USFS Southern Research Station, New Ellenton, SC.; Kilgo, J.C., USFS SRS, New Ellenton, SC. mvukovich@fs.fed.us.

Telemetry studies enable researchers to gain ecological information on wildlife that would otherwise be too difficult or impractical to collect. Such information may be critical in development of conservation practices. However, attaching a radio transmitter to an active animal like a bird may sometimes have adverse impacts. Knowledge of such impacts is essential and must be weighed against the potential benefits of transmitter use. Our objective was to determine the possible effects of radio transmitters on the behavior of Red-headed Woodpeckers (*Melanerpes erythrocephalus*). During May–August 2006-2007, we captured Red-headed Woodpeckers and attached 1.9-g transmitters via backpack harness. We observed woodpeckers to quantify time budgets as the percentage of time birds spent engaged in each of five behavioral categories: flight, foraging, perching, preening, and territory defense. We compared the behaviors of radio-instrumented (n = 28) to non-radio-instrumented (n = 23) woodpeckers. We detected no difference

(χ^2 = 3.29; df = 4; p = 0.508) between radioed and non-radioed woodpeckers in the percentage of time engaged in the five behaviors. We conclude that 1.9-g transmitters with backpack harnesses did not impact the behavior of Red-headed Woodpeckers.

Walker°, W. W.

Windfarms and Bird Populations of The Lower Gulf Coast of Texas: An Industry Perspective. Wayne W. Walker, Round Top, TX. waynew@earthlink.net

Wind Energy is currently the fastest growing renewable energy type in the United States, and the second most popular of all new generation installations nationally. Texas is leading the nation in new wind installations with approximately 5000 MW of installed capacity at the end of 2007. Bolstered by strong legislative and regulatory support, massive investment from the financial sector during the last two years and public embracement of wind energy as an environmental and cost effective part of addressing the challenges of climate change and the desire to reduce dependence on foreign fossil fuel supplies, wind energy development is projected to accelerate dramatically in the near future. Transmission constraints in West Texas, combined with an interest in diversifying the geographic, distribution of wind energy facilities, have lead to wind energy plans to develop facilities in new regions of Texas. Some landowners have expressed concern about new installations in these new areas because of the lack of information currently available on wind energy's impact on wildlife and habitat, despite its environmental and economic benefits to Texas rate payers. During a time when the United States clearly requires clean, renewable energy but also conservation and restoration of large natural ecosystems to preserve our quality of life, how can wind and wildlife co-exist? This paper will attempt to answer this question by providing suggestions for the development of wind energy in a responsible manner.

Wang*, X.; Sivek, D.

Birdwatchers are Becoming an Increasingly Important Force for Bird Conservation and Education in Mainland China. *Ximin Wang, UWSP, Stevens Point, WI; Sivek, D., UWSP, Stevens Point, WI. wximin@gmail.com.

Traditionally, most Chinese people see birds as food, pets, agricultural pests, or potential medicine. Besides the bird conservation and education work led by researchers and government, a new perspective has emerged. Birding as a hobby was introduced into mainland China in the 1990's, and the increasing number of birdwatchers are adding momentum to the conservation movement. More than 14 local bird watching societies have been formed in China in the last couple of years.

These societies have carried out many activities to promote the awareness of bird conservation among the public, including public bird-watching events, bird festivals, bird surveys, and environmental education. The birdwatchers have added new species to the Chinese bird list and have had many rare bird species photographed for the first time. Starting in 2001, they have published their first bird conservation education magazine and since 2003 ornithologists also have begun to publish annual Chinese bird reports with the numerous sight records from birdwatchers.

Understanding that birds know no borders, Chinese birdwatchers are working in close cooperation with people all over the world for the future of birds in the wild, including BirdLife International, World Wildlife Fund, International Crane Foundation, Australasian Wader Studies Group, and others. Although the number of birdwatchers is still small in mainland China, they are already making a difference.

Wells°, J. V.; Carlson, M.; Medler, M.

New Ways of Assessing the Bird Conservation Values of Ecosystems: The Boreal In Global Context. Jeff Wells, BSI, Seattle, WA; Carlson, M., CBI, Ottawa, ON; Medler, M., BSI, Seattle, WA. jeffwells@borealbirds.org

Prioritizing ecosystems for conservation based only on measures like species richness, endemism, rarity, and endangerment can mean, in a worst-case scenario, that highly valuable, important, and irreplaceable conservation values are not recognized, protected or managed. We apply some new ways of assessing conservation value to North America's Boreal Forest region, which covers 1.5 billion acres and contains the world's largest intact original forest. This region supports the most abundant bird populations in North America, including the majority of the global populations of more than 70 bird species, as well as the world's largest remaining populations of wolf and caribou. Ecosystem services provided by the Boreal Forest region, such as climate regulation, nutrient cycling, and water supply, are estimated at $90 billion annually. The peatland and forest ecosystems of the Canadian Boreal store an estimated 186 billion tons of carbon, serving as an important shield against additional global warming. The Boreal's vast unfragmented landscapes, meanwhile, will likely be important dispersal corridors for plants and animals whose ranges will shift northward from current global warming. A broad accounting of conservation values of ecoregions is vital if policy makers and managers are to implement conservation plans and actions that maintain a full complement of current biodiversity across the landscape as well as healthy ecosystems that support sustainable human communities.

Welton°, M. J.; Anderson, D. L.; Colorado, G. J.; Beachy, T. A.

Migration Stopover Habitat for the Cerulean Warbler in Northern Central America. Melinda Welton, GCBO, Franklin, TN; Anderson, D.L., LSU, Baton Rouge, LA; Colorado, G.J., El Grupo Ceruleo, Medellin, Colombia; Beachy, T.A., UT, Knoxville, TN. weltonmj@earthlink.net.

The Cerulean Warbler (*Dendroica cerulea*) is a species of high conservation concern because of a long-term population decline. Information on natural history during the non-breeding season has been identified as a high priority research need. Our results, based on four years of fieldwork, confirm that Cerulean Warblers stop over in low mountains on the Caribbean coast of northern Central America on their journey between the wintering grounds in northern South America and breeding grounds in North America. However, in contrast to previous observations of Ceruleans between 600 and 750 m in Belize, we found Cerulean Warblers from 100 to over 1,000 m with a majority of sightings below 500 m. One interesting finding was a higher observation frequency in Guatemala and Belize than Honduras. In 2007 we developed and field-tested a model to predict potential stopover habitat in northern Central America using Cerulean Warbler location data collected from 2004 to 2006. From 1 April to 22 April, five teams of foreign and local biologists ground-truthed the accuracy of this model from Chiapas, Mexico, to Honduras. Our results generally validated the model, and we hope to further refine the model for use as a tool in predicting Cerulean Warbler occurrence in the region and directing research efforts at key stopover sites.

Hábitat de Paso Migratorio para el Chipe Cerúleo en el Norte de Centro América.

El Chipe Cerúleo (*Dendroica cerulea*) es una especie de alta preocupación en la conservación debido a su disminución poblacional a largo plazo. Se ha identificado que la información sobre su historia natural durante la temporada no-reproductiva es una necesidad de alta prioridad de investigación. Nuestros resultados, basados en cuatro años de trabajo de campo, confirman que los Chipes Cerúleos se detienen en las montañas bajas de la costa del Caribe del Norte de Centro América en su viaje entre los cuarteles de invierno en el Norte de Sur América y sus cuarteles de reproducción en Norte América. Sin embargo, en contraste con observaciones previas de Cerúleas entre 600 y 750 m en Belice, nosotros encontramos Chipes Cerúleos desde los 100 m hasta por encima de los 1,000 m, con la mayoría de observaciones por debajo de los 500 m. Un hallazgo interesante fue una mayor frecuencia de observación en Guatemala y Belice que en Honduras. En 2007 desarrollamos y verificamos en campo un modelo para predecir los hábitats de paso potenciales en el Norte de Centro América usando información sobre localidades del Chipe Cerúleo recopilada desde 2004 hasta 2006. Desde el 1 de Abril hasta el 22 de Abril, cinco equipos de biólogos extranjeros y locales comprobaron en campo la precisión de este modelo desde Chiapas, México, hasta Honduras. Nuestros resultados en general validaron el modelo, y esperamos refinarlo más aun para usarlo como una herramienta en la predicción de la ocurrencia del Chipe Cerúleo en la región y dirigir los esfuerzos de investigación en sitios de paso clave.

