



Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society
Supported by the USAID/Global Conservation Program

Greater Madidi Landscape Conservation Area

Annual Report
October 2006 – September 2007

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I. Summary of Activity Status and Progress

a. Introduction/Summary

The Greater Madidi Landscape is documented as one of the most species-rich regions of the world. This bi-national area of approximately 95,000km² includes a sweeping altitudinal range on the eastern flanks of the Andes. Spectacled bears, giant otters, jaguars, maned wolves and Andean condors and their habitats are partially protected by five protected areas, three in Bolivia: the Madidi National Park and Natural Area of Integrated Management (PNANMI Madidi), the Apolobamba Natural Area of Integrated Management (ANMI Apolobamba), and the Pilón Lajas Biosphere Reserve and Indigenous Communal Land (RB&TCO Pilón Lajas) and two in Peru: the Bahuaja-Sonene National Park and the Tambopata Reserve. Yet these protected areas alone cannot adequately conserve wide-ranging, resource-demanding species, nor is the current capacity of government protected areas services (SERNAP & INRENA) sufficient to protect the reserves. The unique biological richness of the region is threatened by unregulated land-use and resource extraction (e.g., livestock grazing, hunting) related to colonization and road development and the threats are exacerbated by a legal/regulatory framework that is fraught with internal conflicts.

The principal project goal for the Greater Madidi Landscape Conservation Area is to conserve biodiversity through application of the landscape conservation approach. The landscape conservation approach is based on the development of spatially explicit models that represent: (a) the threats to biodiversity across the landscape, and (b) the biological needs of a suite of Landscape Species. Due to their extensive and heterogeneous spatial needs, landscape species often represent an extreme challenge for long-term conservation purposes. Their ecological importance also implies that their removal from a landscape will have deleterious, cascading impacts on ecosystems. WCS wishes to conserve ecologically functional landscapes and, therefore, we are tailoring many of our efforts to respond to the spatial needs of Landscape Species. A working hypothesis is that by ensuring the needs of area-demanding Landscape Species, much of the rest of the biodiversity in the landscape will also be conserved.

Although the seven selected Landscape Species (jaguar, giant otter, maned wolf, military macaw, spectacled bear, Andean condor, and vicuña) are famed for their extensive habitat requirements, there is a relative dearth of information regarding their basic biology as well as the magnitude of their spatial requirements. In the Greater Madidi Landscape Conservation Area, we are determining the spatial needs of ecologically functional populations of these Landscape Species, developing management strategies that include both protected areas and non-protected areas critical to their

needs, and including the full participation of local people and other stakeholders in management decisions.

The Greater Madidi Landscape Conservation Area Project's strategy has been to work closely with the Tacana people to win legal recognition of their traditional territory, the Tacana Indigenous Communal Land (Tacana TCO), which borders a large portion of the Madidi protected area. By working with the Tacana, using the Landscape Species Approach, we will ensure that significant tracts of natural and semi-natural habitat will retain a high conservation value for the focal Landscape Species and biodiversity as a whole. Because most wide-ranging species move throughout the lowlands, sound management in the TCO will also help to maintain the integrity of the adjacent Madidi National Park. This approach has been expanded to include work with the second Tacana TCO in the Madre de Dios region of La Paz Department, two requested Lecos TCOs around Apolo and Guanay respectively, and to support the indigenous representative organization at both the La Paz Department level (CPILAP) and the national level (CIDOB).

At the same time, the landscape approach provides the local population with incentives to improve land-use practices and policies through the development and support of community-based natural resource management projects. Our project has also provided key technical support in the development of the first Management Plan for the Madidi protected area (2004) and a full revision of the Pilón Lajas protected area and indigenous reserves management plan (2006). Efforts have gradually shifted towards full implementation of these plans. Appropriate integration of the Madidi and Pilón Lajas management plans is critical because the montane forest corridor is shared by these protected areas and because protection activities and tourism regulations which involve many of the same actors need to be coordinated.

Finally, we have taken steps toward building integrated and participatory planning processes across several jurisdictional and land use types. This helps to ensure that the visions of local people within the larger landscape are considered in concert with conservation goals. This process is building momentum with the increasing inclusion of local government bodies in environmental management and land-use planning, as well as the development of indigenous territory management plans and territorial planning initiatives.

Once again, we are pleased to report that the Greater Madidi Landscape Program remains on track. To accomplish the long-term goal of biodiversity conservation at the Greater Madidi Landscape Conservation Area, we focus on five interrelated objectives, to: 1) establish baselines and monitor Landscape Species and the landscape context in which they are found; 2) facilitate community-based natural resource management across the landscape; 3) strengthen institutional capacity in natural resource conservation and management; 4) promote the development of national policies that support the landscape conservation approach; and 5) elaborate a participative, integrated landscape conservation action plan.

Major Accomplishments

This year we have significantly broadened our network of directly supported local actors. Our groundbreaking work with CIPTA (Consejo Indígena del Pueblo Tacana) has been increasingly recognized as a model for management of indigenous territory within Bolivia and, more recently, outside the country. Our participatory model for landscape conservation was used in a major WCS proposal that has recently received support from USAID Ecuador. Our recognized technical capacity, long-term vision, open and committed partnership, and fiscal transparency have buffered and helped dispel general criticism of international NGOs from some powerful sectors of society with personal economic and political interests in the region. As a result of local support for our mission, we are now also providing assistance to two Leco indigenous organizations, in the Greater Madidi Landscape. Furthermore, we have identified a new, local NGO, Friends of Madidi Foundation, as a strategic partnership to strengthen over the coming years. Our support this year has also broadened to several regional government organizations and Campesino Federations.

Six of the indigenous territories in the landscape are now either established or well on the way to gaining legal recognition, many of them with accompanying management strategies. All three protected areas have developed management plans. Our research has raised the profile of the region and we are using the results to include adjacent areas in southern Peru in the landscape species analysis. Many of the community natural resource projects are beginning to move into commercialization phases and their success is being recognized by local funding sources. This has required strengthening processes in management and particularly administration, which we are successfully implementing with a series of local partners who were initially reticent. Due to these activities, the number of local actors with whom we are partnering to development and implement sustainable management has increased again.

We have taken various steps toward building integrated and participatory planning processes across several jurisdictional and land use types. This helps to ensure that the visions of local people within the larger landscape are considered in concert with conservation goals. This process is building momentum with the increasing inclusion of local government bodies in environmental management and land-use planning, as well as the development of indigenous territory management plans and territorial planning initiatives.

In terms of research, we remain at the forefront of conceptualizing the landscape conservation approach and developing useful Landscape Species tools that can be applied globally to landscape conservation initiatives. In particular, we have now developed multiple population target levels for conserving Landscape Species, a challenge given the incomplete information available on their densities and the current scientific debate over how many animals are required for a viable and resilient population. The initial results of these population viability analyses indicate the importance of the neighboring protected areas in Peru for effective conservation of spectacled bear, condor and jaguar. This highlights the need to consider expanding our conservation efforts to southern Peru, as well as to northeastern La Paz Department in Bolivia for species such as maned wolf, marsh deer and giant otter. Our pioneering efforts to document Andean bear and Andean condor populations, of which little was known, have proved successful and our ongoing efforts with jaguar, white-lipped peccaries, giant otter, marsh deer and a series of special element species are now well-known in the international scientific and local conservation practitioners' community. Apart from being used in local conservation planning and environmental education efforts, the results from these studies also highlight the need for landscape-scale planning for these regionally threatened species.

b. Highlights

- We produced a national database for medium to large sized mammals which summarizes all published and available grey literature and incorporates major existing databases. By the end of this reporting period, the national dataset will consist of more than 25,000 records. The importance and potential of this database is only just becoming apparent and will form the reference for all future distributional studies.
- The conservation genetics study regarding the two endemic primate species is not only of profound importance for the future of these extremely range-restricted species, but also forms one of the first such studies conducted and analyzed in Bolivia and is helping to develop institutional capacity at the UMSA University, a critical milestone considering the importance of these methodologies for many of the most threatened of Bolivia's wildlife.
- This year we have been able to take important steps towards having a landscape conservation vision shared by most of the local stakeholders; for example, we have signed agreements with FESPAI, the Colonist Federation of Iturrealde. Most importantly, by engaging with the Association of Municipalities of Northern La Paz, we will be able to incorporate the information we have gathered, the individual protected area management plans and the indigenous territorial plans in the framework of a regional landscape-level plan.
- This period has also seen concrete collaborations with municipal and local government officials, most notably during the creation and management design phase of a 37,000 hectare Municipal Tourism Reserve in the Alto Madidi jaguar census location, one of the most ecologically important locations of this landscape.

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II. Detailed Description of Site Progress

a. Key short and long-term program objectives for the site for the reporting period (October 2006-September 2007)

As we move into our eighth year in the landscape, our attention has been increasingly focused on developing the capacity of a series of local actors – protected area administrations, indigenous organizations, local government bodies, natural resource management associations, and local communities – to receive and administer funding directly and to diversify their management capacities accordingly. Another major challenge remains the integration of management activities by differing planning units, particularly in the face of proposed and ongoing infrastructure projects in the landscape and the immediately surrounding region.

b. Activity Description

Key Management Issues

The biggest challenge we have faced this year has been the recent change in government (in January 2006) and the initial lack of clarity in their policies toward protected areas and indigenous territories. Over the last six months, government policies have become clearer. The National Protected Area Service (SERNAP) was paralyzed by a change in leadership which put many of their activities, and our activities with them, on hold from May to December 2006. Fortunately, we were able to adapt and took this time to focus on working with the neighboring indigenous territories and Ixiamas Municipality, and this has allowed us to begin picking up a common agenda with the protected area service and the Viceministry of Natural Resources and the Environment from January 2007 onwards.

Between March and May of 2007 vocal demonstrations occurred against the land titling process in the Apolo region of the landscape. Demonstrators focused on the Madidi protected area and the Lecos indigenous territories, demanding that these lands be opened up for logging activities, hydrocarbon exploitation and road development. We expect that SERNAP, WCS and our indigenous community partners will continue to be embroiled in this clash between local rights and national/commercial interests during 2007-2008.

OBJECTIVE 1: Establish baselines and monitor landscape species and the landscape context in which they are found.

