



# Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society

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## Northwestern Bolivian Andes Landscape Conservation Area Annual Report October 2003 – September 2004

### I. Summary of Activity Status and Progress

#### a. Introduction/Summary:

The Northwestern Bolivian Andes Biodiversity Conservation at the Landscape Scale (BCLS) Program aims to ensure conservation of the wild lands and wildlife of the greater Madidi area through a landscape conservation approach, working with other conservation and sustainable development projects active in the region. The landscape approach is designed to determine the needs of key wildlife species, assess human activities across the same landscape, and use the intersection of these to focus efforts on those areas and actions which emerge as key conservation conflicts or opportunities. The landscape species conservation hypothesis assumes that by meeting the needs of a suite of spatially and ecologically complementary landscape species, biodiversity in general will be conserved.

The Northwestern Bolivian Andes Landscape Program remains on track. To accomplish the long-term goal of biodiversity conservation at the Northwestern Bolivian Andes Landscape Conservation Area, we focus on five interrelated objectives: Establish baselines and monitor landscape species and the landscape context in which they are found; facilitate community-based natural resource management across the landscape; strengthen institutional capacity in natural resource conservation and management; promote the development of national policies that support the landscape conservation approach; and elaborate a participative, integrated landscape conservation action plan.

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 at an international level within landscape conservation initiatives. Thus, we have now added a population target element to our landscape species analysis. Given the general paucity of information regarding landscape species densities and current scientific debate over how many animals are required for a minimum viable population we have chosen to adopt a multi-targeted approach. The initial results of population viability analyses indicate the importance of the neighboring protected areas in Peru for spectacled bear, condor and jaguar conservation. This highlights the need to consider expanding our conservation efforts to southern Peru.

Our community natural resource management program is expanding rapidly with most initiatives now taking on a supra-communal nature. The fact that CIPTA in particular is recognizing this and developing a specific office for natural resource management, administration and monitoring is a real breakthrough. In addition, the natural resource regulations that CIPTA has been developing with the communities of the TCO are drawing attention from government offices including the DGB and other indigenous groups even beyond Bolivia. This represents a socio-politically complicated activity yet it will also be critical if the Tacana TCO is to be managed effectively, efficiently and transparently.

The processes and products arising from the Tacana Indigenous Communal Land (or Tacana TCO) project and the Madidi National Park management plan project have raised the bar on participation at a local scale. Our projects have been recognized by the relevant national bodies, CIDOB (national indigenous representative body) and SERNAP (protected area service) respectively. Indeed, the Madidi management plan is now considered a benchmark for other protected area management plans within the Bolivian protected area system and we are adopting the majority of the methodologies in the up-date of the Pilon Lajas management plan.

The conflict related to proposed road development in Madidi highlights the challenges that lie ahead for a landscape scale conservation vision. Although the movement in favor of roads in the Apolo and Ixiamas region was promoted as a grass-roots community movement, it turned out that in fact the road promoters had a series of political and economic interests. These conflicting interests emerged from a series of activities by SERNAP, many involving technical and financial support from our program. Once exposed, the conflict died down to some extent. However, this example highlights once again the need in all the regions of our landscape for a better understanding of democratic processes and the need for better availability of information and effective communication strategies.

## **b. Highlights**

- Bird surveys in the Apolo grasslands increased the number of confirmed bird species for Madidi to 879. Surprisingly these grasslands are not purely anthropogenic with several grassland specialist bird species present, including a potential new seedeater species.
- Preliminary results indicate healthy populations of white-lipped peccary, vicuña and surubi catfish are extremely achievable within the landscape. For spectacled bear and jaguar the landscape represents an important continental stronghold, however, populations may not meet newly published upper minimum viability requirement estimates without extending north into southern Peru and further south into the Bolivian Yungas and Beni grassland-forest interface. The picture for condor is more worrisome and the lack of data regarding density or population estimates underlines the need for further research and monitoring within the landscape and beyond.
- At the long-term lowland study site in the Rio Hondo, the WCS research and monitoring team has radio-collared and tracked 8 white-lipped peccaries for one year. To date four animals remain with collars, and preliminary home range estimates are between 40 and 70 km<sup>2</sup>, confirming the wide-ranging behavior of this species. Density estimates for white-lipped peccaries have been gathered at four sites across the landscape over the last year: Carmen del Emero, Cachichira, Rio Hondo, and Alto Madidi. All density estimates in the protected areas indicate between 5 and 10 animals per km<sup>2</sup>, and around 5 animals per km<sup>2</sup> in the TCO. These results suggest that peccary populations are recovering within the park and are able to resist current levels of subsistence hunting in the more remote areas of the Tacana TCO.
- The process of formulating natural resource use regulations has highlighted the need for micro-zoning within the Tacana TCO; such micro-zoning would also double as an official territorial zoning plan. Re-zoning will help eliminate future contests over land and resource use.
- We began supporting a community driven project to habituate and study the woolly monkey (*Lagothrix* sp.) in the montane forests of the Apolo region of Madidi protected area. The Azariamas community members are taking turns to follow a monkey troop every day with the objective of habituating them and learning more of their behavior.
- With regard to wildlife damage to livestock, our project team conducted a training workshop with the Apolobamba park guards. We trained them to recognize wildlife related livestock kills, as well as methods that could be used to monitor this problem across the protected area.
- The project team has also begun a program with five communities (Cañuhuma, Medallani, Caalaya, Lagunillas, and Curva) in Apolobamba to implement family level corrals for nocturnal livestock protection. This represents another community-based solution to human-animal conflicts. In each of these communities the project is working with community members to investigate the amount of