Westra, J. V.; Huner°, J. V.; Caffey, R. H.

Ecological and Economic Benefits and Costs of Louisiana's Working Wetlands. John V. Westra, La. State Univ., Baton Rouge, LA; Huner, J.V., Univ. La. Lafayette, Lafayette, LA; Caffey, R.H., State Univ., Baton Rouge, LA. jvh0660@-louisiana.edu.

Over 500,000 acres of land in rice and crawfish production in Louisiana provide nesting, wintering, and breeding habitat for 100 species of waterbirds. These working wetlands have become critical waterbird habitat compensating for loss of 1,000,000 acres of adjacent coastal wetlands. Land planted to rice has decreased due to falling rice prices and increasing production costs. These, along with recent salt-water damage from hurricanes caused a 35% reduction in land planted to rice. Despite problems associated with competing imported Chinese crawfish products, crawfish acreage has been stable. The long-run economic situation facing Louisiana's rice that sustains the nested crawfish industry is bleak. Without additional financial assistance, 35% of these agricultural wetlands (165,000 acres) and associated waterbird habitat may be lost. The level of financial support available under current conservation programs of the Farm Bill is $100-$200 per acre. The estimated economic costs for providing environmental benefits from these working wetlands are $200-$300 per acre. Estimated values of the environmental services associated with these working wetlands are $300-$400 per acre. If producers receive conservation payments offsetting expenses for maintaining seasonal agricultural wetlands, such a program may stem this potential habitat loss, and the societal economic benefits from such a program.

Wethington°, S.

Developing a Conservation Program for the Family of Hummingbirds. Susan Wethington, HMN, Patagonia, AZ. swething@dakotacom.net

After the last PIF meeting at Asilomar, the Hummingbird Monitoring Network (HMN) began and now maintains over 30 monitoring sites. It is a science-based, project-driven, nonprofit organization dedicated to the conservation of hummingbird diversity and abundance throughout the Americas. Our hummingbird field studies' sites are chosen using factors such as latitude, longitude, elevation, vegetation types and disturbance gradients. These sites are evaluated based upon hummingbird diversity and abundance patterns, levels of breeding activity, and migration stopover use. In this presentation I will present results from evaluations of our work in Canada and the U.S. that have lead us to ask the following questions: Do hummingbird diversity and abundance patterns from HMN's monitoring data in the Madrean Archipelago region reflect large-scale biogeographic patterns? How inter-dependent is hummingbird nest success with raptor nest attempts? Are Rufous Hummingbird populations declining and where are the threats? In pursuit of these questions, the Network has built collaborations with people from Ecuador, Canada, Mexico, and the U.S. This grassroots organization now has the opportunity to ask questions at landscape levels but also has the challenge to become a sustainable multi-national conservation organization whose work improves hummingbirds' ability to survive, reproduce successfully, and maintain viable populations throughout the Americas.

White*, H. M.; Bissonette, J. A.; Howe, F. P

Developing Riparian Bird Habitat Association Models and Management Guidelines. Hillary M. White*, UDWR/USU, Logan, UT; Bissonette, J.A, USGS, Logan, UT; Howe, F.P., UDWR, Logan, UT. hillarywhite@utah.gov

Approximately 75% of Utah's bird species use riparian habitats at some time during their life cycles and at least 80% of this habitat in Utah has been lost or altered since settlement. Riparian areas now comprise less than 1% of Utah's land cover. In 1992, the Utah Division of Wildlife Resources began a statewide bird monitoring program in this most critical habitat. Products include monitoring bird species density trends and community composition in riparian habitats throughout the state. Many projects goals directly address focal species identified as Utah Partners in Flight priority species in the Utah Avian Conservation Strategy plan as well as priority habitat and avian species listed in the Utah Comprehensive Wildlife Conservation Strategy. Recent results from population trend analyses suggest that the patterns of annual variation and regional synchrony seen in riparian-dependent species groupings, density, and other parameters may be driven by landscape-scale effects on habitat. To better understand these large scale effects, riparian-bird habitat association models are being developed using 16 years of statewide bird and vegetation data. Our model results will form the basis for the development of management guidelines that will inform riparian restoration and conservation in Utah.

Whitfield°, M. J.; Schuetz, J. G.

Willow Flycatcher (*Empidonax traillii*) Wintering Habitat in Mexico, Central America and Ecuador. Mary J. Whitfield, SSRS, Weldon, CA; Schuetz, J.G., SSRS, Weldon, CA. whitfield@lifesci.ucsb.edu

During the past eight years, we have investigated the distribution of wintering Willow Flycatchers in Mexico, Guatemala, El Salvador, Costa Rica, Panama and Ecuador. The initial purpose of our study was to identify the habitat types that wintering Willow Flycatchers use in much of their winter range. Over the past few years, we have added new objectives and have spent more time capturing and banding the wintering birds. One of

these new objectives included looking for previously banded birds when returning to areas that had been visited the previous year.

We found that the habitat characteristics for Mexico and the four Central American countries were very similar (see Lynn et al. 2003 Studies in Avian Biology 26:41-51). The Willow Flycatchers tended to use wet, shrubby second growth areas with the following three main habitat components: standing or slow moving water and/or saturated soils, woody vegetation (shrubs and/or trees), and open areas. Most of the areas where we found willow flycatchers showed signs of moderate to heavy human impacts. In contrast, most willow flycatcher areas that we found in Ecuador showed very few signs of human impacts. Almost all of the sites in Ecuador were in primary successional habitat on river islands or along the edges of the Rio Napo. These sites were typically dominated by caña (*Gynerium sagittatum*) and a tree-like species of *Tessaria*. Many of these sites lacked a shrub component. In some of these sites, we also found wintering Alder Flycatchers (*Empidonax alnorum*) using the same habitat patches as the Willow Flycatchers.

El Hábitat del Mosquero Saucero (*Empidonax traillii*) Invernale en México, América Central y Ecuador.

Durante los ultimos ocho años, hemos investigado la distribución del mosquero saucero in México, Guatemala, El Salvador, Costa Rica, Panamá, y Ecuador. El propósito inicial de nuestro estudio era identificar los tipos de hábitat que usan los mosqueros en el invierno. En los ultimos anos, hemos sumado objectivos nuevos, y hemos pasado mas tiempo capturando aves ya cintados cuando regresamos a sitios que visitemos en anos anteriores.

Hemos descubrido las caracteristicas del hábitat para el mosquero en México y los cuatro paises en América Central eran muy similares (mira Lynn et al. 2003 Studies in Avian Biology 26:41-51). El mosquero saucero solía usar áreas mojados y lleno de arubustos de desarollo secundario que tenian estas tres características primarias: agua inmóvil o de velocidad mínima y/o con tierra saturada, vegetación de leña (arbustos o árboles), y areas de campo abierto. El mayor parte de los sitios donde encontramos mosqueros sauceros tenían evidencia de uso de gente cuantioso. Al contrario, la mayoría de sitios en Ecuador eran de hábitat primaria en islas o junto a las orillas del Rio Napo. Estos sitios eran tipicamente dominados por caña (*Gynerium sagittatum*) y un especie de *Tessaria*. Muchos de estos sitios faltaban arbustos. In algunos de los sitios, también encontramos mosqueros aileros (*Empidonax alnorum*) que eran allí para el invierno, usando el mismo hábitat que los mosqueros sauceros.

Wikle, C. K.; Schooley, R. L.; Bussmann, S. F.; Pitts°, D. R.

A Hierarchical Bayesian Model for Stochastic Metapopulation Viability in the Presence of Translocation. C.K., Wikle, UMC; Schooley, R.L.,UIU; Bussmann, S.F., UMC; Pitts, D.R., USACE, Donald.Pitts@ERDC.usace.-army.mil

We created a method for estimating and predicting population growth and parameters in the presence of translocations, the artificial movement of wild organisms between populations of the same species. We accomplish this by adapting a model from the ecology literature and placing it in a hierarchical Bayesian framework. Additionally, we fit the models for each population individually, then linked them via conditioning the individual growth parameters of each population on a common mean. Here, we use simulated population data and also data from the red-cockaded woodpecker (*Picoides borealis*) collected over ten years from three populations. The model is useful in predicting the impact of the impact of translocations on the donor population, and the success and growth of the translocated populations.