Activity 1.1 Describe the Ecological Context of the Landscape

Mammal Diversity, Density and Relative Abundance

Line transects and camera trap surveys were conducted along the Tequeje and Undumo Rivers in the Tacana Indigenous Territory between August and October 2006. This field survey also included direct opportunistic observations and records from tracks, scat and other wildlife sign. Thirty species of medium to large sized mammals were registered for this area including the confirmation of the maned wolf (*Chrysocyon brachyurus*) and the marsh deer (*Blastocerus dichotomus*) in the Pampas del Carmen del Emero and San Antonio del Tequeje. Originally, we had scheduled a repeat survey in the Tuichi and Hondo Rivers to demonstrate wildlife recovery within the Madidi protected area. However, due to changes in staff in the National Protected Areas Office in June 2006 this was not possible. Although institutional conditions are now more favorable, further staff changes in October 2006 required that we adapt quickly and switch to survey an area within the Tacana Indigenous Territory that has been the subject of subsistence management efforts with three

Tacana communities over the last five years. Wildlife diversity there was comparable to that at sites with no hunting, suggesting that hunting is likely sustainable. However, as expected, wildlife abundance was markedly lower- although this varied across taxa. The information generated is being incorporated into the ongoing participatory process to develop a specific Wildlife Management, Conservation and Monitoring Plan for the Tacana Indigenous Territory.

Surveys using the same methods are currently underway in the Tambopata River in southern Peru within the Bahuaja-Sonene and Tambopata protected areas. These surveys are being conducted in collaboration with Peruvian colleagues at the University of Cayetano Heredia in Lima and field work will conclude in November 2007.

Medium and Large Mammal Database

We continued updating the Bolivian Medium to Large Mammal National Database using incoming published and grey literature from our library and material and collections from the Museo de Historia Natural Noel Kempff Mercado (MHNNKM), including local reports, researchers' data, management plans, student theses, and our own databases. So far, we have been able to record 6683 data points for Bolivia for a total of 103 medium to large-sized mammals. Once national databases for Camera Trapping and Line Transects are incorporated in the next trimester, this figure is expected to double. The database will also be analyzed to generate range maps to be incorporated in the soon to be completed Bolivian medium to large-sized mammal book. To further contribute to this national effort, we are mentoring a Bolivian undergraduate student, Nohelia Mercado, who is completing her thesis using the location points for the 23 species of primates in Bolivia and modeling potential distributions based on geographical and climatic datasets.

Andean Fox

During FY07, we supported the investigation of a Bolivian Masters thesis student, Andrea Morales, on population abundance and habitat preferences of the Andean fox (*Pseudolopex culpaeus*). This predator is responsible for over 80% of all livestock related human-animal conflicts in the Apolobamba region. Understanding more about this species' habitat preference and abundance is a critical step in developing practical strategies for reducing or halting human-wildlife conflict. Field work has been completed and the thesis is currently in preparation.

Marsh Deer

Similarly, this fiscal year we supported a Bolivian Masters student, Boris Rios-Uzeda, in field work related to a thesis on the distribution, abundance and conservation of marsh deer (*Blastocerus dichotomus*) in northern La Paz Department. This represents only the second attempt at generating abundance data at the national level using standard over flight methodologies (the previous attempt was a Greater Madidi Landscape effort in the Pampas de Heath in 2004); and this thesis has now surveyed all of the more extensive natural grasslands of northern La Paz, as well as some important locations in the vast Beni grasslands. Preliminary results suggest that important populations of marsh deer are present in northern La Paz and that, as suspected, many of the grasslands have neither human activity nor livestock. This confirms the considerable importance of these grasslands, and their potential as conservation areas for this underrepresented biome in Bolivia's protected area system.

Pink River Dolphins

Finally, we facilitated a pink river dolphin (*Inia boliviensis*) survey in the Mamore and Itenez Rivers of Bolivia through financial support to a local NGO partner, FaunAgua. This was part of a WCS-supported regional effort to assess the conservation status of freshwater dolphins in South America. Results of this fieldwork are currently being analyzed for comparison with other surveyed sites across the continent.

Activity 1.2 Research and Monitoring

Andean Condor

We sent the questionnaires for the forthcoming Bi-national Workshop for Andean Condors in Bolivia and Peru to government authorities for formal approval as invited co-hosts of the event, along with local NGO partners ARMONIA and BIOTA in Bolivia, and the Cayetano Heredia University in Peru. This year we also published our Condor census (Appendix A1).

Giant River Otters

This fiscal year we conducted a study on the distribution, relative abundance and density of giant otters in the Undumo and Tequeje streams of the Tacana Indigenous Territory. The undergraduate researcher, Cynthia Jurado, is currently completing a first draft of the thesis for review. Field results confirmed the presence of the species for both streams, although relative abundance is somewhat lower than we had expected. This adds to the growing picture of giant otter population(s) in northern La Paz Department. These data contribute important new information to the national Giant Otter database managed by a local NGO partner, FaunAgua, as well as to the binational conservation planning, monitoring and coordination efforts we are leading in the Greater Madidi Landscape.

Jaguar

The camera trapping surveys in the Tequeje and Undumo River of the Tacana TCO were designed to estimate jaguar abundance for this region of the Greater Madidi Landscape. This study was a substitute for sampling the Tuichi and Hondo River that was postponed because of Madidi protected area administration staff changes by the central government of Bolivia. Importantly, the Tacana TCO effort was conducted in an area of the TCO zoned as a subsistence hunting area and, as such, allowed us to gather information on jaguar, jaguar prey and other wildlife abundance in a different kind of management area. Predictably, the density estimate for this area was the lowest to date for the program in northern La Paz (0.6 individuals per 100km²); and, although wildlife diversity was similar to other sites in the region, relative abundances of some hunted species were noticeably lower than at other sites. These results are being incorporated into the Wildlife Management, Monitoring and Conservation plan for the Tacana TCO that CIPTA and the communities are currently developing with our support.

Currently a camera trapping survey is underway in the Tambopata River in southern Peru within the Bahuaja-Sonene and Tambopata protected areas (see Activity 1.1 above).

Activity 1.3 Ecological Studies of Special Elements

Endemic *Callicebus*

Surveys to describe the distribution of the *Callicebus* endemics continued with additional distribution points for *Callicebus olallae* and *Callicebus modestus*. More importantly, we have made progress in confirming the northern distributional limit for these range-restricted species. Together with the Institute of Molecular Biology at the Universidad Mayor San Andres we are working to describe the genetics of the two endemics; initially with samples from similar species, and with 39 scat samples from *C. olallae* and 51 scat samples from *C. modestus* collected by our field team during directed sampling sessions at strategic field sites in the known distribution of both endemics. Preliminary results suggest that they are indeed two different species. Furthermore, *C. olallae* is apparently the more threatened of the two species, showing worrying signs of a genetic depression. A definitive result from this study will be available by the end of September for subsequent publication.

Field work for an undergraduate thesis study by Heidy Lopez-Strauss on the abundance of the two species in a number of forest patches of the Beni using their calling behavior is now completed, and first drafts of the thesis are currently under revision. Finally, a Bolivian young professional, Jesus Martinez, and a Bolivian undergraduate student, Lesly Lopez, are beginning behavioral ecology studies of *Callicebus olallae* at the La Asunta field site on the Yacuma River, with two groups already habituated for subsequent studies from September onwards.

OBJECTIVE 2: Facilitate community-based natural resource management across the landscape

Activity 2.1 Community-based Natural Resource Management

Fisheries

In FY07, we assumed responsibilities for technical assistance to the community-based monitoring of commercial and subsistence fishing activities in 6 Tacana communities along the Beni River (Carmen del Emero, San Antonio del Tequeje, Esperanza del Enapurera, Cachichira, Altamarani, San Miguel del Bala). This involved a new streamlined design for the monitoring of catch and the development of specific statutes for the Tacana Fishermen's Association including the inclusion of required monitoring of catch. This support extended to technical and administrative assistance for organized supra-community fishing campaigns using the previously established harvest centers with freezer capacity and thereby guaranteeing better prices for fresh fish as opposed to dried and salted fish. One of these fishing campaigns included a first commercialization experience in the city of La Paz as a way to generate higher income with lower overall harvest levels. At the same time we began studies on the degree of mercury contamination from samples of the most commercially important species, and a Bolivian undergraduate student, Sandra Rivera, will be analyzing collected samples in the coming months. Databases of all fishing monitoring activities from CIPTA/WCS and MHNN (National Natural History Museum) have been harmonized and are currently under analysis for publication in 2008.

Ornamental Fish

Laboratory and taxonomic work has increased the number of species recorded from previous fieldwork to 240 fish species belonging to 31 families. We have identified 116 species as having ornamental potential. A professional photographer took high quality images of 60 species with potential market value. The reproductive, feeding and population ecology information for twenty-five of these species suggests that they could be tolerant of regulated commercial harvest.

The results of the investigation regarding ornamental fish diversity and potential in the Tacana TCO was presented to CIPTA and the Tacana communities who approved the report and expressed an interest in developing a management plan for the harvest of ornamental fish in four Tacana communities. Subsequently, we developed a draft experimental harvest plan for the Tacana TCO which has been provisionally approved by CIPTA and is currently being revised before formal submission to the Bolivian government. At the same time, the members of communities interested in ornamental fish harvest met to develop an organizational structure with clearly defined roles and duties. This will become one branch of a larger wildlife management 'Animalucua' Association in the Tacana TCO.

Finally, the number of fish that have been transported with appropriate permits to the UMSA University in La Paz increased and students and professionals at the University have conducted studies on their feeding and reproductive behavior, as well as their suitability as aquarium fish. A Bolivian undergraduate student, Magaly Mendoza, is focusing on the biology of one of the more promising commercial species. Additionally, as a result of these activities we have encouraged the General Biodiversity Directorate (DGB) and the Fishing Directorate to begin discussing and reviewing existing legislation for ornamental fish management.

Native Bees

This year WCS support has concentrated on providing technical, logistical and administrative backstopping to CIPTA in the implementation of two projects with local sources of funding for native bee honey production. WCS has supported the CIPTA native bee program since 2001 and currently the National Program of Sustainable Biocommerce (PNBS) and the PUMA Foundation are supporting the program in 5 Tacana communities: San Pedro, Santa Fe, Tres Hermanos, Santa Rosa de Maravilla and Tumupasha.

The complexity of the institutional requirements has delayed use of the PUMA Foundation budget. Nevertheless, use of the PNBS funds is almost complete and a carpentry workshop has been successfully installed at the CIPTA offices in Tumupasha, with 400 new custom designed hives completed over the last 3 months. These hives are being distributed to participating communities to increase production for the 2008 harvests by supplementing the more than 100 hives already active. Additional legal and organizational support has been important in consolidating the Native Bee Honey Association of the Tacana TCO and clarifying its links to CIPTA and the Tacana TCO, as well as supporting the FY07 honey harvest and commercialization.

In addition, we completed a manual on native bee biology, management and honey harvesting.