livestock owned by each family and monitor losses across the year. The project team is also implementing a standard questionnaire regarding the perception of the communities towards wildlife before the onset of the project.

- The project team also carried out a training module, with all Madidi protected area park guards in two groups, one in Apolo and one in Ixiamas. The module included Management Plan content and process, Annual Work Plan, Monitoring and Madidi Tourism Regulations.
- In an agreement with Conservation International we are up-dating the management plan for Pilon Lajas. During this initial phase, we censused all indigenous communities belonging to the Regional T'simane and Moseten council (CRTM), in order to fill gaps in the national census involving rural and indigenous people. The official government census will still determine resources allocated to the local municipalities, but our supplementary census and socioeconomic information will inform the Pilon Lajas management plan.
- In addition we have also been asked to provide additional technical follow-up on the two consortiums contracted for development of the GAP analysis and the Master Plan of the Protected Area analysis of connectivity needs of existing protected areas respectively. The GAP analysis represents a key opportunity for ensuring the conservation of wide ranging wildlife in Bolivia.
- Illegal mining in the Tequeje River within the Tacana TCO has emerged as a new threat to the TCO and Madidi. We have provided legal support to CIPTA to present their complaints to the Ministry of Sustainable Development and the La Paz Prefecture. The threat has been reduced but the legal process over administrative responsibility in the Ixiamas Municipality is still pending.

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## II. Detailed Description of Progress

### a. Key short and long-term program objectives for the reporting period (October 2003 – September 2004)

In one of the most biologically diverse landscapes on the planet, WCS intends to develop and implement long-term conservation measures at a landscape scale by working with key national, regional and local partners to address threats and opportunities they themselves helped to identify, and by focusing research and monitoring efforts on the conservation and wise management of wide-ranging and vulnerable ‘landscape species’. We aim to successfully implement and refine the landscape approach within the Northwestern Bolivian Andes Landscape, thereby promoting this concept in other biologically critical Bolivian landscapes.

In the medium term (about 5 years), our main objective is to capitalize on our working relationships with the plethora of actors in the region, promoting the development of the landscape approach with interested parties through the production of a participatory landscape conservation action plan. We also intend to add more detailed environmental planning experiences to this document, thereby creating a ‘living’ library of relevant landscape conservation planning documents. This process and the accompanying documents will explore mechanisms to integrate spatially distinct land-use planning initiatives (for example, community and inter-community zoning, TCO land-use plans, protected area management plans, local government development proposals, multiple municipality planning activities, private lands and forestry concessions) into an overall landscape conservation strategy. These landscape planning initiatives will allow a more strategic and collaborative approach to the design of conservation interventions and subsequent monitoring and evaluation activities by different actors working in the region.

Over the next two years, we intend to continue gathering and interfacing the biological and socioeconomic information necessary to refine spatial priority-setting models and determine management actions at the landscape scale. Indeed, for the Tacana TCO and Madidi, areas that are now both legally recognized and have developed management visions (in the form of a natural resource management strategy and a management plan respectively), the landscape program will increasingly shift toward support in implementing high-priority interventions identified within these plans.

### **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**

In coordination with the National Herbarium at the Institute of Ecology we began studies related to the availability of food resources for the white-lipped peccary at the Rio Hondo long-term research site. This research is focusing on detailing the spatial and temporal distribution of key peccary resources, particularly a number of palm species present in the area.

Our preliminary ‘broad-brushstroke’ analysis of habitat loss for the landscape indicated that overall forest loss was low and significantly less than the Amazonian average, and that protected areas suffered less habitat loss than immediately surrounding non-protected areas. The strongest predictors of land cover change were previous areas of deforestation, roads and population centers, but the analysis suggested that subtler forms of land degradation or forest use may be more important than deforestation in this landscape. Nevertheless, in order to safeguard forest cover, we have proposed that conservation strategies be devised to limit the building of new roads in protected portions of the landscape.