Hemos creado un método para estimar y predecir la población y los parámetros de crecimiento en presencia de translocaciones, el movimiento artificial de organismos silvestres entre poblaciones de la misma especie. Esto fue logado adaptando un modelo de la literatura ecológica y colocándolo en un marco de jerarquía Bayesiana. Además, adaptamos los modelos para cada población por separado, luego estos fueron vinculados a ella a través del acondicionamiento individual de cada uno de los parámetros de crecimiento sobre una población media. También, hemos utilizado datos de población simulados, y también datos del pájaro carpintero (*Picoides boreales*) recolectados por más de diez años de tres poblaciones. Este modelo es útil para predecir el impacto de las transferencias en la población de donantes, y el éxito y crecimiento de las poblaciones trasladadas.

Will, T.; Paulios°, A.

Making the International Connection: Full Life-Cycle Stewardship for Birds. Tom Will, USFWS, Ft. Snelling, MN; Paulios, A., WBCI, Madison, WI. tom_will@fws.gov.

Partners in Flight originated in 1990 largely as a response to Breeding Bird Survey alarm calls of significant population declines of "Neotropical migrants." Avian ecologists immediately acknowledged the complex annual life cycles of long-distance migrants, but there was an initial tendency among North Americans to blame declines primarily on land use changes in Latin America. Fortunately, conservationists responded quickly with a paradigm of responsible stewardship at home, and PIF led the way in the development of regional plans for targeted breeding season action. For the next decade, work on migrant birds was focused in our own backyards. Continued species declines—coupled with new scientific tools—have generated studies evaluating our assumptions about Nearctic-Neotropical migrants. The belief that deteriorating conditions on the wintering grounds may be driving declines, at least in some cases, has re-emerged. Nonetheless, the prevailing paradigm, especially among state and federal agencies, is to think of "our" birds as breeding season creatures and to frame stewardship responsibility only in terms of action within our jurisdictional boundaries. The purpose of this session is to grapple with the question of how best to respond to population declines of Nearctic-Neotropical migrants with the most effective conservation action. We begin with a conceptual overview of population limitation of long-distance migrants. Next we examine new state initiatives to build partnerships for conservation of birds in the non-breeding season. We explore new models for working with international partners and for developing collaborative partnerships across state and international boundaries and between small local groups in North and Mesoamerica. We examine some of the creative research and outreach that some of our South American partners are currently using. Finally, we engage our collective intelligence to develop specific strategies to move forward with committed action and to advance a reinvigorated paradigm of cooperative full life-cycle stewardship for birds and healthy people.

Haciendo la Conexión Internacional: Conservación del Ciclo Completo de la Vida de las Aves

Compañeros en Vuelo originado en 1990 en gran parte como una respuesta a los llamados de alarma del *Breeding Bird Survey* por la significativa declinación de las poblaciones de las aves migratorias neotropicales. Ecologistas de aves inmediatamente reconocieron que los ciclos de vida anuales de las especies migratorias son de por si complejos, pero existía una ten-

dencia inicial entre Norte Americanos de culpar la disminución principalmente a los cambios de uso de la tierra en Latinoamérica. Por suerte, los conservacionistas respondieron rápidamente con un paradigma de administración responsable en casa, y PIF lideró el camino en el desarrollo de proyectos regionales para acciones focalizadas durante la temporada reproductiva. Para la siguiente década, el trabajo sobre aves migratorias fue enfocado en nuestros jardines traseros. Continuada la declinación de las especies - junto con nuevos instrumentos científicos – se han desarrollado estudios que evalúan nuestros supuestos sobre especies migratorias neárticas neotropicales. La creencia que las condiciones que deterioran las áreas no-reproductivas pueden conducir a la disminución, al menos en algunos casos, ha resurgido. Sin embargo, el prevalente paradigma, sobre todo entre agencias estatales y federales, es pensar en "nuestros" pájaros como criaturas de la temporada reproductiva y enmarcar la responsabilidad de administración sólo en términos de acción dentro de nuestras fronteras jurisdiccionales. El objetivo de esta sesión es lidiar cuerpo a cuerpo con la pregunta de como responder mejor a la disminución de las poblaciones de especies migratorias neárticas neotropicales con las acciones de conservación más eficaces. Nosotros comenzaremos con una revisión conceptual de factores limitantes de poblaciones de las aves migratorias de larga distancia. Después examinamos nuevas iniciativas estatales de construir alianzas para la conservación de aves en la temporada no reproductiva. Exploraremos nuevos modelos para trabajar con socios internacionales y para el desarrollo de alianzas de cooperación a través de los estados y las fronteras internacionales y entre pequeños grupos locales en Norte y Mesoamérica. Examinaremos algunas de las investigaciones y mecanismos de sensibilización que algunos de nuestros socios Suramericanos están actualmente usando. Finalmente, utilizaremos nuestra inteligencia colectiva para desarrollar un estrategia específica para ir mas allá con acciones de compromiso y avanzar en el renovado paradigma cooperativo para una administración del ciclo de vida completo de las aves y gente saludable.

Will°, T.; Thogmartin, W.; Roth, A.

Defining Regional Landscape Population Objectives for Golden-winged Warbler in the Core of its Range. Tom Will, USFWS, Ft. Snelling, MN; Thogmartin, W., USGS, La Crosse, WI; Roth, A., MTU., Houghton, MI. tom_will@fws.gov.

With an estimated 65% of all breeding *Vermivora chrysoptera*, Minnesota and Wisconsin share major responsibility for achieving the 2004 Partners in Flight objective of doubling the continental population of Golden-winged Warblers. However, setting meaningful population objectives for the species in the Boreal Hardwoods Transition Bird Conservation Region is complicated by both sociological and biological issues. Operating under the prevailing rarity-focused paradigm, local partners often express difficulty justifying significant action for a species where it is still relatively common and perceived to be increasing. At local scales, Golden-wing presence is influenced by the co-occurrence of vegetative structural characteristics that are found in a variety of divergent habitat types; Golden-winged habitat is therefore difficult to define at broader scales with more broadly classified remotely sensed data. We illustrate the interplay between population estimation and objective-setting by comparing different model-based approaches derived from different data sets: the Breeding Bird Survey, local Minnesota/Wisconsin detection estimates, point counts in National Forests, and a northern WI habitat-stratified study. Following the PIF Five Elements Process, we then use habitat models with different assumptions and different data sources to predict spatially-explicit Golden-wing abundance across the region. Finally, we place our model predictions in the context of projected MN/WI forest management and exurban development to suggest realistic population-based habitat objectives for Golden-wings and to define alternative conservation strategies tailored to distinctive Golden-wing upland and wetland landscapes. We hope that our approach will help shape the evolving paradigm of partner conservation stewardship for species that still reside commonly with others of their kind.

Definiendo Objetivos Poblacionales de la Reinita Alidorada en el Area Núcleo de su Rango a Nivel Regional de Paisaje.

Con un estimativo del 65% de todas las *Vermivoras chrysopteras* reproductivas, Minnesota y Wisconsin comparten la mayor responsabilidad para alcanzar los objetivos del 2004 de Compañeros en Vuelo de doblar la población continental de las Reinitas-Alidoradas. Sin embargo, el establecimiento de objetivos poblacionales significativos para la especie en la Región de Conservación de Aves de la Transición Boreal de Bosque Deciduo es complicada por cuestiones sociológicas y biológicas. Operando bajo el prevalente paradigma de rareza focalizada, socios locales a menudo han expresado dificultad para justificar acciones significativas para una especie donde todavía es relativamente común y que se percibe está incrementando. A escala local, la presencia de la Reinita-Alidorada está influenciada por la co-occurrencia de características estructurales de vegetación diferentes que se encuentran en una variedad de tipos de hábitats; el hábitat de la Reinita-Alidorada es por lo tanto difícil de definir a escalas más amplias con datos de sensores remotos ampliamente clasificados. Nosotros ilustramos la interacción entre la estimación de la población y el objetivo establecido comparando diferentes enfoques basados en modelos derivados de diferentes conjuntos de datos: Breeding Bird Survey, estimaciones de detección locales en Minnesota/Wisconsin, conteos de punto en Bosques Nacionales, y un estudio de hábitat estratificado en el norte de Wisconsin. Siguiendo el proceso de cinco elementos de PIF, nosotros usamos los modelos de hábitat con diferentes supuestos y diferentes fuentes de datos para predecir la abundancia espacial explícita de la Reinita-Alidorada a través de la región. Finalmente, colocamos las predicciones de nuestro modelo en el contexto de la proyectada ordenación de los bosques de MN/WI y el desarrollo de los suburbios para sugerir un objetivo de población realista basado en el hábitat para la Reinita-Alidorada y para definir estrategias de conservación alternativas adaptadas para las Reinitas-Alidoradas distintivas de las tierras altas y de los paisajes de humedales. Esperamos que nuestro enfoque contribuya a dar forma al paradigma que involucra la gestión de aliados para la conservación de especies que aún residen comúnmente con otros de su clase.