Subsistence Hunting

We continued supporting the hunting self monitoring process in the TCO Tacana (hunting records per community and faunal counts in transects), working with 5 adjacent communities along the Beni River which allows for the management of a spatially continuous area. We are also working on subsistence hunting management in a Mosetén-Tsimane community, Asunción del Quiquibey, inside the Pilón Lajas Biosphere Reserve and TCO. We have also continued our support to the San Pedro community's initiative of establishing a "Community Fauna Reserve" through the analysis of wildlife counts performed by community members that revealed relatively high encounter rates of several wildlife species, including peccaries and primate species.

Results from the self-monitoring process have been analyzed using three different sustainability models: the *sustainable harvest model* based on self monitoring harvest data and accompanying density estimates from community line transect efforts; the *capture per unit effort model* based on hours of hunting effort required to capture each hunting species; and the *distance to harvest model* based on geographic locations of each hunting record for each species. These analyses are being compared for each of the most important harvest species and will be published in the next six months. An analysis and publication of the veracity of data from community self-monitoring for hunting is complete and suggests that technical visits need to be regular (at least once a month) in order to guarantee that hunters continue to register hunting activities. As a result of the self monitoring efforts, these communities have decided to reduce the harvest of tapir, spider monkey, howler monkey and marsh deer because of their vulnerability to local over-harvest.

In collaboration with CIPTA, we conducted four workshops with subsets of the 20 Tacana communities to develop a Wildlife Management, Monitoring and Conservation Plan to specifically address the management and conservation of fauna within the TCO Tacana. Results from the wildlife research and especially the wildlife management efforts ongoing within the Tacana TCO provided the backdrop to these workshops where community representatives established priorities for management and conservation, specified the value of wildlife to the TCO, discussed the importance of monitoring in the broader context of natural resource management, and produced four sets of prioritized interventions for an Action Plan. This process will culminate in a TCO-wide supra-communal workshop where the results from the four workshops will be presented, debated and a finalized plan approved for presentation in the General Assembly in early December 2007.

Two undergraduate theses, one by Madeleyne Villa concerning the population structures of two peccary species and one on the hunting activities of a T'simane community by Tania Carafa, are almost complete, and a third by Pamela Carvajal concerning the abundance and characterization of reproductive sites of river turtles has just begun, with field work expected to be completed by the end of September 2007.

Sustainable Harvest of Caiman (*Caiman yacare*) in the TCO Tacana

The Management Plan Proposal for "Sustainable Exploitation of Caiman (*Caiman yacare*) in the TCO Tacana" has been formally approved by the participating Tacana communities, CIPTA, the La Paz Department regional government, CITES, and the DGBAP (Biodiversity and Protected Areas Direction) in the Vice-Ministry of Biodiversity, Forestry and Environment. Therefore, we anticipate the Tacana conducting their first harvest during September and October of 2007. At the same time, the members of communities interested in spectacled caiman harvest met to develop an organizational structure with clearly defined roles and duties. This will become one branch of a larger wildlife management 'Animalucua' Association in the Tacana TCO. It should be noted that this intervention was implemented in response to the expanding harvest of caiman in the Beni Department which has had terrible effects on indigenous organizations and animal populations. CIPTA, with our support, has acted preemptively by developing a management plan which establishes harvest levels based on solid information; but also establishes a common proposal which can mitigate negative impacts on the internal cohesion of the indigenous organization at all levels.

Forestry

We continued to provide technical and institutional support to CIPTA for the management of the various community-based forestry initiatives within the Tacana TCO. Currently there are fourteen community forestry initiatives, with over 200 members, all of whom have approved annual harvest plans and eight of which now have approved sustainable management plans by the Forestry Superintendence. The other six initiatives are in the process of developing management plans, for a total of over 2700 hectares harvested annually and 60,000 hectares under formal management. WCS-funded CIPTA forestry professionals have supported the permit process with the Forestry Superintendence and for some community initiatives have also assisted the fieldwork and document production phases of the management plan development.

In line with the Natural Resource Regulations developed for the Tacana TCO, existing community forestry initiatives are now contributing between 5 and 10% of their profits to CIPTA to support the grass-roots representative organization. This is becoming a significant source of funding for CIPTA, and other natural resource management initiatives such as ecotourism and cacao production will also be contributing in the near future. In addition, with BOLFOR, the CIPTA-WCS team has performed the first audits of community forestry initiatives with some of the Tacana community forestry businesses, representing another step towards increased transparency in natural resource management and setting a precedent for the region.

The CIPTA-WCS team has also worked closely with BOLFOR in the development of proposals for the San Pedro community forestry initiative to allow the community to purchase heavy machinery with a credit system from the Fundación Norte, allowing them to transport logs from felling sites to stockpiles and then load them on to transport lorries. This significantly improves the price of their timber because it avoids the need for additional middlemen, and addresses one of the challenges to community forestry initiatives in the region, progress along the production chain.

Finally, after several years of discussion and work with the Forestry Superintendence, a formal agreement between CIPTA and the Superintendence was developed and signed to improve the response time and transparency with regards to the seizure of illegally harvested timber by third parties within the Tacana TCO and the surrounding area. Through financial support from WCS, CIPTA will provide additional legal support to the Superintendence through a lawyer based in Ixiamas. Tacana communities will benefit by receiving the illegally harvested timber. These measures are urgently required to stem the illegal timber harvest business in the region which is conducted by third parties. Progress towards forestry management areas under formally approved management plans has been significant in the region, but the next step must be to improve the enforcement of measures to reduce illegally extraction. CIPTA and Forestry Superintendence were able to continue coordinating the confiscation of illegally felled timber, chainsaws, guns, machetes, and other equipment in both Tacana TCOs and began legal processes for two specific cases.

Agroforestry

This year, following the conclusion of the Fundación Tropicó cacao production project executed by the IAS consultancy firm, the emphasis for the CIPTA-WCS partnership was to assume the leadership of the cacao production program. As such, an inventory of the equipment left by IAS was performed, as well as an inspection and mapping of all the wild chocolate groves within the Tacana TCO. In addition, organizational assistance to the community productive associations was provided in Carmen del Empero, Macahua, Tumupasha, and Santa Fe. Subsequently, and on the basis of the field trips and chocolate association priorities, a proposal for second-phase financing for the TCO Tacana was developed and will be submitted to different potential funding sources within the next couple of months.

Handicrafts

During FY07, we assisted CIPTA and the Tacana communities in the establishment of the Handicrafts Association 'Aduni' for the TCO Tacana with the participation of eight Tacana communities: San Pedro, Santa Rosa de Maravilla, Tumupasha, San Miguel, Capaina, Bella Altura, Buena Vista, Tres Hermanos and 50 members. In addition, technical support concentrated on restructuring the statutes and business plan for the Tacana Cultural Center in San Buenaventura, the outlet for the Tacana handicrafts; including the specific statutes regarding the Rolling Fund for handicraft people provided by the Fondo Indigena and managed by CIPTA. The Tacana Cultural Center was also updated and redecorated following its expansion last year.

Tourism

Community-based tourism efforts this year concentrated on the San Miguel del Bala lodge through a formal agreement with CIPTA to provide a staff person for administrative support. In addition, we provided legal and technical support for the procurement of a series of requirements as a community business such as the Legal Constitution, Tax registration (NIT), the statutes for the community business, official documentation of the community business partners, and the Municipal business licenses required for the legal operation of business offices in Rurrenabaque. Finally, we provided technical support in the interpretation of a series of cultural trails established in the San Miguel del Bala community. San Miguel del Bala broke even in its first year of operation.

As a result of the commitment of San Miguel del Bala to ecotourism, when the park administration suffered a shock due to political appointments in the park service and the protection activities ground to a halt, San Miguel del Bala and San Jose de Uchupiamonas came together and provided the only control to the Tuichi valley between October and January. Since then, they have been accompanying the Madidi park corps in joint patrols to reestablish the protected area's authority. San Miguel del Bala has recently requested support in the design and implementation of a monitoring system for the ecotourism initiative.

Sustainable Management of Incense

In FY07, we concluded participative management plans with Santa Cruz del Valle Ameno and Pata as well as silvicultural enrichment practices. The silvicultural enrichment was carried out in all three communities and continued to have high (over 90%) survival after 3 months. This is a strategy to recover the productive use of degraded incense plantations, avoiding their transformation to grasslands.

This year we developed our relations with ARIMA (Madidi-Apolo Incense Collector Association), in which 8 communities are participating. The collaboration succeeded in obtaining a PUMA foundation grant and we will provide counterpart funds to this project, focusing our efforts in developing a management plan and a biodiversity monitoring plan. WCS costs are estimated at \$20,000 to leverage over \$120,000 from PUMA. Nevertheless, because of social conflict in Apolo resulting from the land titling process and both local and regional political interests these activities will have to be implemented in the next fiscal year pending new agreements with the park and local authorities.

Domestic Animal Management and Fauna's Health in the TCO Tacana

On the basis of a diagnosis of domestic animal health conditions in three TCO Tacana communities and a baseline of domestic and wildlife animal health status inside the TCO Tacana, a proposal for an Animal Epidemiology Monitoring Network for the TCO Tacana was developed and approved at the CIPTA General Assembly in December 2006. At the same event, community veterinary medicine kits were also presented to each of the communities within the training program.

In early 2007, at the request of CIPTA, we began participatory diagnostics in six additional Tacana communities to determine the sanitary problems and management needs of domestic animals in the Tacana TCO. Subsequently, theoretical and practical training modules were provided to these communities. In June 2007 we, together with CIPTA, implemented the family registry of domestic animal management across the 20 communities of the Tacana TCO. Finally, technical support for the implementation of the Cattle ranching projects in Carmen del Emero and Santa Fé continued and expanded to include Carmen Pecha and Macahua.

Vicuña

We developed the vicuña parasitological research program in the ANMIN Apolobamba and completed a preliminary diagnostic of the health and diseases of vicuñas in the ANMIN Apolobamba. Critically, this evaluation took an integrated approach and also evaluated domestic livestock health and diseases in the same communities (see activity below). To put things in perspective, the Apolobamba plains are home to around 10,500 wild vicunas and around 100,000 domestic camelids and sheep.

Activity 2.2 Community Mitigation of Human-Animal Conflicts

As part of our support to the protected area, we continue to work on human-wildlife conflict mitigation in the ANMIN Apolobamba. We focus on quantifying and characterizing predation events affecting camelid ranchers, and then apply and evaluate different non-lethal interventions to diminish conflicts between humans and wildlife. We are now working with seven communities on these issues: Medallani, Cañuhuma, Caalaya, Curva, Lagunillas, Puyo Puyo and Nube Pampa. Results from this program are currently under analysis for future publication; however, results indicate that the non-lethal human-animal conflict mitigation methods designed and employed by the five communities have greatly reduced livestock losses (80-90% reduction) and that the communities are pleased with the results. These methods have included bells for livestock and the implementation of simple corrals during the night. In addition, the communities are employing traditional wildlife drives immediately after the alpaca calving season to drive Andean foxes away from the calving area during this critical period of wildlife-related livestock loss. This method has proved effective and, interestingly, requires a level of inter-community organization that is rarely observed in other activities.