In July 2004, our technical team will be developing a model of inundated forests and grasslands for the landscape, incorporating the degree of inundation, based on a series of satellite RADAR images. We will work in conjunction with the Geographical Analysis office of the Museo de Historia Natural Noel Kempff Mercado in Santa Cruz. This collaboration will be important for determining the inundated vegetation types for the landscape, as well as for management activities such as spectacled caiman management initiatives in the Tacana TCO and other wildlife that use inundated forest.

Bennett Hennessey continued bird surveys in the Madidi region by visiting the Apolo grasslands where he increased the number of confirmed bird species for Madidi to 879. Surprisingly his findings demonstrate that these grasslands are not purely anthropogenic with several grassland specialist bird species present, including a potential new seedeater species. The presence of these grassland specialists in an area at least 60 km in a straight line to the Andean grasslands and more than 100 km in a straight line from the Ixiamas or Heath grasslands indicates that these grasslands may be Pleistocene relicts with associated grassland specialist fauna. In August, Hennessey will be visiting Alto Madidi to survey the Tigre escarpment and the Varzea flooded forests in the northern portions of the Madidi protected area. To date Armonia, the Bolivian Birdlife Partner with whom we have a cooperative agreement for bird research in the landscape, through Hennessey has obtained over 800 recordings from northern La Paz, referring to over 350 species of birds. These recordings have also been deposited in the Macauley Library of Natural Sounds, Cornell University. Meanwhile, Carlos Zambrana is close to completing his undergraduate thesis concerning the use of GIS models for predicting bird distribution and diversity in the Northern La Paz region. WCS (Wallace, Gomez, Zambrana) will use these studies as a preliminary assessment of the effectiveness of the umbrella function hypothesized by the landscape species approach, using GIS modeled bird distributions and known species presence data.

Our team continued studies to generate relative abundance and density estimates for medium and large sized vertebrates across the landscape with significant surveys ongoing at the Alto Madidi and Hondo sites. The communities of Cachichira and Carmern del Emero continued collecting similar information from transects they helped to set up which they monitor. Together with previous surveyed sites this information is critical for building a picture of mammalian and bird communities, which has particular relevance for developing source-sink models to inform hunting management across the landscape. Marcos Teran completed his undergraduate thesis documenting the bat community of the Alto Madidi region using ANABAT detector technology and assessing the usefulness of bats for biodiversity monitoring. In total, 70 bat species were registered, including a new species record for Bolivia. Given the speed and efficiency of this methodology and the fact that several species were only found in pristine forest, this method appears to present further potential as an efficient monitoring tool.

Additionally the Landscape Context is described from the human point of view. Through the different participatory planning exercises leading to the development of first the Tacana TCO Natural Resource Management Strategy, and secondly the Madidi Management Plan we obtained information on the natural resource use areas by 66 communities across the landscape. This information is complemented by spatial data on roads, forestry, hydrocarbon and mining concessions to obtain a map of the “human footprint”. On the other hand this information is also the backbone for the participatory strategic planning exercises mentioned below.

This year we will add to human impact information with a similar exercise involving approximately 15 T'simane and Moseten communities within and around Pilon Lajas, and a further 15 or 20 campesino communities along the Palos Blancos – Rurrenabaque Road.

### **Activity 1.2. Research and Monitoring**

Research to collect baseline information on our conservation targets is as important as monitoring to track changes in those conservation targets. Without it, we may miss the impact of key threats or fail to appreciate natural fluctuations in wildlife that affect wise management and use of wildlife.

This year, our spectacled bear team has concentrated on producing manuscripts related to previous research concerning habitat availability and preferences in northern La Paz district. To date, four manuscripts have been completed concerning this research and these conclude that upper montane (cloud) forests are the most important habitats for spectacled bears, that the northern La Paz region is of global significance in terms of spectacled bear conservation importance, and that in order to maintain this population conservation actions need to be concentrated in three areas to maintain connectivity across the northern La Paz population. The main threat to bear conservation in the landscape is habitat destruction resulting from expansion of the agricultural frontier. The road proposals in the Pelechuco and Apolo areas are particularly worrying because of the colonization that would undoubtedly be linked with their construction.

In August, WCS will be beginning camera trapping efforts to assess the applicability of this methodology for estimating spectacled bear population densities, and the team has already scouted out an area for camera trap deployment. To date, no reliable population density estimates exist for this species.

At the long-term lowland study site in the Rio Hondo, the WCS research and monitoring team has captured, radio-collared and released 8 white-lipped peccaries. We have been radio-tracking these animals for almost one year. To date four animals remain with collars, and preliminary home range estimates are between 40 and 70 km<sup>2</sup>, confirming the wide-ranging behavior of this species. Density estimates for white-lipped peccaries have been gathered at four sites across the landscape over the last year: Carmen del Emero, Cachichira, Rio Hondo, and Alto Madidi. All density estimates in the protected areas indicate between 5 and 10 animals per km<sup>2</sup>, and around 5 animals per km<sup>2</sup> in the TCO. These results suggest that peccary populations are recovering within the park and are able to resist current levels of subsistence hunting in the more remote areas of the Tacana TCO. These data will allow a landscape scale analysis of subsistence hunting using source-sink management models, once we have obtained more density estimations to assess variability (anticipated by 2007).