Williams°, E. J.

Opportunities and Challenges for Coordinated Implementation. Emily Jo Williams, USFWS, Denver, CO; emilyjo_williams@fws.gov.

Partners in Flight has much to offer the conservation community relative to implementing the State Wildlife Action Plans and vice versa. The PIF and SWAP planning processes both began with a similar format in mind and the goal that individual plans would role up into a national approach to conservation of priority species. In both cases, the wildlife conservation needs and cultural differences of conservation community resulted in very different end products difficult to combine into a national plan but both contributed substantially to the evolution of conservation at a national level. Both planning processes brought together previously disparate or at least disconnected wildlife con-

servation interests creating tremendous momentum. In implementing the SWAPs, PIF and the bird conservation community are particularly valuable in terms of established partnerships, consistent prioritization, and well considered approaches to monitoring. In some regions, bird conservation has resulted in an adaptive approach that effectively combines biological planning, landscape design, monitoring and research that can serve as models and may be expanded to include additional species of greatest conservation need. Combining priorities and conservation actions across different taxa is a significant challenge and opportunity with valuable insight available from bird conservation experiences. Expanding the view of bird conservation from waterfowl to all birds required cultural changes and developing relationships that will also be essential in implementing SWAPs. PIF must be an active partner in identifying priorities, developing new and expanded approaches, and in implementing coordinated conservation actions.

Oportunidades y Retos para una Implementación Coordinada.

Partners in Flight (PIF) puede ofrecer mucho a la comunidad de conservación en lo relativo a la implementación de los Planes de Acción de Vida Silvestre de los Estados (SWAP) y viceversa. Los procesos de planeación PIF y SWAP empezaron con un formato similar en mente y con la finalidad de que los planes individuales se conformarían en un enfoque nacional para la conservación de especies prioritarias. En ambos casos, las necesicades de conservación de especies y las diferencias culturales de la comunidad de conservación resultaron en productos finales muy diferentes, difíciles de combinar en un plan nacional pero ambos contribuyeron substancialmente a la evolución de la conservación a nivel nacional. Ambos procesos de planeación juntaron intereses de conservación previamente dispares o cuando menos desconectados, creando un gran impulso. Durane la implementación de los SWAP, PIF y la comunidad de conservación de aves son particularmente valuables en términos del establecimiento de asociaciones, prioridades consistentes y acercamientos al monitoreo bien sopesados. En algunas regiones, la conservación de aves ha resultado en un enfoque adaptativo que combina efectivamente planeación biológica, diseño de paisajes, monitoreo e investigación que pueden servir como modelos que pueden ser expandidos para incluir especies adicionales que presentan las necesidades de conservación mas grandes. Combinar prioridades y acciones de conservación que atraviesan diferentes taxa es un reto signifiicativo y una oportunidad con lecciones valiosas en la experiencia de conservación de aves. El expander la perspectiva de conservación de aves cinegéticas acuáticas a todas las aves requirió cambios culturales y el desarrollo de relaciones que también serán esenciales en la implementación de SWAPs. PIF debe ser un compañero activo en la identificación de prioridades, el desarrollo de enfoques nuevos y en la expansión e implementación de acciones coordinadas de conservación.

Williams°, S. G.; White, J. B.

Online GAP Data Explorer Tool: An Opensource GIS Decision Support Tool for Gap Analysis Data, Steven G. Williams, NCSU, Raleigh, NC; White, J.B., NCSU, Raleigh, NC. steve_williams@ncsu.edu.

As the Gap Analysis Program creates ever larger data sets for regional applications the need for an online, intuitive delivery and analysis tool has become a critical component in fulfilling the GAP mission. Previous efforts by GAP to develop an interactive analysis tool relied on expensive proprietary software and a local installation of data. These conditions imposed restrictions on the size of the data set and resulted in a less than ideal situation for application and data updates. The current generation of the Online GAP Data Explorer Tool (OGDET) is a web-based application that can be accessed with an internet connection and a modern web browser. All data and customized scripting is hosted by GAP servers. Recent advances in map serving technologies has allowed us to create a responsive analysis application that can process large polygon and raster datasets making a web-delivered application possible. The OGDET is being developed on a LAPS architecture (Linux, Apache, PHP, PostgreSQL) with rCalc, PostGIS, GRASS, and MapServer. This opensource framework has provided a flexible, economical, and robust solution. This poster will demonstrate the analytical functionality of the OGDET and discuss future development.

Como Gap Analysis Program crea modems siempre más grandes para los usos regionales la necesidad de una entrega en línea, intuitiva y la herramienta del análisis se ha convertido en un componente crítico en satisfacer GAP misión. Los esfuerzos anteriores de GAP de desarrollar una herramienta interactiva del análisis confiaron en software propriatary costoso y una instalación local de datos. Estas restricciones impuestas condiciones en el tamaño del modem y dado lugar a una situación menos que ideal para las actualizaciones del uso y de los datos. La generación actual del Online GAP Data Explorer Tool (OGDET) es un uso tela-basado que se puede alcanzar con una conexión del Internet y un web browser moderno. Todos los datos y scripting modificado para requisitos particulares se recibe cerca GAP servidores. Los avances recientes en tecnologías de la porción del mapa han permitido que creemos un uso responsivo del análisis que puede procesar el polígono y la trama grandes datasets que hacen un uso tela-entregado posible. OGDET se está convirtiendo en a LAPS arquitectura (Linux, Apache, PHP, PostgreSQL) with rCalc, PostGIS, GRASS, y MapServer. Este marco del opensource ha proporcionado una solución flexible , económica, y robusta. Este cartel demostrará la funcionalidad analítica del OGDET y discuta el desarrollo futuro.

Williamson°, S. J.; Donovan, G.; McAuley, D. G.

Northern Forest Woodcock Initiative: Conservation of Shrubland-Dependent Species of Greatest Conservation Need in the Northeastern U.S. Scot Williamson, WMI, St. Johnsbury, VT; Donovan, G., WMI, Holden, ME; McAuley, D., USGS, Orono, ME. wmisw@together.net.

American Woodcock populations have declined 2 to 4 percent per year since the early 1970s. Research has documented that the loss of young forest and shrubland habitats is the primary cause of the decline. Similarly, state wildlife action plans from Northeastern U.S. states list greater than 50 species of Greatest Conservation Need declining because young forest and shrubland habitats are becoming increasingly uncommon. Bird conservation plans, including Partners in Flight and the American Woodcock Conservation Plan, have established young forest habitat goals needed to reverse the declining trend of these species. Because most of the habitat is in private ownership, progress towards goals depends upon private landowners adopting management recommendations. Farm Bill, forestry and wildlife habitat programs, provide critical financial incentives. The Northern Forest Woodcock Initiative approach employs habitat Best Management Practices, habitat demonstration areas, monitoring and targeted outreach to private landowners.

Wilson°, M. D.

The Southeastern Nightjar Survey Network: First Year Results and Future Plans. Michael D. Wilson, CCB, CWM, Williamsburg, VA. mdwils@wm.edu.

In recent years, conservationists and the general public have come to share a general sense that populations of Whip-poor-wills and Chuck-will's Widows are dramatically declining. Despite this concern, there was no long-term monitoring strategy in place to document the precise scale and magnitude of these changes. The Southeastern Nightjar Surveys was launched during the summer of 2007 to collect information on the population distribution and trends of these nightjar species over ten southeastern U.S. states. Surveys are conducted by volunteers using a protocol specifically designed to collect data when detection rates of nightjars are at their highest and most precise. Nearly 90 routes were conducted during the first year of the program. This result is encouraging given that the program was announced to the public only two weeks before the nightjar survey window. In addition to documenting long-term population changes, nightjar survey data will also be used for shorter-term goals such as examining the influence of landscape composition on local abundance. Results from this first year effort are presented along with future plans for the Survey Network.