At the same time, and in coordination with the Apolobamba protected area administration, WCS-Field Veterinary Program staff has been working with communities to produce assessments of livestock health including laboratory analyses identifying diseases in the domestic camelid and sheep populations. These diagnostics have provided the basis for planning and applying solutions for improved livestock management, and for appropriate training for improved livestock health and monitoring of livestock management activities. For example, 14 local people have been trained in the management and health of domestic camelids, diagnosing common diseases, and the use of traditional medicinal plants as therapeutic alternatives.

Activity 2.3 Land Tenure and Territorial Planning

Tacana and CIPTA

The demarcation and posting of the limits of the Tacana TCO-I, prioritized in 2005, was completed this year with signs on stones or in trees placed every 100m along over 150km of the boundary of the TCO. In addition, CIPTA met with representatives of the local campesino federation, FESPAI, and reached agreements regarding proposed allocation of remaining state owned land in the original Tacana TCO-I claimed area. CIPTA ceded some of the claimed areas to FESPAI and in return FESPAI agreed to facilitate the compensation titling process and respect TCO boundaries. We are also awaiting the formal approval of the official document “Plan de Ordenamiento Predial” (POP or Land Organization Plan) for the TCO Tacana-I from the Agriculture Ministry of the Bolivian government.

In the Tacana TCO-II, WCS support to CIPTA allowed the completion of the geo-referencing field campaign for the overall territorial claim, and legal support resulted in the official government resolution of the area claimed as an area that will undergo a land titling process using the SAN-TCO land titling model. In addition, the area has been awaiting progress in terms of land transactions in anticipation of the official land titling process, and the Bolivian government’s land titling agency INRA (Instituto Nacional de Reforma Agraria) has requested that the Ministry of Indigenous Affairs begin the formal and standardized studies to determine the amount of land required by the four Tacana communities in the Tacana TCO-II.

Meanwhile, using the methodologies previously applied in the TCO Tacana-I we completed the sustainable development strategy for the TCO Tacana-II. The strategy has been approved by the communities and by CIPTA, and the final draft is expected to be published in the next couple of months. The strategy also includes the micro-zoning of the TCO Tacana-II claim, which will have to be adapted following the completion of the land titling process. However, CIPTA has negotiated with the Ministry of Indigenous Affairs to ensure that these documents and maps form the basis of the formal spatial needs study, and government officials would be charged with verifying the information therein in the field as opposed to generating similar information for the same communities.

Strengthening of Environmental Management with the Lecos Larecaja Indigenous People

This year we began implementing the Leco Indigenous Community Environmental Management Strategy by beginning the process of developing their territorial plan (POP) and internal natural resource use regulations. We continued supporting the land titling process by lending support through a lawyer to support the process. As a result of this support, Polygon 1 (64,424 has) has been signed by the Bolivian president and Polygon 2 (24,110 has) is awaiting final signature by the president. Field evaluations for Polygon 6 have been delayed by political conflicts and are only just beginning.

Strengthening of Environmental Management with the Lecos Apolo Indigenous People

This year we also began to work with the Lecos Apolo indigenous people, which is critical because their territorial claim overlaps with over 70% of the southern part of the Madidi Protected Area. They have obtained the title of the first polygon of their TCO (269,595 ha) and we are currently supporting the development of a Strategic and Territorial Plan which is compatible both with the Madidi Management Plan and the Apolo Municipal Plan.

Communal Use zoning maps of the PILCOL & CIPLA communities

Communal Use zoning maps were carried out for developing the Sustainable Development Strategies for the Lecos communities and their TCO claims in Guanay (PILCOL) and Apolo (CIPLA). We organized community workshops using “Mapas Parlantes” (“Talking Maps” – maps where people identify and draw the areas of distinct land uses). The field team, with community members, defined the following uses: agricultural, forestry, hunting area, conflict areas, non-timber forest, cattle ranching, historical/cultural, lagoons and flooded areas, fishing, salitral (salt deposits), third parties (not locals), and tourism. These maps were produced for 34 communities in Guanay and 17 communities in Apolo.

Support CPILAP- the La Paz Indigenous People’s Association

In FY07 we also developed a work plan with CPILAP to provide support to their initiatives regarding the participation of indigenous people in the protected area service and integrated territorial management. We have focused on supporting the development of a proposal for co-management of the Madidi protected area, one of the main inputs used by SERNAP to establish their position regarding differentiated participation mechanisms for actors, both private and public, and both inside and outside the protected area. Nevertheless, this proposal also includes particularly active participation by local communities with traditional rights over the protected area.

Additionally, we supported CPILAP in starting a process to develop a consensus position with all its member territorial organizations regarding the projected hydrocarbon exploitation in Northern La Paz.

Activity 2.4 Environmental Education

Apart from the publications listed at the end of this report (in Sections IIIc and IIId), this year we also participated in several international events:

- Rob Wallace, March 2007, V Bolivian Biology Congress, Santa Cruz de la Sierra, Bolivia
- Guido Ayala, April 2007, Lowland Tapir Action Plan, Sao Paolo, Brazil
- Ivan Arnold, Oscar Loayza and Lilian Painter, September 19-21 2006 El Proceso de Construcción de Gobernancia del Parque Nacional y Área Natural de Manejo Integrado Madidi; Gobernabilidad y Gobernanza de los territorios en América Latina, Cochabamba, Bolivia
- Lilian Painter, June 2007 WCS Institute Meeting on Protected Areas and Local Livelihoods, White Oaks Plantation, Florida USA

We have also begun conversations with Jonathan Palmer in NY regarding the development of a web site for the WCS Bolivia program and the transfer of knowledge that we have gained in the design and implementation of an information system for the program. Indeed, much of the information on the web site will be based on sections of our internal information system.

OBJECTIVE 3: Strengthen institutional capacity in natural resource conservation and management.

Activity 3.1 SERNAP Institutional Strengthening

Based on the case study concluded in 2004, we developed a Conflict Management Strategy and Conflict Management System during the last fiscal year. However, because of changes in the SERNAP Director in May 2006 and then again in October 2006, we had to renew efforts to obtain buy-in for this strategy again this fiscal year. The current administration has requested some adjustments to the database, which we will finalize by August 2007. Unfortunately, the protected area service is seriously debilitated at the moment, though it shows some signs of slow recovery. In response to this uncertainty in the central office, we have maintained support focusing on critical aspects to maintain minimum functionality. This support has been directed to the monitoring office, so that they could keep on Roberto Daza during a six month transition to allow the time necessary for government procedures for contracting personnel. During these six months, Roberto Daza provided the main technical support to SERNAP for reviewing environmental license requests and research permits and implementing monitoring programs in the 22 national protected areas. With regard to our specific landscape, he participated in reviewing environmental license requests of mining companies in Apolobamba, and represented SERNAP in the Ministry of Environment evaluations of the illegal roads being opened in Madidi protected area and in supporting the implementation of the integral monitoring systems in Madidi and Pilon Lajas.

Similarly, we provided six months of support for SERNAP to retain Jaime Vazquez in the Planning Department during the transition time necessary for contracting government personnel. During these six months he monitored the management effectiveness of the 22 national protected areas, using an adapted version of TNC's scorecards, called MEMS (Management Effectiveness Monitoring System).

Activity 3.2 Protected Area Support and Staff Training

During this fiscal year, it was not possible to continue supporting the Madidi administration with technical administrative personnel: Mr. Jorge Peláez as the technical link coordinator; Mr. Tomás Silicuana as the incense technician; Juan Carlos Poma as the administrative assistant; Mr. Ramiro Cuevas and Mr. Rolando Cuevas as natural resource management field assistants. Changes in the protected area director, and later the lack of a director, made it impossible to continue with this support. Nevertheless, from February on, we were again able to coordinate with the head of the park guard corps and, for the last couple of months of the fiscal year, with the newly appointed park director. Our support has been crucial in helping prevent illegal settlements in the upper Tuichi valleys by providing resources for control and vigilance activities in this area, with the participation of local community members interested in safeguarding their resources; in particular, the Tacana and San Jose de Uchupiamonas TCOs and Ixiamas municipal authorities.

As reported in last year's Annual Report, during the March-June 2006 trimester, we had developed the call for proposals, the application format and the selection criteria for small community natural resource management project requests in Apolo, which were initially to be implemented in conjunction with the protected area, but were later implemented in conjunction with the Apolo local government. In June 2006, we made an evaluation of the projects in collaboration with representatives from the Regional Administration Committee, selecting the following projects: agroforestry management for doubling the incense plantations in Santa Cruz del Valle Ameno; management and commercialization of orchids in Virgen del Rosario; management, transformation

and commercialization of jatata in Santo Domingo and small animal production in Sarayoj. During FY07, we dismissed the orchid project in Virgen del Rosario after an evaluation of its possible economic sustainability. This criteria, as well as internal strife in the Sarayoj community, caused us to halt the small animal project there as well. We have since halted the idea of calls for proposals in Apolo because the organizational structure of the community organizations does not allow for transparent applications. We are currently focusing only on incense, jatata and an evaluation of the possibility for fish production in association with the Institute of Ecology, PUMA Foundation and the community of Santa Catalina, leveraging \$87,700 counterpart funds from PUMA with a \$5,000 WCS investment.

This year we supported the application and participation of Rosario Barradas Cuqui, indigenous female leader of San Jose de Uchupiamonas, and Marcos Uzquiano Howard, one of the best park guards of Madidi Protected Area, in the Colorado State University Wildlands and Protected Area Management Course.

Additionally, we have been working since February to reactivate the monitoring programs of Pilon Lajas and Madidi; this has required training events in Pilon Lajas, where the program wasn't established. Finally, we have supported the participation of additional local actors in the Tinker Management Committee training program.

This year we also focused on supporting the distribution of the two publications and associated PowerPoint presentations developed with the Conservation Strategy Fund (CSF) on the economic benefits from the protected area to the region, and another one valuing the economic feasibility of the proposed road Azariamas-Tumupasa.

In FY07, we also concluded the revisions of the Indigenous Territory and Biosphere Reserve of the Pilon Lajas Management Plan and Life Plan developed through resources of a subgrant from Conservation International.

The Madidi Management Plan was finally approved by the Local Management Committee in August 2007 after three years of negotiations. Although implementation of this plan has been ongoing, formal approval will allow it to be published and will permit the Madidi Director to formally frame the activities of all institutions working in the protected area in the context of the approved plan.