We have been unable to capture jaguars and have therefore intensified efforts with a total of 11 traps now deployed in the Rio Hondo, using meat, channel no.5 and cat lure as attractants. Meanwhile, the team has continued camera-trapping efforts in Quendeque, producing a third density estimate, and in Alto Madidi, locally considered to be a jaguar stronghold. This research and monitoring will help us make a preliminary assessment of the effectiveness of Madidi protected area for jaguar conservation.

This year our research and monitoring team has established that Andean condor can be individually recognized at carcasses. As such the team has begun attempts to estimate the condor population size across Apolobamba and Madidi using a series of carcass sites. The condor population is small compared to other landscape species, and it is critical to assess its long-term viability and degree of isolation to design appropriate management protocols for this threatened species that is also a national Bolivian icon.

Following the completion of revised versions of the biological landscapes for all six selected landscape species, as well as a revised version of the threat landscape, our team intersected them to produce a preliminary, prioritized conservation landscape. To generate a conservation landscape one must specify population target

levels so that one knows when sufficient area has been protected to ensure population viability. We set three different target levels for landscape species populations. Preliminary results indicated that healthy populations of white-lipped peccary, vicuña and surubi catfish are extremely achievable within the landscape. For spectacled bear and jaguar the landscape represents an important continental stronghold, however, populations may not meet newly published upper minimum viability requirement estimates without extending into southern Peru and south further into the Bolivian Yungas and Beni grassland-forest interface. The picture for condor is more worrisome and the lack of data regarding density or population estimates underlines the need for further research and monitoring within the landscape and beyond. Our technical team is currently using this analysis to evaluate and define current and potential additional conservation interventions across the landscape. A complete version of this analysis will be available by the end of September 2004 and will be presented at the forthcoming Wildlife Management Congress in Iquitos, Peru, in September 2004. Improvements for the Pilon Lajas and Apolobamba sections of the threat landscape are anticipated following the completion of their revised management plans in June 2005.

### **Activity 1.3. Ecological Studies of Special Elements**

Over the last year we have continued efforts to establish the taxonomic and conservation status of several primate species in the landscape. The titi monkey discovered in 2002 and collected in 2003 (*Callicebus* sp. nov.) has been established as a new species for science via a manuscript by Wallace et. al. accepted for publication in Neotropical Primates. The woolly monkey (*Lagothrix* sp.) discovered in 1999 and collected in 2000 is still under consideration as a new species and a study facilitated by our program and carried out by Charles Veitch through a grant from Primate Conservation Inc. has concentrated on defining the distribution of this population in the montane forests of Madidi and Apolobamba. This research suggests a population of below 2000 individuals in this region, although anecdotal and historical records now suggest this population spreads south from Peruvian montane forests.

Meanwhile, our program supported population censuses in the Heath (Frankfurt Zoo) and Madidi (WCS) rivers of northern La Paz for the globally threatened giant otter, with results from Heath indicating at least 45 animals and preliminary results from Madidi suggesting a similar population, although only in the upper portions of the river near the protected area. In addition, in coordination with Amazon Conservation Association (ACCA), the WCS research team provided the first population density estimate for Marsh deer (0.35 ind./km<sup>2</sup> signifying roughly 125 individuals for the Pampas del Heath) in the natural grasslands of Pampas de Heath, Bolivia.

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

### **Activity 2.1 Community-based Natural Resource Management**

Over the last year, many of our co-management projects have begun to extend to additional communities generating supra-communal systems. This result in itself is a reflection of the power of these community projects and their potential for being self-sustaining. For most initiatives this multi-community involvement is critical in terms of market development and production capacity. Thus in this document we will report on all community projects in one unified section.

This year two Tacana communities (Santa Fe and San Pedro) continued their efforts to produce honey from native bees, successfully producing honey and selling this to the local Ixiamas market and donating a portion for quality control and health tests. These tests were carried out in the Bromatology Laboratory of the National Health Laboratories Institute (INLASA) of La Paz in order to obtain SENASAG (National Service of Agricultural Health) certification to permit commercialization of the honey. These tests are only required periodically and will probably be carried out annually with a cost of approximately \$20. The two communities have now formed a Native Bee Honey Association and--after developing a proposal for the Bolivian Biocommerce office--were successful in winning a \$16,000 grant to scale-up production for the Rurrenabaque eco-tourism-driven local market and carry out a market analysis of the local and national market. Two

additional communities, Tres Hermanos and San Miguel, have formally requested support for native bee honey-producing projects. Increasing production potential will be critical in order to reach national and international markets. By December 2004 a market study for tourism, honey, timber, vanilla, chocolate and other potential products will have been concluded by an external consultant (Ximena Paredes).