Wilson°, R.

Monitoring for Multiple Objectives in the Mississippi Alluvial Valley. R. Randy Wilson, USFWS, Jackson, MS. Randy_Wilson@fws.gov.

Over the last few years, the conservation community has realized increase demands on biological accountability via State Wildlife Plans and the U.S. Fish and Wildlife Service's Strategic Habitat Conservation Initiative. This in turn has increased the demands on (coordinated) monitoring activities as outlined in the NABCI Coordinated Bird Monitoring Report. In the Mississippi Alluvial Valley, conservation partners working through the Lower Mississippi Valley Joint Venture have developed biologically-based, spatially-explicit habitat objectives for forest interior songbirds, as well as, the development of desired forest conditions to guide restoration and management activities. To facilitate adaptive management of these forest resources, conservation partners have also designed and implemented a scientifically robust, coordinated forest breeding bird program to estimate abundance using detection probabilities and vital rates using a series of MAPS banding stations. Simultaneously, partners are also implementing a coordinated habitat monitoring program to monitor/evaluate habitat conditions at multiple spatial scales.

Monitoreo de Objetivos Múltiples en el Valle Aluvial del Mississippi

En años recientes, la comunidad conservacionista ha recibido una demanda de mayor responsabilidad sobre recursos biológicos a través de los Planes Estatales de Vida Silvestre y la Iniciativa de Conservación de Hábitat Estratégico del Servicio de Pesca y Vida Silvestre de los Estados Unidos. A su vez, también ha incrementado la demanda de actividades coordinadas de monitoreo, como se definen en el Reporte de Monitoreo Coordinado NABCI. En el valle aluvial del Mississippi, los socios de conservación que trabajan a través de la Sociedad de Responsabilidad Compartida del Valle Bajo del Mississippi han fijado objetivos de hábitat con bases biológicas espacialmente explícitas para las aves terrestres del interior del bosque, así como el desarrollo de las condiciones que guíen actividades de restauración y manejo. Para facilitar el manejo adaptativo de estos recursos forestales, los socios de conservación también han designado e implementado un programa coordinado para aves reproductivas de bosque, que estime su abundancia utilizando probabilidades de detección y tasas vitales utilizando una serie de estaciones de anillado MAPS. Simultáneamente, los socios están implementando un programa coordinado de monitoreo de hábitat para evaluar sus condiciones a múltiples escalas espaciales.

Wilson°, R.

Monitoring Change in Forest Structure and Avian Response to Forest Management at Multiple Spatial Scales. R. Randy Wilson, USFWS, Jackson, MS. Randy_Wilson@fws.gov.

Conservation partners in the Mississippi Alluvial Valley recently developed forest management recommendations to enhance wildlife habitat (aka, desired forest conditions). To facilitate implementation of these recommendations in an adaptive manner, conservation partners simultaneously developed a statistically-sound, coordinated monitoring program to assess changes in forest structure and breeding bird response to forest management activities at multiple spatial scales. The monitoring program includes detailed goals, objectives, a defined sampling framework, and the use of central, web-based data repositories to facilitate storage and management of data. Data will be used by land managers to revise / modify forest management prescriptions to enhance habitat for forest interior birds and other priority wildlife species.

Wimer°, M.

Managing Bird Monitoring Data to Meet Research and Conservation Goals - Some PIF Point Count Database Examples. Mark Wimer, USGS, Laurel, MD. mwimer@usgs.gov.

The Bird Point Count Database has been online for 6 years, and the challenges in managing a single central database for one survey method have included everything from being too generalized to being too specialized. Because of regular improvements in survey methods and evolving monitoring objectives, we have sought to integrate the topic of data management into discussions with partners at several steps in the conservation process. Several detailed examples of integrating data management with conservation processes will be discussed. Success stories include focused efforts on specific methods and projects such as the Eastern Painted Bunting survey. Future plans for the Bird Point Count Database include more data output formats and integration with other tools, and increasing support of collaborative regional survey programs using standardized methods.

La base de datos de conteo por puntos ha estado en línea desde hace 6 años, y los desafíos en manejar una base de datos central para este método de censos han incluido de todo, desde ser muy generalizada hasta ser muy especializada. Debido a mejoras periódicas en los métodos de censos y la evolución de objetivos de monitoreo, hemos tratado de integrar el tema de manejo de datos en discusiones con colaboradores durante varias etapas del proceso de conservación. Varios ejemplos detallados de integración de manejo de datos con procesos de conservación serán discutidos. Éxitos incluyen esfuerzos enfocados en métodos específicos y proyectos tal como el censo de la población oriental del azulillo sietecolores. Planes futuros para la base de datos de conteos por puntos incluyen aumentar más formatos de salida de datos e integración con otras herramientas, y aumentar apoyo a programas de colaboración regional de censos utilizando métodos estándares.

Wimer°, M.; Peterjohn, B.; Griffin, N.; Ott, A.; Sussman, A.; Hopkins, J.

A North American Breeding Bird Atlas? Mark Wimer, USGS, Laurel, MD; Peterjohn, B., USGS, Laurel, MD; Griffin, N., USGS, Laurel, MD; Ott, A., Monmouth Co. Park System, Lincroft, NJ; Sussman, A., UD, Newark, DE; Hopkins, J., USGS, Laurel, MD. mwimer@usgs.gov.

We have compiled results from over 30 Breeding Bird Atlas projects in North America and provide them in a single uniform format for research and conservation uses. Having all atlases in a single format requires careful capture of metadata, and we will present maps that attempt to address the challenges of providing data from a diversity of projects on a single map page. In addition, many areas are now conducting second-round atlases, allowing change maps; comparing successive atlases within a state or province also adds cartographic challenges. Stop by this poster to critique maps, discuss ideas, and provide your opinion as to whether a continent-level map of breeding from different time periods is desirable.

Wipf°, M.; Pitkin, M.; Gardali, T.

Mist-netting Outreach – Creating a Science Learning Opportunity with Your Data. Missy Wipf, PRBO, Petaluma, CA; Pitkin, M., PRBO, Petaluma, CA; Gardali, T., PRBO, Petaluma, CA mwipf@prbo.org.

Education and outreach is a key and often missed opportunity at banding stations. Utilizing tools and data when incorporating group visits at mist-netting and bird banding stations can provide a much more meaningful experience for students and educators by increasing the opportunity to engage your audience and communicate your message. Here we use PRBO's Warbling Vireo Activity with capture data from PRBO's Palomarin Field Station mist-nets since 1977 as an example of outreach for banding stations.

Educación en Las Estaciones de Anillar - Crear una oportunidad de aprender de la ciencia con sus datos.

La educación y la difusión es una clave que, a menudo, se pierde en las estaciones de anillar. La utilización de instrumentos y datos a la incorporación del grupo de visitas a las redes y estaciones de anillar de aves pueden proporcionar una experiencia mucho más significativa para los estudiantes y los educadores por el aumento de la oportunidad de participar a su público y comunicar su mensaje. Aquí utilizamos actividad del Warbling Vireo con datos de captura desde 1977de la estacion de campo de PRBO como un ejemplo de divulgación de las estaciones de anillar.

Wirth°, R.

Values of Shade Coffee to Birds. Randolph L. Wirth , Caffe Ibis Coffee Roasting Company, Logan, Utah. randy@caffeibis.com.

Because coffee is grown in over 80 countries worldwide and represents a $70 billion dollar global market at retail, the positive and negative influence of coffee growing, purchasing, and trading practices are significant. Indeed, coffee business provides sustenance for over 125 million people worldwide. So what is the connection between coffee and birds and how does the consumer make it?

Wood*, E.; Pidgeon, A. M.; Radeloff, V. C.

Factors Affecting Avian Use and Occupancy of Savanna Habitats at Fort McCoy. Eric Wood*; Pidgeon, A.M.; Radeloff, V.C., UW, Madison, WI. emwood@wisc.edu.