Activity 3.3 Wildlife Management Program (Institute of Ecology)

Our agreement with the Institute of Ecology continues, with thirteen undergraduate theses: Hugo Aranibar– Cracid distribution and abundance in northern La Paz Department; Diego Romero- White-lipped peccary abundance; Paola de la Torre- *Callicebus aureipalatii* behavior; Heidy Lopez- *Callicebus olallae* and *C. modestus* abundance; Cynthia Jurado- Giant River Otter abundance; Lesly Lopez- *Callicebus olallae* behavior; Nohelia Mercado- Primate distribution and conservation priorities for Bolivia; Tania Carafa- Hunting management in the Pilón Lajas Biosphere Reserve; Madeleine Villa- Peccary population structure in the Tacana TCO; Bader Pena– Andean bear distribution in southern La Paz Department; Pamela Carvajal– River turtle distribution and abundance in the Beni River; Magaly Mendoza– Biology and ecology of ornamental fish in the Tacana TCO; and Sandra Rivera– Mercury levels in commercial fish and spectacled caiman in the Tacana TCO. We are also supporting seven volunteer research projects for undergraduate interns that were supported last year: Oswaldo Palabral & Oscar Alvarez- Andean bear *Tremarctos ornatus* diet through scat analysis; María Viscarra- Puma (*Puma concolor*) diet through scat analysis; Omar

Torricono- small felid dietary analysis using scats; Mariana Da Silva- Jaguar (*Panthera onca*) diet through scat analysis; Zulia Porcel & Beatriz Zapata- Andean fox (*Lycalopex culpaeus*) diet through scat analysis; Bertha Ayma & Sandra Rivera- species identification of two high Andean deer (*Odocoileus virginianus* & *Hippocamelus antisensis*) through scat measurements; and Isabel Loza & Maritza Cornejo- Taruka (*Hippocamelus antisensis*) diet through scat analysis. We are also supporting three Masters Theses: Boris Rios-Uzeda (Marsh deer abundance and conservation), Andrea Morales (Andean fox abundance) and Alicia Kuroiwa (Jaguar prey abundance using standardized camera trapping frequencies). Most of these theses and student projects will be completed over the next six months, and we are currently evaluating new student projects.

We helped organize the “Journal Club” (a requirement of the new Biology Course class curriculum of the Universidad de San Andrés), where several WCS technical staff support the academic development of new students. There have been eight sessions to date by the WCS team, on: Radio-telemetry, Line Transects & DISTANCE, Camera Trapping, Ecosystem Health, Human-Animal Conflict, Community-based Wildlife Management, GIS and Conservation Planning, and Adaptive Management. We are also supporting this Biology Course by providing theme ideas for thesis dissertations. Invited lectures for the Masters Course at UMSA include Crocodylian Management and Conservation Planning using Focal Species.

Activity 3.4 Monitoring Strategy Implementation

In the Greater Madidi Landscape Program, our monitoring priorities are for individual management units and local partners within the Landscape. To this end, we are working with the Madidi and Pilon Lajas protected areas, implementing monitoring systems through the park guards. This fiscal year in Pilon Lajas, we defined 15 wildlife species and a series of human activities to be included as priorities in monitoring efforts.

We are continuing with the process of developing our monitoring database to respond to the intervention-specific conceptual models previously developed by the Program. Stress has been placed on identifying ‘multiple’ and ‘realistic’ indicators so that we can triangulate trends. At the moment, the Monitoring Framework does not include those indicators for which the monitoring will be too expensive. This will get much tougher as we get to the *Direct Threat* and *Conservation Objective* portions of the models. Within the next six months, a team will retroactively compile information for all possible indicators (as identified by the technical team) over the seven-year history of the Program.

In the context of the Madidi-Manu Conservation Complex program funded by ABCI-USAID, we are also beginning to build inter-institutional relationships with SERNAP, INRENA, CPILAP and other NGOs and local actors such as G-MAP to facilitate comprehensive satellite-based surveillance programs for appropriate threats such as habitat loss, fire and colonization processes.

Activity 3.5 CIPTA Institutional Strengthening

The project provided additional administrative strengthening to CIPTA by developing a plan for evolving the CIPTA-WCS partnership to one involving formal sub-agreements with accompanying budgets and work plans for the FY08 session and developing the accounting plan for CIPTA that takes into account all CIPTA funds and those received from differing donors. Training continued for 3 community project administrators and the 2 CIPTA administration assistants who are responsible for dealing with the forestry groups. The new phase of the partnership began in July 2007 and will be closely monitored by WCS technical and administrative staff to help ensure

seamless implementation. This will broaden the financial portfolio of CIPTA, enabling them to access additional and more significant sources of funding in the future.

The legal team continued to provide backstop support during a series of conflicts in the Tacana TCO-I and the Tacana TCO-II claim. This included the process against Mr. Silverio Murachev, by CIPTA and the Santa Rosa de Maravilla community, for the shooting and wounding of a community member who caught him extracting wood illegally. The technical team also helped CIPTA and AOS in the design of the Communication Plan for CIPTA, using the plan from the Tacana community radio as the basis. WCS staff also supported CIPTA in the process of securing funding from Canadian AID and Dutch AID. A final draft of the brochure regarding CIPTA's territorial administration has been finalized and is currently at the printers.

The WCS program provided partial financing for Celin Quenevo, the President of CIPTA, to attend and complete a five month course on Indigenous Rights for indigenous leaders held at the Simón Bolívar University in Quito, Ecuador. CIPTA has participated in a series of national and international events to communicate the experience they have gained in Indigenous Territory Management over the last seven years. As a result, the CIPTA experience is increasingly recognized as one of the most impressive, integral and democratic in Bolivia and beyond. The Vice Ministry of Land is planning to further promote the experience over the coming months.

WCS also financed the Annual CIPTA Assembly in Santa Rosa de Maravilla in December 2006. At this meeting, CIPTA-WCS partnership expenditures were once again presented to the community representatives and unanimously approved, as were our technical reports. This year, specific regulations were developed for commercial fishing and spectacled caiman management that depart from the previously developed overall Natural Resource Access and Use Regulations Specific regulations for the Tacana TCO-I. Finally, plans and statutes for a technical branch for CIPTA are currently being finalized and will be completed in time for formal approval at the General Assembly in December 2007.

Activity 3.6 Local Government Environmental Planning and Management Support

Development of Apolo's Territorial Legalization and Management Plan (PMOT)

In FY07 we successfully conducted a GIS training course for the Apolo municipality staff, the park guards of Madidi based in Apolo, CIPLA and professionals based in Apolo. Further work with the Municipal Authorities has been difficult because of confrontations between several local actors including illegal timber extractors, urban populations, campesinos and indigenous people.

Development of the Alto Madidi Ecolodge

This year we worked with the Ixiamas Municipality to finalize formal development and architectural plans for the construction of an ecolodge in the 37,000 hectare Municipal Tourism Reserve declared last year by Ixiamas. This tourist reserve was established within the area defined in the Madidi Management Plan as a priority for conservation actions due to the need for protecting both sides of the Madidi River. The environmental permits required to construct the lodge are currently in the final stages of approval. Meanwhile, we have conducted a series of training exercises for the Ixiamas population in aspects of tourism management such as administration, guiding and cookery.

In addition, we have developed a Management Plan for the Tourism Reserve that is centered on coordination with the Madidi protected area staff, and this process and document are in the final stages of approval. Proposals for financial support to the Reserve, and the Madidi Jaguar Lodge within the Reserve, have also been developed for submission to new Foundations, and also to TICOS as a potential carbon offset project. These proposals are currently under consideration and we expect decisions within the next three months.

Conservation Opportunity Analysis for Beni and La Paz Departments

With a grant from Conservation International, and in partnership with the regional governments and the Bolivian NGO NATIVA (in the case of La Paz), we are conducting an analysis of conservation possibilities in Beni and La Paz Departments. To date, we have identified 11 potential conservation land management units in these two Departments. The analysis was based on the Biological Landscapes for a suite of regionally important wildlife species, the overall conservation status of the Departments, and a recently completed for the National Protected Area System. This analysis is now in the review phase and, together with the regional governments, we will be selecting priorities and discussing possible action plans for those areas identified as immediate and politically expedient possibilities.

Mancomunidad de Municipios & Fundación Amigos del Madidi

In FY07, we began collaborating with two new institutions in the landscape: the Association of Municipalities of Northern La Paz (Mancomunidad del Norte Paceno) which includes Tacacoma, Guanay, Mapiri, Teoponte, Pelechuco, Apolo, San Buenaventura and Ixiamas municipalities; and the Friends of Madidi Foundation (Fundación Amigos del Madidi). With the Mancomunidad we are lending support for the development of a strategic plan for the northern La Paz region. This provides an opportunity to incorporate a landscape vision into the local government territorial and strategic plans, allowing the overlap of wildlife and conservation priorities (Conservation Landscape) with human development requirements (Human Landscape). The Fundación Amigos del Madidi is a new local NGO which focuses on promoting debate and discussion regarding development and conservation in the municipalities overlapping with Madidi Protected Area. It is important to strengthen their capacity because of the absence of another local organization which can speak to the urban population; International or La Paz-based organizations do not have the local legitimacy or representative condition to promote this dialogue.

OBJECTIVE 4: Promote the development of national policies that support the landscape conservation approach.

Activity 4.1 Policy Support

Because of changes in SERNAP and the Vice Ministry this fiscal year, we have been unable to advance on many of the themes developed over the previous two years such as reviewing the final drafts of a series of regulations relating to biodiversity conservation and natural resource management.

This year, much of our support to the national government on policy issues has been centered on the WCS-FVP program regarding wild bird health and avian influenza. This has included support for field efforts gathering data on wild bird health, such as the flamingo capture program in the Eduardo Avaroa Reserve protected area in southern Potosi Department. WCS is an invited member of the technical committee for the National Plan for the Prevention and Control of Avian Influenza and Pandemic Influenza, and co-organized the national workshop to develop the National Plan for Monitoring Avian Influenza in Wild Birds.

In addition, the WCS-FVP program has supported the relevant government office, SENASAG, in increasing the wildlife and domestic animal health monitoring capacity of indigenous communities. This program has also included training opportunities for field veterinarians and veterinarians from the Municipal Zoos of La Paz and Santa Cruz.