The subsistence hunting management projects are ongoing in Carmen del Emero and Cachichira, and based on the results of harvest monitoring combined with population density information gathered through co-monitoring campaigns (the community itself conducts line transect surveys to assess prey abundance), both communities have made preliminary management decisions regarding the reduction in harvesting of locally threatened wildlife species: marsh deer, lowland tapir, black spider monkey and red howler monkey. Both communities have also decided to assign the responsibility of collecting information on community hunting levels to specific community members on a rotating basis.

This year three additional communities have begun efforts to register the impact of their hunting activities: San Antonio de Tequeje, Villa Fatima and Esperanza de Enapurera. This means all communities in the entire lower Beni portion of the Tacana TCO are now participating in projects designed to assess the sustainability of subsistence hunting activities and take management steps to ensure sustainability over the longer term. San Pedro and Tres Hermanos, two additional Tacana communities recently requested our involvement in subsistence hunting management, meaning that we are moving towards a hunting management plan for the entire Tacana TCO based on source-sink management models.

San Miguel is no longer participating in the hunting management project as the community has made a decision to cease subsistence hunting activities in exchange for a strong commitment to a community eco-tourism business. Program support has therefore shifted to assistance in tourist guide training efforts, as well as the identification of wildlife based tourism attractions and the design of standard tourist routes and activities. Meanwhile, in Ascuncion del Quiquibey within the Pilon Lajas Biosphere Reserve and Indigenous Territory, the management of subsistence hunting is still an important priority, particularly because this Mosen/Tsimane community also has a tourism venture (MAPAJO). As such program activities are tailored to assessing the sustainability of hunting activities, identifying and interpreting wildlife based tourism activities, and zoning these activities accordingly. Clearly, most tourism efforts should not be organized in areas where wildlife is still hunted by the communities and is therefore wary of humans. We have begun similar activities, as well as more general organizational strengthening, with the Laguna MOA tourism initiative initiated by 5 Tacana communities (Cachichira, Bella Altura, Capaina, Tres Hermanos and Altamarani) that border the Moa Lake in the TCO.

This year the CIPTA-based Tacana peoples fishing association in the River Beni region succeeded in gaining legal recognition from the Departmental government and continued participation in departmental and bi-departmental workshops related to fishing activities. This process also saw the departmental authorities assign 'local fishing inspector' duties to representatives of the 12 Tacana communities in an effort to manage fishing activities in the region.

Community-based monitoring of fishing activities continued in 2004, and through the fishing association, and additional support from a MacArthur Foundation grant to the Coleccion Boliviana de Fauna (CBF), this activity is expected to expand to at least seven communities along the Beni River by September 2004. A CEPF financed project grant to the fishing association, in combination with additional support from the CBF MacArthur grant, has helped to equip a freezing collection center in San Antonio de Tequeje. Now communities can sell fresh fish directly to buyers in Rurrenabaque and San Buenaventura at a higher price than previously when they were forced to sell salted fish at low prices to commercial traders on the riverside.



We assigned priority to continuing technical support for the Community Timber Management initiatives in Tumupasa and San Pedro, because many of the conflicts regarding land tenure and resources within the TCO have arisen because of disputes over timber. Because access to this common resource has not been defined within the TCO and other stakeholders do not recognize the validity of the Tacana claims, our team continued to provide technical assistance to the Community Timber Management initiatives via three formally approved management plans (San Pedro, AGROFOR, APIAT), and additional nascent initiatives (initial Annual Forestry Plan) in Altamarani, Tres Hermanos, Carmen Pecha and Santa Rosa de Maravilla. The CIPTA forester is now coordinating with staff from CADEFOR, that has recently (June 2004) begun working out of Ixiamas with support from BOLFOR 2, in the development of strategies to improve management practices and particularly to obtain improved market prices for TCO produced timber.

We invested in strengthening CIPTA's administrative and technical capacity to channel funds directly from Fundación Tropico, in order to implement a supra-communal initiative in four Tacana communities (Tumupasha, Carmen del Emero, Santa Fe, and Macahua) for commercialization of wild chocolate. In a similar initiative, CIPTA was also able to channel funds from Proyecto LIL Indigena to strengthen the Centro Cultural Tacana (Tacana Cultural Center) in San Buenaventura and the associated handicraft production programs in a number of Tacana communities. El Ceibo has already committed to purchasing all the chocolate produced by the Tacana communities at a competitive price.