Prior to European settlement, savannas were common throughout the American Midwest. Today, much of these vegetation communities have been lost due to human land use, habitat alteration, and fire suppression. In response to the loss of savanna habitats, efforts have been made in select areas of the Midwest to restore this vegetation community using thinning and prescribed burns. Unfortunately, little is known about how these management strategies affect the distribution of bird species that may use savanna habitats. We measured bird habitat in the Midwest across the prairie to woodland continuum. In the spring and summer of 2007, point count bird surveys and vegetation measurements were completed at 121 sample points at Fort McCoy Military Installation, Wisconsin, USA. Sample points were partitioned equally (57 each) among three habitat types: open canopy sand prairie, sparse canopy black oak (*Quercus velutina*) savanna, and dense canopy woodland. To define use, the proportion of sites occupied on at least one of the four counting occasions for each species at the 121 sample points was assessed for 25 bird species known to associate within savanna during the breeding season. Contingency table analysis revealed 10 of 25 species used sparse canopy savanna proportionately more throughout the breeding season than open canopy prairie or dense canopy woodland. Single-season, single-species occupancy models were built for these 10 birds to define canopy cover thresholds and features of the habitat that influence use. The results of this study suggest that certain bird species use savanna proportionately more than they use grassland or woodland habitats. This is important information for restoration and conservation efforts since many of these bird species are Partners in Flight Species of Continental Importance for North America.

Wood, C.L.; Sullivan, B.L.; Iliff, M.J.°; Kelling, S. T.

eBird—An Integrated Bird Monitoring Network for Birders. Christopher L. Wood, CLO; Sullivan, B.L., Iliff, M.J.; Kelling, S.T.; 159 Sapsucker Woods Rd., Ithaca, NY 14850. clw37@cornell.edu

Launched in 2002 by the Cornell Lab of Ornithology and National Audubon Society, eBird (http://ebird.org) has become one of the largest and fastest growing biodiversity resources in existence contributing to data-centric research. eBird collects observations from birders through portals managed and maintained by local partner conservation organizations . In the past two years alone, eBird has collected over 8 million observations from some 30,000 birders. Automated data quality filters developed by regional bird experts review all submissions before they enter the database. eBird's application infrastructure is designed to allow local organizations to use eBird for specific projects and allows for management of protocol, information content, and checklist filters, while archiving their data directly into an on-line warehouse shared by all eBird projects. Portals may have a regional focus (aVerAves, eBird Costa Rica, Texas eBird) or they may have more specific goals and/or methodologies to address specific research questions (Bird Conservation Network eBird, Louisiana Winter Bird Atlas). Each eBird portal is fully integrated within the eBird database and application infrastructure so that data can be analyzed across political and geographic boundaries, both by participants and anyone accessing the data. Emphasis is placed on data visualizations (maps, graphs and

charts) to allow for discovery. All eBird data flow into international biodiversity data systems such as the Avian Knowledge Network (AKN), and Global Biodiversity Information Facility (GBIF).

eBird – Una Red Integrada de Monitoreo Para Observadores de Aves

eBird (http://eBird.org) fue iniciado en 2002 por el Laboratorio de Ornitología de Cornell y la Sociedad Nacional Audubon y se ha convertido en uno de los recursos de investigación en base a datos de biodiversidad más grandes y de más rápido crecimiento que existen. eBird colecta observaciones de aficionados a través de portales de Internet manejados y mantenidos por organizaciones locales socias dedicadas a la conservación. Tan sólo en los dos años recientes, eBird ha recolectado más de 8 millones de observaciones de cerca de 30,000 observadores de aves. Los filtros de calidad de datos automatizados desarrollados por expertos revisan todos los registros enviados antes de que ingresen a la base de datos. La infraestructura de aplicaciones de eBird esta diseñada para permitir a organizaciones locales el uso de eBird para proyectos específicos y permiten el manejo de un protocolo, contenidos de información y filtros de listas de aves, mientras archivan los datos directamente en un almacén en línea compartido por todos los proyectos eBird. Los portales pueden tener un enfoque regional (aVerAves, eBird Costa Rica, Texas eBird) o pueden tener metas más concretas y/o metodologías para resolver preguntas de investigación específicas (eBird de la Red de Conservación de Aves, Atlas Invernal de las Aves de Louisiana). Cada portal de eBird está completamente integrado dentro de la base de datos e infraestructura de aplicaciones y los datos pueden ser analizados sin importar límites geográficos o políticos, tanto por participantes como por otros usuarios de los datos. Un área de énfasis son las visualizaciones de datos (mapas y gráficos) que permiten su exploración. Todos los datos de eBird fluyen a sistemas

Woodrey°, M. S.; Wheeler, J. A.

Applying the Strategic Habitat Conservation Framework to Marsh-dwelling Birds. Mark Woodrey, MSU, Biloxi, MS; Wheeler, J., USFWS, Arlington, VA. msw103@ra.msstate.edu.

Marsh-dwelling birds, as a group, are poorly known and little studied compared to many other wetland birds. Consequently, the effectiveness of conservation efforts focused on this group of birds is limited until we learn more about the habitat needs of these often elusive species. Drawing on the recently articulated framework termed Strategic Habitat Conservation, we will outline and discuss the various elements of this framework with respect to marsh and marshbird conservation. In particular, we will examine the state of biological planning, outcome-based monitoring and assumption-driven research for marshbirds. Based on our experience and knowledge of marsh bird ecology and that of subsequent session speakers, we will propose an approach for identifying and prioritizing the data necessary for the development of landscape-scale, spatially-explicit, habitat–based models at the Bird Conservation Region scale.

Yamashita°, C.

Comments on Historical Wildlife Trade in the Americas –The Present Legal x Illegal. Carlos Yamashita, IBAMA, Brazil. Carlos.Yamashita@ibama.gov.br

Wildlife trade is a complex subject, changing quickly over time and space, especially in countries with poor law enforcement, with a high human demographic effect pressuring natural habitat. Trade has long been important to humanity. Columbus cited impressive wildlife richness in the Americas like bird products - feathers, skins, etc. There were developed societies also previous to Columbus with a net of trade trails: the Anasazi (N. America), Maya (C. America) and pre-Incaic (S. America). At end of the Inca Empire there were more than 54,000 km of trails linked to the Southern Brazilian Atlantic Coast. These trails may have caused different impacts in the ecosystem (dispersion of seeds, subsequently of fauna) and our local knowledge of wildlife distribution. Until end of the 70's, wildlife was treated mostly as resource worldwide when in 1975 'CITES' was implemented. At end of the 70´s and 80´s there was a boom in the pet trade and NGOs were formed (TRAFFIC, IUCN-WTMC). Wildlife trade had been banned in Brazil since 1967 but law-enforcement was poorly established. New road construction (Trans-Amazon, Belem-Brasilia) gave people access to new birds species in new areas, bringing potential income for locals, creating possible new markets. In the 1990's cockatoos & lories (from SE Asia) became popular in the Brazilian market. Seizures of smuggled eggs and endangered species have been occurring in the last two decades. Most of these domestic seizures (roughly 80%) are passerines. Targeted species directly and indirectly affect forest function and interdependence among species.

Comentário Histórico sobre o Comércio de Fauna e Flora nas Americas- Atualmente o Legal x Ilegal.

O comércio de fauna e flora é complexo, com mudanças rápidas no tempo e espaço, especialmente nos países com lentidão judiciária e alta demografia, pressionando os ambientes naturais. O comércio sempre foi muito importante para a humanidade. A riqueza de recursos naturais como a avifauna e produtos sempre impressionaram os primeiros exploradores desde Colombo. Houve sociedades pré-colombinas com redes de trilhas comerciais: Anasazi (N. América), Maia (C. América) e Pré-Incaica (S. América). No final do império Incaico havia mais de 54.000 km em rotas, que alcançava a Mata Atlântica (Peabiru).. Esses caminhos podem ter trazido diferentes impactos aos ecossistemas (dispersão de sementes e consequentemente fauna) e nosso conhecimento atual de distribuição de fauna. Até o final dos anos 70, a fauna era tratada mundialmente como recurso, quando em 1975 a CITES foi implementada. As década de 70 e 80 foi uma explosão do comércio de animais de estimação e várias ONG foram criadas (TRAFFIC, IUCN-WTMC). No Brasil o comércio de animais silvestres foi proibido em 1967, mas pouco implementada. Com novas estradas (Transamazônica, Belém-Brasília) novos acessos a áreas de novas aves, trazendo potencial monetário para os locais , criando novo mercado. Nos anos 90, aves como cacatuas e lories (Indonésia) ficaram populares no mercado brasileiro. Apreensões de ovos e espécies ameaçadas tem ocorrido nas últimas 2 décadas. A maioria das apreensões domésticas são de passeriformes (80%). As espécies alvo podem ter suas funções e interrelação negativa na conservação de florestas.