Activity 4.2 Financing Mechanisms

In FY07, efforts have concentrated on strengthening a series of local partners (CIPTA, PILCOL, CIPLA, CPILAP, and the Apolo and Ixiamas municipalities and communities) so that they can access a series of local and international funding sources (see details described in various activities above). This support has included the strengthening of proposal development capabilities and the installation of critically needed administrative capacity, particularly within the indigenous organizations. We have also further developed strategic relationships with local sources of financing for community natural resource management efforts; in particular PUMA, but also Ayuda Obrera Suiza, Canadian AID, Dutch AID, National Program for Biocommerce, and the Norwegian Rainforest Alliance. This support ranges from promoting funding possibilities with community natural resource management initiatives and assisting with applications, to informing local funding sources of the realities and challenges that community natural resource management groups are facing in the region.

Activity 4.3 Threats Assessment Working Group

Corredor del Norte (Northern Corridor)

We maintained contact with relevant authorities, this time with ABC, the new roads development department of the Bolivian government; providing information to be included within the specific environmental mitigation strategies for differing sections of the road.

OBJECTIVE 5: Elaborate a participative, integrated landscape conservation action plan.

Activity 5.1 Integrated Landscape Conservation Action Plan and Stakeholder Workshops

In FY07, we continued the development of a bi-national second iteration of the landscape species analysis with INRENA and SERNAP during a second workshop in Puerto Maldonado and coordination with members of the Fundación Cayetano Heredia in Lima, Peru. Seven Landscape Species have been selected (Andean condor, vicuna, Andean bear, military macaw, jaguar, giant otter, maned wolf) and Biological Landscapes (habitat suitability models) have been produced for each species. In addition, we developed a preliminary Human Landscape for the bi-national area and reviewed our progress at the second workshop. Over the next six months we will finalize the Human Landscape, intersect this with the Biological Landscapes for each species and produce Conservation Landscapes accordingly. In addition, we will produce conceptual models for the bi-national area and work towards a comprehensive monitoring strategy using associated monitoring frameworks. This work is supported by the Fundación Cayetano Heredia, including a subgrant to support Alicia Kuroiwa.

We are finalizing the editing of the memoirs of the “II Meeting of Natural Resources Management Initiatives by Local Communities of Northern La Paz”, which was held in San Buenaventura in August 2006 with over 100 participants representing more than 30 communal or supra-communal initiatives. The meeting developed specific actions for an action plan based on the initial results from the First Meeting and also focused on making recommendations to the Bolivian government

regarding the tax and tributary system that should be applied to community business initiatives that are based on natural resource management. The memoirs of this meeting are currently in the last phase of printing. In addition, we are working on the proposal and methodology for the III Meeting to be carried out this October.

OBJECTIVE 6: New York Coordination Unit Strategy: Guide the design and testing of wildlife-focused planning, implementation, and evaluation tools for effective conservation at a landscape scale, and promote learning across sites and beyond.

The NY-based Coordination Unit (CU) of the Living Landscapes Program (LLP) is designed to develop and test wildlife-focused, landscape-scale approaches to biological conservation across multiple sites. To ensure the widespread utility of these new conservation approaches, the program is testing them within landscapes or seascapes that encompass a diverse array of ecological features, land-uses, resource-use issues, and jurisdictional arrangements. The CU is charged with designing and managing the program to develop new approaches in close collaboration with WCS field-based staff, to facilitate and harmonize testing and implementation among these core sites, and to capture the synergistic benefits of their diverse experiences. It guides development of landscape-scale strategies, tools and techniques; assists in the design and development of cost-effective intervention and monitoring programs at these sites; promotes cross-site learning; and ensures communication among the sites, WCS staff (central and field), USAID (DC and missions), and the larger conservation community.

During FY07, the priority for the Coordination Unit continued to be working with field sites to promote adoption of best-practice tools for effective conservation at landscape scales. These efforts culminated at the LLP Annual meeting which took place in the Adirondacks, NY over May 2-8, 2007. During this meeting, all WCS/GCP funded and WCS/LLP volunteer sites presented and discussed their use of LLP/GCP tools in the development of their conservation landscapes. During this year we continued to refine and simplify the process for selecting landscape species, including revision of the software decision-support tool. Though the software uses context sensitive help, and is designed to be usable without training, we decided to further facilitate field adoption of landscape species selection (i.e., conservation target selection) by finalizing and disseminating a 'how to' manual (Appendix B1) to accompany the selection software. In addition, we continued working with our field staff and NY program and accounting staff to explore how best to integrate project strategic planning elements, such as conceptual models and monitoring frameworks, into annual operations planning and reporting.

Activity 6.1 Provide technical assistance to site-based conservation

Members of the NY Coordination Unit worked closely with field sites to provide targeted technical input (punctual advice and informal and formal training in strategic conservation planning, monitoring the effectiveness of conservation actions, geographic and quantitative analysis, and specific conservation issues) throughout the year. In a number of cases, this involved trips to sites as reported in the previous sections of this and the other site-specific reports: Madidi (Bolivia), Maya (Guatemala), Glovers (Belize), and Eastern Steppe (Mongolia). As our LLP/GCP sites are at different stages of development or evolution, they have warranted (and requested) different levels of NY coordination unit assistance during this reporting period. This is to be expected and reflects our adaptive management approach to conservation investment.

Overall, LLP staff supported the 4 four sites through the following process:

- **Finalization of each site's suite of Landscape Species.** LLP-NY support included providing guidance on the candidate species and other data required for the target selection process, technical support for the software used to select Landscape Species, and review of draft Landscape Species suites in order to assist field staff in choosing the most appropriate conservation targets for their site.
- **Development of quantitative population targets for Landscape Species.** LLP-NY provided technical support and helped gather information from the literature. Setting appropriate population targets is pivotal to the strategic application of the Landscape Species Approach (LSA).
- **Creating draft Biological, Human, and Conservation Landscapes or Seascapes for Landscape/Seascape Species.** LLP-NY led on the development of several models and provided technical support to field staff to ensure the successful development of these models that are at the core of the LSA.

For example, the Eastern Steppe of Mongolia is the youngest LLP/GCP site. This year, Dr. Amanda Fine and her Mongolian team made huge strides in completing steps of WCS's conservation planning methodology, the Landscape Species Approach. LLP staff from New York provided substantial support and guidance to the Mongolia staff. Presentation and review of the results took place during a stakeholder workshop in Ulaanbaatar on October 3, 2006. During visits to Mongolia, Drs. Karl Didier and Eric Sanderson also participated in several meetings and discussions with The Nature Conservancy and the World Wide Fund for Nature (WWF-Mongolia and US) about collaborative conservation planning and implementation in the Eastern Steppe, now known as the Zuun Bus collaboration. Dr. Didier has also provided some spatial information and technical support to TNC as they proceeded through their conservation planning framework in Mongolia. Dr. Samantha Strindberg also assisted field staff in Mongolia to develop a sampling design and field protocol to collect information in order to obtain the first empirically based estimates of population size, distribution, and habitat use of the critically threatened Siberian marmot, a Landscape Species, across the Eastern Steppe.

Another highlight was that Janet Gibson and her team at the Glover's Reef Living Seascape (GRLS) made great progress this year with the seascape models for all seven of their Seascapes Species: hawksbill turtle, Nassau grouper, Caribbean reef shark, star coral, queen conch, *Diadema*, and osprey. Dr. Samantha Strindberg of LLP-NY traveled to Belize City in February 2007 to assist the Belize field team in refining their potential biological seascape and human threat seascape models and to create new models for current abundance, target abundance, conservation impact and benefit-cost for all species. This information is a key element of the Conservation Strategy document for GRLS.

Activity 6.2 Design, implementation, and testing of decision support tools

Activity 6.2.1 Living Landscapes Program technical manuals

In FY07, we finalized and disseminated one technical manual, *Technical Manual 5: A quick reference guide to the Landscape Selection Software version 2.1* (Appendix B1), and had the LLP manuals and bulletins that were completed in FY06 translated into Spanish and French (Appendices B2-B9; Technical Manuals 3-6 in Spanish are currently being produced); these will be printed and will also be available online in PDF format. These publications are currently being disseminated to WCS projects, partners (government, NGO and local), and other conservation and development

colleagues. The manuals are designed to provide clear and practical instructions to field practitioners on using a number of conservation tools. We also updated two of the older, English-language Technical Manuals (Appendices B10 and B11).

Activity 6.2.2 Landscape Species Approach progress

6.2.2.1 Building Conservation Landscapes and Seascapes

In FY07, LLP staff in New York finalized methods for building conservation landscapes and seascapes, based on the experience of our pilot implementation at GCP and LLP field sites. We drafted a Technical Manual on combining biological and threats landscapes into conservation landscapes, that will provide field practitioners with guidance as to where and what actions would have the greatest positive impact on wildlife conservation and natural resources management. We then worked with the field sites to pilot the use of the draft manual as a decision-support tool. Feedback from these pilot sites is helping us refine and revise the manual before it is finalized for publication as a hard copy and as a PDF on our website.

Substantial progress has been made during the year in the finalization and implementation of tools that are part of the Landscape Species Approach, including:

- **Selecting Landscapes Species.** Drs. Strindberg and Didier, with assistance from other LLP-NY staff, produced written guidelines as an addendum to the already published software that guides users through the process of selecting Landscape Species. The guidelines were published as a Living Landscapes Technical Manual (Appendix B1), which is provided online on the program's website. Over the past year, this decision-support tool was used by the Eastern Steppe of Mongolia and Madidi projects.
- **Setting Population Target Levels.** Dr. Sanderson with assistance from other LLP-NY staff finalized guidelines for setting quantitative Population Levels for conservation targets (e.g., Landscape Species). Guidelines were published as a scientific paper in the November 2006 issue of *BioScience* (Appendix B12). Over the past year, this tool was used extensively by all four GCP sites (the Eastern Steppe of Mongolia, Madidi, Glover's Reef, and Maya Biosphere Reserve projects), as well as by at least 7 other WCS projects (e.g., Western Forest Complex, Thailand; Northern Plains, Cambodia).
- **Building Biological and Human Landscapes.** Dr. Didier, with assistance from other LLP-NY staff, finalized guidelines for creating Biological and Human Landscapes, which were published as a LLP Technical Manual in FY06. Dr. Didier also began production of a scientific paper to overview these tools, which will be completed and submitted for review during FY08. Over the past year, these tools were used extensively by the four GCP sites as well as by at least 7 other WCS projects (e.g., San Guillermo, Argentina; Adirondacks, USA; Ruaha, Tanzania).
- **Building Conservation Landscapes.** Drs. Didier and Sanderson, along with assistance from other LLP-NY staff, finalized guidelines for creating Conservation Landscapes (i.e., maps of the possible impact of conservation action). Dr. Didier began development of a LLP Technical Manual on the tool, which will be published in FY08. Over the past year, this tool was used extensively by all four GCP sites, as well as by at least 7 other WCS projects (e.g., Nouabalé-Ndoki, Congo; Coastal Patagonia, Argentina; Nam Kading, Lao P.D.R.).