Over the last year, our project team visited the five lower Beni Tacana communities to catalyze a participatory planning session. This session produced a preliminary management plan for the sustainable harvest of the spectacled caiman in the Tacana TCO. The resulting document has been used as a model management plan by CIDEBENI (Bolivian Environmental NGO based in Trinidad). Also the Dirección General de Biodiversidad (DGB) supports the development of this management process by CIPTA and the participating communities, considering it another potential model for testing the internal control and regulation mechanisms surrounding natural resource management. Note that productive activities that involve the utilization of wildlife will require the approval of the DGB. A condition of that approval will be the DGB's ability to monitor wildlife utilization and measure the impacts of use. In this light, throughout September 2004, community members and the project team will census the larger lakes of the TCO and compare results with data collected in 2000 and 2001. We will survey additional lakes to broaden baseline data. All these research and co-monitoring efforts will support the sustainable use of caiman and other wildlife resources.

Parallel to these community activities, we helped build Tacana community members' capacity to develop their own natural resource management projects and associated proposals in all 19 communities within the Tacana TCO. This process yielded 34 community proposals ranging from various traditional medicine projects to livestock management projects in the savanna areas of the TCO. Once proposals had been developed, a 'project school' event was held in Tumupasha where members of each project assembled to discuss each others' projects with a number of recognized technical staff from a variety of institutions working nation-wide on agricultural production, handicrafts, tourism and wildlife management. Subsequently, members of our program, CIPTA staff and community representatives assessed the improved projects, based on criteria related to gender participation, proposal quality, budgetary considerations, representation of different geographical sectors of the TCO, and commitment to the TCO's environmental, social and economic sustainability vision. Four projects were selected for preliminary funding at \$1500 each: the Tumupasha chocolate project, the Macahua eco-tourism initiative, the Bella Altura handicraft project, and the commercial fishing management project developed by five Tacana communities (San Antonio de Tequeje, Cachichira, Carmen del Emero, San Miguel, Esperanza de Enapurera) along the Beni river. The implementation of these projects included a training program in administration of financial resources that was also extended to other natural resource user groups in the Tacana TCO. Proposals that were not selected were given advice on how to improve their projects for a second round. The next round is likely to be managed more independently by CIPTA with additional support from

PRAIA (Programa Regional de Apoyo a los Pueblos Indígenas de la Cuenca del Amazonas) and DANIDA, thus enabling WCS to focus more exclusively on non-timber forest products and wildlife management projects. Some projects did address specific threats to wildlife and habitats. The Santa Rosa de Maravilla community will be directly engaged in managing a key wildlife corridor along the Tequeje River.

With additional funds from CEPF, our project team and CIPTA have continued to develop internal control and regulation mechanisms for the Tacana TCO. The natural resource access, use and management regulation for the Tacana TCO is another ground-breaking process that, in time, we fully expect to become another model for other indigenous groups, as well as for other key partners such as SERNAP and the DGB. The regulation establishes clearly who has access and/or use rights to the TCO's natural resources and under what conditions, as well as specifying a series of standard management practices for specific resource types. The sanctions section of the regulation still needs to be completed in an additional supra-communal workshop scheduled for September 2004. All 20 communities have formulated proposals for sanctions related to their specific natural resource use regulations, so the next step is to build consensus around TCO-wide sanctions based on those proposed by each community. Nevertheless, a preliminary regulation is now in place with many communities in agreement that this should be cautiously implemented without delay. However, the regulation will not be fully approved until the next CIPTA General Assembly, which is scheduled for June 2005. The process of formulating regulations has also highlighted the need for micro-zoning within the Tacana TCO; such micro-zoning would also double as an official territorial zoning plan. The current zoning plan was based on the territorial demand, which is not identical to the actual current land area titled to the TCO. Some areas demanded were not granted and some areas not demanded were granted, hence a re-zoning will help eliminate future contests over land and resource use.

In coordination with The Nature Conservancy and the USAID funded BOLFOR 2 program, our team has also developed a standard methodology for establishing the baseline socio-economic situation of local communities involved in natural resource management projects. After data collection, we will be able to assess the impact of these projects on community livelihoods, as well as perceptions of the projects among community-members.

The MacArthur Foundation is supporting work with two communities in the Apolo region of the Madidi protected area (Virgen del Rosario and Pata) regarding sustainable incense harvesting in the montane forests of the region. To date this has involved work to assess the production capacity and to continue the research previously conducted by Charles Veitch for his Masters Thesis on the ecological sustainability of the industry. Critically, the project team is also working with the incense-harvesters of the communities to assess management of incense stands. A preliminary concern will be how to control access to different incense stands as the very nature of the activity--cutting trees to harvest incense several months later--renders it vulnerable to 'cheating'. Traditional mechanisms based on a distribution of areas amongst community members have been lost in this part of Apolo, or perhaps they never existed, since the activity is relatively recent in comparison to the Huaratumo region, southern Apolo, where management of the incense stands seems more ordered.