Young°, B. E.

Internet Delivery of NatureServe's Comprehensive Bird Status, Distribution, and Management Data. Bruce E. Young, NS, Arlington, VA. Bruce_young@natureserve.org.

For over thirty years, NatureServe has maintained information on the conservation status, taxonomy, natural history, distribution, and management needs of North American birds. For nearly a decade we have made the information available freely over the Internet via NatureServe Explorer. Since 2002, we have also provided range maps showing breeding, nonbreeding, and migratory status for all Western Hemisphere birds. Recently, NatureServe created web services that allow other institutions such as NBII to display these data dynamically

tions such as NBII to display these data dynamically on their websites. These data are prime inputs into US Fish and Wildlife Service decisions about listing candidate species, are embedded into government policy and regulation as well as industry certification protocols, and form the basis for the geographical analyses in the PIF North American Landbird Conservation Plan. Major challenges include navigating data ownership and sensitivity issues related to locality information of threatened species, lack of standardization of GIS protocols for range maps, and continued funding to maintain data currency and develop innovative ways to facilitate access to the data. In the future, we plan to expand our web services offerings, add more images to enhance the attractiveness of the site, and provide distribution data at the county and watershed level. In addition, we will soon release an observational data standard that could help facilitate the sharing of data across multiple monitoring programs.

Disponibilidad en el Internet de los Datos Comprensivos de NatureServe sobre el Estado, Distribución y Manejo de las Aves

Desde hace más de treinta años, NatureServe ha mantenido información sobre el estado de conservación, taxonomía, historia natural, distribución y prioridades de manejo para las aves norteamericanas. En la última década esta información ha sido disponible gratuitamente a través del Internet por medio de NatureServe Explorer. Desde el 2002, hemos proporcionado también mapas de distribución que demuestran las áreas reproductivas, no reproductivas y migratorias para todas las aves del Hemisferio Occidental. Recién NatureServe creó unos "web services" que permite que otras instituciones como el NBII despliegen estos datos en forma dinámica en sus propios sitios web. Los datos son utilizados como insumos para las decisiones del Servicio de Pesca y Vida Silvestre de los EE.UU. sobre cuales especies deben ser colocadas en la lista de especies amenazadas y también sirven como la base para los analices geográficos del Plan para la Conservación de las Aves Norteamericanas Terrestres de PIF. Dentro de los retos importantes en este esfuerzo se incluyen la sensitividad de los datos de localidad, la falta de protocolos SIG para los mapas de distribución y la continuidad en los recursos económicos para mantener los datos y desarrollar vías innovadores para facilitar el acceso a los datos. En el futuro, tenemos planes para expandir los "web services", agregar más imágenes para enriquecer el sitio y proveer datos de distribución al nivel del condado y cuenca. Además, pronto un estándar para datos de observaciones será listo para entregar y así facilitar el intercambio de datos entre varios programas de monitoreo.

Young°, J. S.; Fletcher, R. F.; Hutto, R. L.

Novel use of a landbird database to inform management. Jock S. Young, ASC, Missoula, MT; Fletcher, R.L., ASC, Missoula, MT; Hutto, R.L., ASC, Missoula, MT. jock.young@-mso.umt.edu .

Through our close association with U.S. Forest Service biologists, we are aware of a strong desire for synthesized, map-based decision support tools, together with the necessary consultation to be able to use these products. These tools need to be applicable across broad landscapes, and across the entire gradient of potential land use within these landscapes. To address this concern, we are taking advantage of a very large database (over 3000 point counts annually) accumulated from the USFS-sponsored Northern Region Landbird Monitoring Program. Using this database, we are developing alternative bird-habitat models based on GIS vegetation layers and on field data that provide habitat variables not available through remote sensing. We are working toward developing the most sophisticated habitat models that can still be translated into useful decision support tools. Once these alternative models are rigorously validated using new data, and the most efficient modeling approach is selected, we will develop map-based decision support tools to facilitate understanding and evaluation of the expected future distributions of a wide suite of species based on the effects of different alternative management scenarios. Determining the most effective modeling procedures will also help inform the sampling designs that should be used for new monitoring targeted to fill data gaps. This program is a unique example of an academic/agency partnership involving monitoring to enable adaptive management.

Zebehazy°, L.; Fushille, P.; O'Connor, K.; Gosselin, A.; Brown, J.

Black-capped Vireo (*Vireo atricapilla*) Habitat Restoration on the Balcones Canyonlands Preserve, Travis County, Texas. Laura Zebehazy; Fushille, P.; O'Connor, K.; Gosselin, A.; Brown, J., Travis County NREQ Department, Austin, TX. laura.zebehazy@co.travis.tx.us.

In 1996, the USFWS issued a 10(a)1b permit to Travis County and the City of Austin to mitigate for the loss of habitat due to development and to facilitate the local recovery of the black-capped vireo (*Vireo atricapilla*) and seven other endangered species. A minimum of 30,428 acres of endangered species habitat in western Travis County, Texas will be set aside as the mitigation. The Balcones Canyonlands Preserve (BCP) (~28,000 acres as of Fall 2007) is managed by various governmental and private entities, including Travis County. Presently, Travis County Natural Resources actively manages about 5,000 acres of BCP land. Due to the proximity to development, Travis County is unable to use prescribed fire to maintain or create early to mid-successional habitat preferred by black-capped vireos. Therefore, since 2000, Travis County has utilized mechanical methods such as manual clearing and flail mowers. To date, approximately 110 acres of historical, or potential, vireo habitat has been manipulated. This includes an area that supports the largest colony of vireos on BCP lands. The restoration program has been successful in providing breeding and nesting habitat for vireos, and recent surveys may support an increase in vireo recruitment to the treated areas. Preliminary data from the 2007 field season show 12 territories were established (pair success, 0.916; breeding success, 0.583). Challenges associated with black-capped vireo habitat restoration as well as future research needs and priorities will be discussed.

En 1996, la USFWS emitió el permiso 10(a)1b al Condado de Travis y a la Ciudad de Austin para mitigar la pérdida del hábitat de especies en peligro de extinción, debido al desarrollo y facilitar la recuperación local del vireo gorra negra (Vireo atricapilla) y otras siete especies en peligro de extinción. Un mínimo de 30,428 acres de hábitat para especies en peligro de extinción está localizado al oeste del Condado de Travis en Texas será reservado para mitigar esta situación. La Preserva Balcones Canyonland, sus siglas en inglés BCP, al otoño del presente año se cuenta con alrededor de 28,000 acres de terreno. Estos territorios son mantenidos por varias entidades públicas y privadas, incluyendo el Condado de Travis. Al presente, el Departamento de Recursos Naturales del Condado de Travis, mantiene activamente alrededor de 5,000 acres de terrenos de la Preserva Balcones Canyonland. Debido a la proximidad de los diversos desarrollos, el Condado de Travis se vé incapacitado de utilizar el fuego prescito para mantener o crear con éxito el hábitat temprano o medio preferido por el vireo gorra negra. Desde el año 2000, el Condado de Travis ha utilizado métodos

2000, el Condado de Travis ha utilizado métodos mecánicos para el mantenimiento de estos terrenos; como la limpieza manual y tractores. Hoy día, apróximadamente 110 acres de éste hábitat ha sido manipulado. Esto incluye unas áreas que le brindan apoyo a estas grandes colonias de los vireos en los terrenos de la preserva. Los programas de restauración han sido bien satisfactorios para proveer el ambiente para el nacimiento y nido en el hábitat del vireo. Recientes encuestas han servido de apoyo para aumentar el reclutamiento del vireo en estas áreas. Datos anteriores al 2007 muestran 12 territorios que fueron establecidos (apareamientos logrados, 0.916; nacimientos logrados, 0.583). Retos asociados con el restauramiento del hábitat del vireo gorra negra, al igual que la necesidad de futuras investigaciones y prioridades serán discutidas.

Zolotoff-Pallais°, J. M.; Morales, S.; Torres, M.; Gutiérrez, M.