- **Monitoring Frameworks.** The Glover’s Reef Living Seascape (GRLS) team has been dynamically updating and using their monitoring framework to effectively track their conservation actions, the ongoing threats in their landscape and the status of their conservation targets. They view it as a living document that allows them to see changes in the status of their indicators over time. This provides them with an incredible sense of both the ongoing challenges that they face and the progress they have made in conserving the GRLS. Similarly, like other LLP sites, the team in Guatemala is evaluating the effectiveness of their conservation actions in part by monitoring the status of their Landscape Species. That said, monitoring highly elusive species scattered across vast geographic areas is a huge challenge and Dr. Samantha Strindberg of LLP-NY provided technical support for the design and analysis of this type of monitoring. The second two-week LLP/WCS workshop on “Statistical Design and Analysis of Biological Monitoring Programs for Conservation Management”, designed and led by Dr. Samantha Strindberg, significantly advanced the access of WCS field staff to the technical knowledge that they need to monitor elusive species. WCS field staff in attendance included Rony Garcia Anleu from Guatemala, along with Esteban Suárez (Yasuni-Napo Landscape, Ecuador) and Hugo Rainey (Ndoki-Likouala Landscape, Congo). Both the Ecuadorian and Congolese landscape sites were supported by the first round of USAID/GCP funding and are continuing to apply the tools and build upon the success of their previous conservation work.

Activity 6.2.3 Integrating strategic planning and project management

LLP-NY staff have continued to work with our field sites and WCS NY operations (i.e., regional program and accounting staff) to devise ways to integrate strategic planning with operations planning and reporting. LLP program staff contributed substantially during our WCS organization-wide strategic planning process. Drs. Amy Vedder and David Wilkie were both extremely active members of the Strategic Planning and Review Coordination (SPARC) committee – a group charged with revising the operations processes and protocols within WCS’s international program. LLP staff was also key sources of technical input into our new organizational strategic plan, lead by Dr. Craig Groves. As a result of our efforts, LLP/GCP developed tools are now to be integrated into annual work planning, budgeting and reporting, starting in the FY09 budget cycle (i.e., December 2008). WCS will be the first international conservation NGO to integrate site-based strategic planning into annual operations planning. This fills a major gap in the adaptive management infrastructure that we need to truly measure our conservation effectiveness.

Activity 6.3 Catalyze cross-site and cross-organizational learning, and communication

Activity 6.3.1 Annual meeting, cross-site and cross-organizational learning

Annual meeting of WCS/LLP staff

LLP organized and hosted an annual meeting to bring together WCS/GCP and LLP field site staff to share and capture lessons learned in the implementation of threats-based approaches to biodiversity conservation at landscape scales. The meeting took place in the Adirondacks, NY from May 2-8, 2007. Twenty WCS staff attended from ten field sites, including seven staff from the current USAID-funded sites. In the past these meetings have proven enormously fruitful for our field staff, as they provide a forum for serious, practical discussions about the challenges they face in effecting conservation in large, complex landscapes. GCP support to LLP offers us one of the few opportunities to bring WCS field staff from each of our Regional Programs together to share lessons learned and best practices. This is of enormous value to our field sites as it allows innovative and

effective conservation practices to quickly spread across our organization, and thus enhances our ability to effect conservation across the planet.

This meeting was judged by attendees as the best since LLP's establishment and the first meeting in Madidi, Bolivia. Field staff were particularly excited because pilot development of the full suite of LLP strategic planning tools had been completed, allowing staff to see how the approach was implemented at different sites and to assess what strengths and weaknesses they found in the process. A series of Guidance Briefs is being developed based on the discussions at the meeting. These Briefs will be posted on the website to allow conservation practitioners to better understand what each tool is intended to achieve within a conservation project management cycle, what training resources are available, and what information, staff skills and time are required to use each tool.

Furthermore, LLP staff are working on a collection of case studies that will recount and capture our collective experience, over the last 9 years, in developing this unique and systematic approach to threats-based conservation at a landscape scale.

Cross-site learning

Former WCS GCP/LLP Program Director Dr. Amy Vedder traveled to Guatemala in the fall of 2006. She and Guatemala LLP project director Roan McNab undertook an overflight of the Maya biosphere reserve to view the broader landscape and visualize the many issues and conditions that influence forest resource conservation, and to discuss how WCS is using different strategies in distinct parts of the reserve to address these different challenges. Dr. Vedder also made a field visit to Paso Caballos and the macaw areas, and went to Tikal and Uaxactún village to meet with partners and see, first hand, how WCS is effecting conservation and livelihoods in the Maya Biosphere Reserve.

Cross-organizational learning

Drs. Didier and Wilkie continued their involvement with a GCP learning project to evaluate the different approaches that conservation NGOs use to select conservation targets (e.g. WCS's Landscape Species Approach). To follow up on an FY06 workshop attended by the GCP partners, Drs. Didier and Wilkie have been working closely with Madeleine Botrill (formerly with WWF) and other GCP partners to publish a scientific paper which reviews and compares the target selection procedures of the WCS, TNC, WWF, CI, and AWF. The paper was submitted to the journal *Conservation Biology* during FY07 (Appendix B13). Although the paper was not accepted for publication, the authors were invited to resubmit given some revisions. Dr. Didier and Ms. Botrill have begun revisions and plan to resubmit in FY08.

Recently, LLP-NY has begun leading an effort to publish much of our progress and the progress of other NGOs on landscape-scale conservation planning. We plan to secure agreement from a journal to publish a special section on the spatial aspects of landscape conservation planning used by the GCP partners (WCS, TNC, WWF, CI, and AWF). The WCS contribution will likely include an overview of the Landscape Species Approach, and possibly several case study applications of the approach from our project portfolio, including case studies from the Eastern Steppe of Mongolia, Glovers Reef in Belize, Adirondack Park in the US, Nouabalé-Ndoki in Congo and Nam Kading in Laos. We hope to have all papers for the special section submitted by the end of FY08.

Activity 6.3.2 CMP: leadership, design, writing and audits

CU staff continues to play a leadership role in the identification, design and implementation of Conservation Measures Partnership activities. We work closely with all CMP members to identify best-practice tools to use as models for development of eAdaptive-Management (now named Miradi) software modules. We provide CMP with ongoing lessons from our efforts to integrate project strategic planning and annual financial management, and offer recommendations as to how this experience can help guide future updates of Miradi.

LLP NY staff conducted, and ten WCS/LLP site field staff participated in, a 1/2 day practical test of the Miradi adaptive management software developed by the Conservation Measures Partnership. As the software is designed on the TurboTax model (i.e., can be used straight out of the box without any training), neither expatriate nor national project staff were provided any guidance on how to use the software, they were only told briefly the range of tasks that the software was designed to help field staff undertake. By the end of the 4 hour test run, all staff reported that the software was indeed easy to use and the help files were exceedingly useful - though often more difficult for non-English speakers. Primary feedback was a desire for short Video Tutorials for each step in the process showing how to use the software, as this would reduce the need to read the detailed help files.

LLP NY staff continued to contribute to activities being undertaken by the Conservation Measures Partnership. Specifically, we provided guidance to Elizabeth O'Neill as she prepared a review of CMP experience undertaking conservation audits.

Activity 6.3.3 Local engagement in conservation survey

In FY07, we extended the reach of a synthesis of field-based practice, published as a WCS working paper: "Casting for Conservation Actors: People, Partnerships and Wildlife" (Appendix B14).

Activity 6.3.4 Preliminary assessment of the human welfare impacts of establishing national parks

Dr. David Wilkie shared lessons-learned and best practices from the WCS-Boston College People and Parks project in Gabon during a 2-day workshop at the UNEP World Conservation Monitoring Centre (WCMC) focused on the integration of livelihood measures into protected area management effectiveness monitoring and assessment. In addition, he shared WCS experiences on the use of monitoring frameworks and livelihood assessment tools in a 2-day workshop on methods for assessing the livelihoods impact of conservation activities, organized by Fauna and Flora International and the African Wildlife Foundation. Christopher (Kit) Kernan of Conservation International has asked that we train a social science team in Equatorial Guinea on the methods developed during the People and Parks project, so that he can meet his CARPE obligations for enhancing the participation of local people in conservation programming and assessing the positive and negative impacts of USAID conservation spending on local economies. In addition, information gleaned by Dr. Wilkie during the latter meeting encouraged us to revise our LLP Technical Manual 4 (Appendix B11) to incorporate a very clever and simple poverty assessment tool developed by Rick Davies – The Basic Necessities Survey (BNS). This tool continues to promote the use of a standard basket of assets to assess household wealth.

Activity 6.4 Application of Living Landscapes Program tools beyond core sites

Activity 6.4.1 Training workshops and technical assistance in the use of LLP tools

LLP NY staff continued to provide assistance to WCS and reserve staff of the Amazon Andes Conservation Program in Brazil, Peru, Ecuador, and Bolivia during a week long workshop in Brazil.

LLP NY staff designed and delivered a 2-day conceptual modeling and monitoring framework training for program staff in the WCS regional programs (about 40 people), plus 14 staff from WCS field sites. The training was held at WCS's headquarters in NY. The fourteen field participants who benefited from this workshop included staff from other LLP design and demonstration sites. Both the Ecuadorian and Congolese landscape sites were supported by the first round of USAID/GCP funding and are continuing to apply the tools and build upon the success of their previous conservation work.

Dr. Didier worked closely with several non-core WCS sites to implement the program tools, including most prominently the Adirondacks, USA and the San Guillermo Biosphere Reserve in Argentina. The LSA tools have also contributed greatly to Dr. Didier's work on landscape scale planning projects in Samburu-Laikipia, Kenya and Argentine, Patagonia.

Dr. Wilkie used strategic planning tools developed by LLP and financed by USAID/GCP to help the WCS Democratic Republic Congo program to select conservation targets around which to focus their conservation effort at a national level, to identify critical landscapes to conserve these targets within DRC, and to begin the development of conceptual models for each critical landscape. Dr. Wilkie leveraged GCP support to help develop a strategic plan for conservation of Asian and African elephants.

Dr. Strindberg worked closely with Dr. Emma Stokes in Congo to build landscape models for two of their Landscape Species, namely elephants and chimpanzees, in the Ndoki-Likouala Landscape (supported by the previous round of USAID/GCP funding), thus building on USAID/GCP prior investments.

Dr. Strindberg and Gosia Bryja leveraged GCP support to LLP by helping our WCS Lao team to apply the Landscape Species Approach to conservation planning in the Nam Kading National Protected Area in the Bolikhamxay province of Lao. These LLP activities were part of a multi-stakeholder Integrated Ecosystem and Wildlife Management Project (IEWMP), and led to the generation of species conservation landscapes that illustrate the areas where human use of the landscapes and animal habitats intersect (i.e. areas where potential threats to animal populations exist). The results of the analysis have already been adopted by the Lao government to develop interventions for the new management plan for the Nam Kading National Protected Area.