This year the program also began supporting a community driven project to habituate and study the woolly monkey (*Lagothrix* sp.) in the montane forests of the Apolo region of Madidi protected area. The Azariamas community sees this as one element of a proposed eco-tourism venture currently under review by the German Corporation (KfW). The community members are taking turns to follow a monkey troop every day with the objective of habituating them and learning more of their behavior. This should facilitate tourism in the longer term, but will also generate much needed management information regarding the ecology and conservation of this locally threatened species, identified as one of the most pressing gaps in knowledge within the Madidi management plan.

These community natural resource projects are important for the long-term conservation of the landscape, as they promote the concept of natural resource management at a local scale, improve the capacity of local people in the design and implementation of projects, and critically provide an opportunity for the development of community-based decision-making processes including internal regulations and controls.

### **Activity 2.2 Community Mitigation of Human-Animal Conflicts**

This year we continued to support three communities in the Apolobamba protected area (Pajan, K'apna and Huayrapata), in the implementation of projects to reduce crop damage by wildlife. The communities committed to and completed a fourth year of cornfield guarding activities despite a significant reduction in budget to remunerate guarding activities. However, political unrest prevented a technical presence during the corn-harvesting season this year. Although we had anticipated disruptions by training community members to measure crop damage through workshops across the year, unfortunately they did not record crop damage whilst harvesting. This represents a lesson learnt for the program and a critical test of this work will be the extent to which these communities continue crop-guarding activities this coming year (Spring 2005) when project support for this specific activity will cease. We will monitor perceptions in 2005 after the design of the Apolobamba monitoring strategy, which will follow the updated management plan worked on by Conservation International and SERNAP.

Activities this year have also focused on producing a bi-lingual booklet describing the experiences of these communities over the last three years for distribution across the protected area. This booklet summarizes the project development and using the findings of the participating communities draws some conclusions regarding how other communities might reduce their crop damage problems. Currently, 1000 copies of the booklet have been distributed to relevant corn-producing communities within the protected area. Additionally, a technical report—which includes more details on the methods used and results obtained—has been developed and 100 copies published for distribution to protected area and local municipality staff, as well as community representatives. This technical report will be distributed in the next month.

With regard to wildlife damage to livestock, our project team conducted a training workshop with the Apolobamba park guards. We trained them to recognize wildlife related livestock kills, as well as methods that could be used to monitor this problem across the protected area. The project team has also begun a program with five communities (Cañuhuma, Medallani, Caalaya, Lagunillas, and Curva) in Apolobamba to implement family level corrals for nocturnal livestock protection. This represents another community-based solution to human-animal conflicts. In each of these communities the project is working with community members to investigate the amount of livestock owned by each family and monitor losses across the year. The project team is also implementing a standard questionnaire regarding the perception of the communities towards wildlife before the onset of the project.

Finally for all communities participating in human-animal conflict studies between August and September, our team has developed a standard methodology for establishing the baseline socio-economic situation of local communities. After data collection, we will be able to assess the impact of conflict mitigation projects on community livelihoods, as well as perceptions of the projects among community-members.

### **Activity 2.3 Land Tenure and Territorial Planning**

The first part of the land-titling process has drawn to a close, with initially 325,327 hectares (ha) of remaining fiscal lands titled to the Tacana TCO in July 2003. In the second, longer part of the process, our project has continued to provide financial and administrative support to the Tacana legal team. CIPTA is seeking title of land with conflicting ownership. We also support CIPTA's efforts to win restitution and compensation for additional fiscal lands not originally included in the TCO demand, as well as some areas around the communities which were demanded but not titled by INRA in the initial award. These additional lands are state

property and CIPTA has prioritized them because of their importance as a connection between the TCO and the protected area, their role in watershed protection and their importance for community natural resource use. So far with preliminary information regarding existing fiscal lands within and immediately surrounding the original Tacana TCO demand, CIPTA and the community representatives have prioritized approximately 57,000 ha for compensation. Technically, INRA (National Institute for Agrarian Reform) owes the Tacana approximately 81,000 ha, however, the government is under intense pressure to cede the remaining fiscal lands in northern La Paz to colonists and the “Landless” movement. The “Landless” movement has been largely rejected in this region by the Campesino Federation because it is made up of land speculators and people interested in illicit wood extraction. Thus, CIPTA will initially negotiate the prioritized 57,000 ha, most of which (more than 40,000 ha) represents the final escarpment slopes of the Andes, an area of critical importance in terms of watershed management situated between the TCO and the Madidi protected area.

This year another critical step in consolidating the Tacana TCO began with the delimitation, demarcation and signaling of the boundaries of the Tacana TCO. CIPTA and community representatives were able to prioritize vulnerable boundaries of the Tacana TCO, following which community teams led by the CIPTA Secretary for Land and Territory and a professional topographer began delimiting sections of the TCO in the Ixiamas region. This activity will continue and during August and September standard signs for placement around the boundaries of the TCO will be constructed. . WCS support has permitted CIPTA to hire the topographer, make the signs, and provide logistical and GIS support to delimitation activities.