Áreas Importantes Para Aves en Nicaragua. Selección Preliminar. *Jose M. Zolotoff-Pallais, F.C., Nicaragua; Morales, S., AAS, Nicaragua; Torres, M., FC, Nicaragua; Gutiérrez, M., FC, Nicaragua. zolotoff@ibw.com.ni

La selección de Areas Importantes para Aves (IBAS) es un programa mundial de BirdLife International (BLI), cuyo propósito identificar sitios que a largo plazo sirva para proteger las aves del mundo. Se basa en criterios globales como presencia de especies amenazadas a nivel mundial (A1), especies de rangos restringidos (A2), especies restringidas a biomas (A3) y congregación de especies acuáticas (A4). En 2006 analizamos las especies según los criterios encontrando 73 especies de aves con criterios BLI. Se revisó la información Planes de Manejo, publicaciones de áreas naturales y varios documentos entre listados personales de aves y literatura no publicada. El proceso fue consensuado a través de dos reuniones con expertos del MARENA, ONGs conservacionistas, ornitólogos, e investigadores de otras áreas. Se seleccionaron 46 polígonos de IBAS, algunas áreas fueron agrupadas por su cercanía y similitud de hábitat resultando un total final de 37 IBAS en Nicaragua. Del total de polígonos 34 son áreas protegida (74%), 4 Reservas Silvestres Privadas (9%) y 7 (15%) Áreas Naturales sin ningún tipo de protección. La mayoría de las áreas se ubican en la región Pacífico (13) y Norte (13), seguido por la región del Sureste (9). Es necesario verificar y actualizar algunos de los registros encontrados y llevar a cabo programas de monitoreo a largo plazo sobre todo para especies claves. Esperamos que nuevas IBAS sean agregadas en el futuro una vez que se genere mayor información sobre la distribución y abundancia de las aves en Nicaragua incluyendo especies de importancia nacional.

Important Bird Areas of Nicaragua. Preliminary Selection.

The selection of Important Bird Areas (IBAs) is a world program of BirdLife International (BLI). The main purpose is to identify world bird conservation sites in the long term. It relies on global criteria such as world threatened species (A1), restricted range species (A2), species restricted to biomes (3) and water birds species (A4). In 2006 we analyzed species based on those criteria finding 73 species of birds with BLI criteria. Information was gathered from management plans, publications on natural areas, and several documents including personal bird list and gray literature. The process was presented throughout two meetings with experts from MARENA, environmental NGOs, ornithologists and researchers from other areas. Forty-six IBA polygons were selected; some were grouped due to their proximity or habitat similarity with a total of 37 IBA in Nicaragua. Of the total of polygons, 34 are protected areas (74%), 4 Private Natural Reserves (9%) and 7 natural areas (15%) without any type of status protection. The majority of the areas are located in the Pacific region (13) and North (13); followed by the southeast (9). It is necessary to verify and update some records and carry out long term bird monitoring programs, especially on key species. We hope that new IBAs are added in the future when more information is available on the distribution and abundance of birds in Nicaragua including national important species.

Abstract Translators

We greatly appreciate the assistance of the following people for translating one or more abstracts into a second language. We apologize if we have missed anyone.

Rafael Avila-Flores
Humberto Berlanga
Nico Dauphiné
David Díaz
Paul van Els
Sonia Hernandez-Divers
Brad Jacobs
Dennis Jongsomjit
Sandra Loor-Vela
Maria Isabel Moreno
Adolfo G. Navarro
Leo Salas
Tito Vilella
Carlos Yamashita
Bruce E. Young
Oscar Beingolea
Ashley Colevecchio
Horacio de la Cueva
Jennie Duberstein
Kathryn Goodyear
Ernesto Ruelas Inzunza
Olaf Jahn
Denis Lepage
Elizabeth Martín
Nadia Navarrete
Bernardo Ortiz Von Halle
Mirella Espinoza Tenorio
Teresa Ward
Itala Yépez

PARTNERS IN FLIGHT MISSION

The Partners in Flight mission is expressed in three related concepts:

► **Helping Species at Risk** – Species must be conserved before they become imperiled. Allowing species to become threatened or endangered results in long-term and costly recovery efforts whose success is far from guaranteed. Endangered species must not only be protected from extinction but must be recovered to once again play their roles in ensuring the future of healthy ecosystems.

► **Keeping Common Birds Common** – Common native birds, both resident and migratory, must remain common throughout their natural ranges. These species comprise the core of our avian diversity and are integral to the integrity of the ecosystems of which they are a part.

► **Voluntary Partnerships for Birds, Habitats and People** – Conservation of landbirds and their habitats is not a task that can be undertaken alone. Partnerships must be formed with others who are working for conservation on the same landscapes as well as those who depend on those landscapes for their economic and social well-being. The conservation of natural systems is fundamentally necessary for life on earth, including that of humans.

PARTNERS IN FLIGHT GOALS

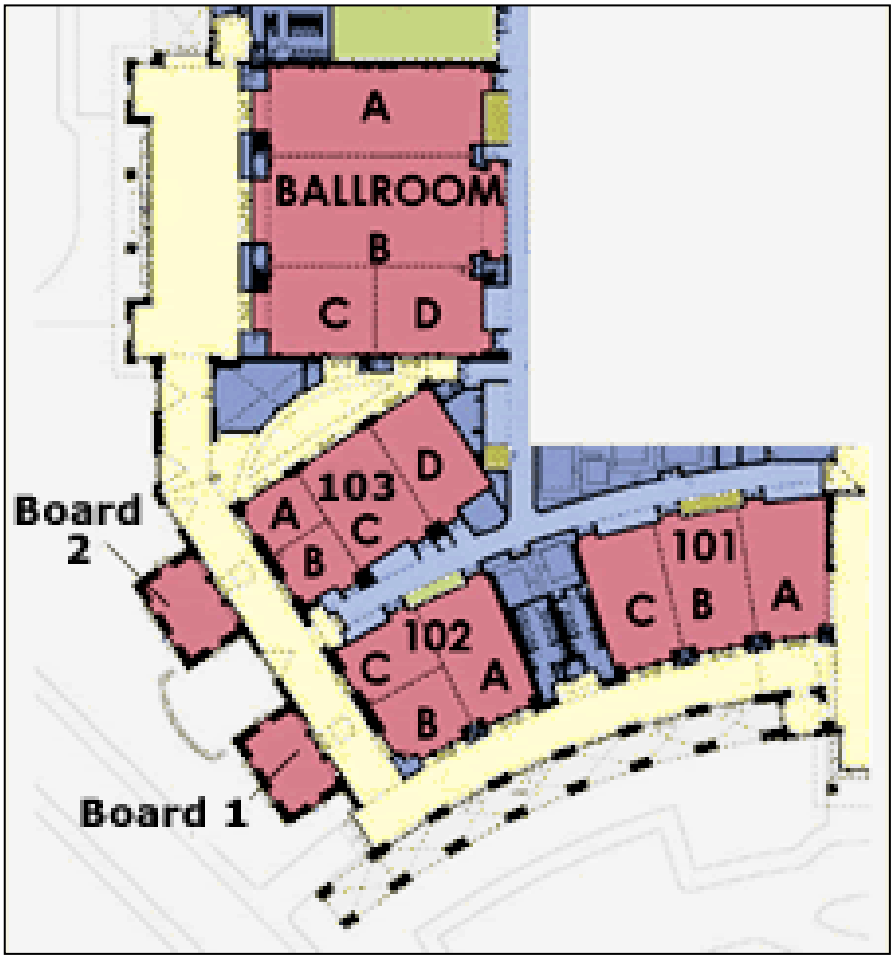
Success in the conservation of North America's landbird avifauna will require that Partners in Flight meet the following overarching goals:

► Ensure an active scientifically-based conservation design process that identifies and develops solutions to threats and risks to landbird populations.

► Create a coordinated network of conservation partners implementing the objectives of the landbird conservation plans at multiple scales.

► Secure sufficient commitment and resources to support vigorous implementation of landbird conservation objectives.


STORAGE
DROP OFF
KITCHEN
LOADING DOCK
1 2 3 4 5 6 7 8 9 10
DROP OFF
PRE-FUNCTION
BALLROOM
10,000 SF
EXHIBIT HALL A
28,000 SF
EXHIBIT HALL B
33,400 SF
SHOW
SHOW
ADMINISTRATION
MEETING ROOM
MEETING ROOM
ENTRY LOBBY
PALM COURT
BOARD ROOM
MEETING ROOM
BOARD ROOM
CONCOURSE
DROP OFF


A
BALLROOM
B
C D
103
A D
C
B
Board 2
101
C B A
102
C A
B
Board 1