Gosia Bryja of LLP-NY traveled to Argentina in October 2007 to provide support to the Sea & Sky project as they implement LLP/GCP tools in their marine conservation planning initiative. She worked with Valeria Falabella to build biological models for their previously selected seascape species: Magellanic penguins, Black-browed albatrosses, Squid, Common hake and Southern Right whale. Leveraging GCP support to pilot the use of our landscape-scale conservation planning tools within vast, complex, 3-dimensional seascapes is an important but challenging new direction for LLP.

Activity 6.4.2 Technical Manuals

We continued to make our series of technical manuals available to conservation practitioners and decision makers on our website, as hard-copy booklets and on CD. Manuals are now available in English, French and Spanish.

Activity 6.5 Ensure coordination and communication services for the program

The program director and assistant director continued to meet with staff from the core sites and other WCS large-scale conservation sites to discuss the development of the program, on-the-ground implementation of the Landscape Species Approach, and further development of tools relevant to the approach. Program staff also continued to meet with collaborators, NGOs, governmental officers, and representatives of other stakeholder groups to promote use of the strategies and tools.

Throughout the year, the Coordination Unit has assisted field staff in completing annual Implementation Plans, reporting on Performance Monitoring forms, and submitting Annual Reports. The program director and assistant director and other staff have continued to contribute significantly to USAID/GCP quarterly and annual meetings in Washington DC and continue to provide regular reporting and updates to USAID.

III. Success Stories and Other Appendices

a. Success Stories

Given the current political context in Bolivia, the biggest success we have had has been the defense of the protected areas service, in particular Madidi and Pilon Lajas. The WCS Greater Madidi Conservation Program's support to the surrounding indigenous territories, as well as the municipalities of Apolo and Ixiamas, has been critical in establishing a constituency for conservation in the region. The Tacana, Tsimane, Leco and Quechua-Tacana communities came together in September, and since then have been working to establish an alliance through the La Paz Indigenous People's Council. The goal is to push a common agenda for the National Confederation of Indigenous Peoples (CIDOB) and the Bolivian government which works for the consolidation of the protected area service, the development of new mechanisms for participation (co-management) and the defense of its institutionalism. We are convinced that without the strong position of indigenous people in favor of the protected area service, many protected areas, Madidi in particular, would have been more seriously impacted by the six month near total collapse of the service's control and vigilance mechanisms. During this period, Tacana, Quechua Tacana and Leco communities critically supported the weakened park guard corps in the eviction of illegal timber extractors and settlers from the lower Tuichi valley, and also provided critical political support in defense of the institution of the protected areas system. This support will continue to be crucial in demanding best practices by predicted future large energy and infrastructure development projects in the region.

b. Appendices:

- A1. Rios-Uzeda, B. and R.B. Wallace. 2007. Estimating Andean Condor population size in the Apolobamba mountain range of Bolivia. *Journal of Field Ornithology* 78:170-175.
- A2. Beltrán, L.F. 2007. Memoria del taller corto de formación continua *Farmacología Veterinaria Básica I*.

- A3. Beltrán, L.F. 2007. Memoria del taller corto de formación continua *Farmacología Veterinaria Básica II*.
- A4. Beltrán, L.F. 2007. Memoria del taller corto de formación continua *Farmacología Veterinaria Básica III*.
- A5. Beltrán, L.F. 2006. Informe Final de Coproparasitología en Animales Domésticos de las Comunidades del ANMIN Apolobamba.
- A6. Beltrán, L.F. 2006. Informe Final de Ectoparásitos Identificados en Animales Domésticos de las Comunidades del ANMIN Apolobamba.
- A7. Beltrán, L.F. 2006. Informe Final de Hematología en Animales Domésticos de las Comunidades del ANMIN Apolobamba.
- A8. Beltrán, L.F. and A.M. Beltrán. 2007. Resultados técnicos muestreo de alpacas campaña 2006: Análisis parasitológico (Coproparasitología, ectoparásitos). Análisis hematológico.
- A9. Beltrán, L.F. and A.M. Beltrán. 2007. Resultados técnicos muestreo de ovejas campaña 2006: Análisis parasitológico (Coproparasitología, ectoparásitos).
- A10. Beltrán, L.F., J. Zapata, R. Nallar, and H. Ticona. 2006. Manual de Entrenamiento en Salud y Vigilancia Epidemiológica en Vicuñas y Camélidos Domésticos del ANMIN Apolobamba - Módulo 1.
- A11. Beltrán, L.F. 2006. Memoria del módulo 2 de Entrenamiento en Salud y Vigilancia Epidemiológica en Vicuñas y Camélidos Domésticos del ANMIN Apolobamba
- A12. Beltrán, L.F. 2007. Práctica de dosificaciones teóricas (material de apoyo para talleres cortos de *Farmacología Veterinaria Básica III*).
- A13. Beltrán, L.F. and H. Ticona. 2007. Guía Memoria de Orientación Técnica Veterinaria a Comunidades Alto Andinas.
- A14. Beltrán, L.F. and H. Ticona. 2007. Guía Memoria de Orientación Técnica Veterinaria a Comunidades de Cabecera de Valle.
- A15. Beltrán, L.F. 2007. Vademécum Veterinario (material de apoyo para talleres cortos de *Farmacología Veterinaria Básica*).
- A16. Caballero, J. and D. Ricalde. 2006. Plan de Desarrollo de Turismo para el Municipio de Ixiamas.
- A17. Chávez, L. and G. Krstinic. 2007. Memoria del primer taller a nivel poligonal de DRPs: TCO Lecos Larecaja.
- A18. Chávez, L. and G. Krstinic. 2007. Memoria del segundo taller a nivel poligonal de DRPs: TCO Lecos Larecaja.
- A19. Alípez, P. 2006. Estadísticas del Sistema de Cobros por ingreso de turistas al Parque Madidi, 2006. (Cantidad de Turistas que Ingresaron al Parque Nacional y Area Natural de Manejo Integrado Madidi Gestion/06)
- A20. Gismondi, P. 2006. Informe sobre la calidad de los servicios turísticos en el Parque Nacional y Área de Manejo Integrado Madidi.
- A21. Krstinic, G. 2007. Informe del estado del avance del POP comunal para la TCO Lecos Larecaja.
- A22. Miranda, G. 2007. Análisis de los resultados del sistema de automonitoreo de la pesca en comunidades tacanas.
- A23. Miranda, G., A. Llobet, and K. Lara, 2007. 1er Taller para la organización del aprovechamiento de peces ornamentales y lagartos en la TCO Tacana I.
- A24. Miranda, G. 2007. Medición de la tasa de supervivencia de algunas de las especies con potencial ornamental de la TCO-Tacana.
- A25. Miranda, G. 2006. Memorias de la reunión con pescadores de la TCO-Tacana sobre el programa de pesca en el río Beni. San Miguel del Bala. 21 y 22 de septiembre de 2006.
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- A28. Nallar, R. and O. Rocha. 2007. Informe del Taller para la Elaboración del Plan de Vigilancia Epidemiológica en Aves Silvestres. Ministerio de Desarrollo Rural y Medio Ambiente.

- A29. Pérez, E. 2007. Sobrevivencia de Colmenas, Diversidad y Abundancia de Abejas Nativas y Fenología de Flora Melífera, en Comunidades de la TCO Tacana.
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- A31. Salazar, C. 2006. Reglamento de Investigación Científica en el Parque Nacional y Área Natural de Manejo Integrado Madidi.
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- A34. Silicuana, T., ARIMA. 2007. Plan de Manejo Comunal de Aprovechamiento Sostenible de Incienso en la Comunidad de Santa Cruz del Valle Ameno del Municipio de Apolo, Provincia Franz Tamayo.
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- A37. Valdivia, S. 2007. Memorias del 1er Taller para la Implementación del Sistema de Monitoreo de la RB-TCO Pilon Lajas.
- A38. Valdivia, S. 2007. Memorias del Taller de Capacitación en ArcView. Apolo.
- A39. Vásquez, J. 2007. Informe Final de Seguimiento y Evaluación de la Gestión 2006 del SERNAP.
- A40. Vásquez, J. 2007. Guía de Seguimiento y Elaboración de Indicadores y Resultados (SERNAP).
- A41. Vásquez, J. 2007. Informe Medición de la Efectividad del Manejo del SNAP (MEMS) Gestión 2006.
- A42. Zenteno, F. 2006. Diversidad Florística y Estructura del Bosque Amazónico en la Cuenca del Río Hondo, Área Natural de Manejo Integrado Madidi (La Paz, Bolivia).
- B1. LLP Technical Manual 5- *A quick reference guide to the Landscape Species Selection Software version 2.1*
- B2. LLP Manuel Technique 3- *Mesurer l'efficacité - cadre de suivi*
- B3. LLP Manuel Technique 4- *Les enquêtes sociales – un outil de conception, d'action et de suivi pour la conservation*
- B4. LLP Manuel Technique 5- *Guide de référence rapide au logiciel Landscape Species Selection version 2.1*
- B5. LLP Manuel Technique 6- *Bâtir le Paysage Biologique et celui des Menaces : une approche pas à pas*
- B6. LLP Bulletin 8- *Mettre en Place des Objectifs Démographiques pour la Conservation de la Faune : Combien d'Animaux Doit-on Conserver ?*
- B7. LLP Bulletin 9- *Se Partager des Paysages convoités : La Conservation à Travers les Yeux des Animaux*
- B8. LLP Boletín 8- *Estableciendo Tamaños Poblacionales Meta para la Conservación de la Vida Silvestre: ¿Cuántos Animales Debemos Salvar?*
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- B10. LLP Technical Manual 2- *Creating Conceptual Models - a tool for thinking strategically*
- B11. LLP Technical Manual 4- *Household Surveys – a tool for conservation design, action, and Monitoring*
- B12. Sanderson, E. (2006). How Many Animals Do We Want to Save? The Many Ways of Setting Population Target Levels for Conservation. *BioScience* 56(11): 911-922.
- B13. *Comparing Landscape-Scale Target Selection Procedures of Five International Conservation Organizations*
- B14. WCS Working Paper- *Casting for Conservation Actors: People, Partnerships and Wildlife*

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- Silicuaña, T., ARIMA. 2006. Plan de Manejo Comunal de Aprovechamiento Sostenible de Incienso en la Comunidad de Pata del Municipio de Apolo, Provincia Franz Tamayo.
- Valdivia, S. 2007. Guía de monitoreo para el Madidi revisada.