CIPTA and the Tacana communities have also prioritized positive and mutually beneficial relationships with the forestry concessionaires whose concessions span some 200,000 additional ha immediately adjacent to the Tacana TCO. In August and September 2004, CIPTA representatives in coordination with Silvia Urrutia, the legal advisor hired by our project, will continue negotiations following initial meetings that took place in late 2002. This negotiation is important for CIPTA because the Forestry Concessions represent key areas as “sources” of wildlife to the “sinks” around the communities. Also in some cases traditional resource use areas of Tacana communities were granted to forest concessions and access to non-timber forest products such as medicinal plants and palm leaves is critical to those communities. Initially 2 of the concessions have been open to pursuing these ideas further, Bolital and Mamoré Cabrera.

#### **Activity 2.4 Environmental Education**

In addition to the local outreach and extension products already mentioned above, the project team has also produced two posters concerning the wildlife of Madidi: First a camera trapping poster highlighting the fauna of the Tuichi valley, the number one destination for tourists within the park; and second, the endemic cotinga bird species from the Apolo region, *Phibalura boliviana*, rediscovered by our team in 2000. Camera trap photos also appear on postcards for sale in the Madidi park offices where tourists register their entry into the protected area. The proceeds of these sales will go towards developing new products for tourism initiatives. This exercise is seen as a pilot activity to look at the potential to expand fundraising efforts using products directed at the tourist market. Once we have gathered information on product acceptance, together with other partners such as AOS and CI who will be producing a video and maps in a similar exercise, we will analyze the pertinence of contracting a private operator for a “nature shop” through FUNDESNAPE.

This year, our team has provided follow-up workshops with teachers participating in Schoolyard Ecology EEPE in Tumupasa, and has trained three representatives from ICIB (Instituto de Conservacion y Investigacion de la Biodiversidad) in the EEPE methodology. ICIB is a Bolivian NGO supported by CEPF to build a comprehensive environmental education program in the Apolobamba, Madidi and Pilon Lajas protected areas. This decision follows recommendations made by a consultant in 2002 regarding how to provide long-term technical support to schools, ‘key’ teachers and technicians using the EEPE methodology, rather than invest in further EEPE workshops.

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

**Activity 3.1. SERNAP Institutional Strengthening**

WCS continues to provide technical support to SERNAP in the development of a monitoring strategy for the Bolivian Protected Area System. This monitoring strategy now goes beyond the SERNAP integrated monitoring system, including the assessment of protected area management effectiveness and monitoring aspects related to participatory threat reduction assessment and local perception of protected area management. A document has been produced in collaboration with the Planning Unit of SERNAP (Luis Boyan, Cristina Zea O'Phelan & Imke Oetting) that includes the 2003 evaluations of management effectiveness of the 19 protected areas administered or co-administered by SERNAP (excluding Aguarague and Tunari protected areas). This document is ready for printing and differs from previous yearly evaluations in that its objective is twofold. Firstly, this version aims to clearly link monitoring to strategic planning by SERNAP staff, as well as for institutions such as the World Bank, for whom it was initially developed as part of the diagnostic required for the first phase of GEF funding.

A training event, jointly sponsored by GEF and WCS, focused at linking management effectiveness evaluation and strategic planning through annual work plans was held with the presence of park directors, heads of protection and administrators of all 19 protected areas administered or co-administered by SERNAP. FUNDESNAP made a presentation showing the Madidi experience in linking strategic planning in the form of management plans with annual operational planning. This was identified as a need because many management plans divorce strategic from operational planning and management levels. In the Madidi Management Plan process, this potential disconnect between strategic and operational planning was resolved by including the definition of lines of action within the different management programs, which are linked to the overall strategic objectives for the management of Madidi protected area, and also by including guiding principles and an implementation structure, integrating internal and external actors for each management program. Furthermore, SERNAP also presented the Madidi Annual Work Plan as an example of how the protected area directors should aim to incorporate the activities of institutions working in and around the protected area into supporting the strategic objectives of the protected area. The Madidi 2004 Annual Work Plan has included activities amounting to 750,660 US\$ (45% of the budget) carried out and administered by AOS, CI, GEF, ICIB and WCS. These activities are essential to allow the park to implement the management plan, in particular for local institutional strengthening, municipal environmental management, environmental education, research, monitoring and natural resource management. This initiative is a natural progression from the inter-institutional committees that allowed for information exchange, but more comprehensive collaboration is sought by integrating the activities of several institutions in a common work plan. This coming year we will aim to push the idea of developing internal regulations for the inter-institutional committee in order to make its operation more transparent and formalized.

Secondly, the publication of the SERNAP review document is also desirable to begin closer coordination between all different protected area monitoring initiatives being carried out by a variety of institutions, leading to duplication of efforts. It is clear that SERNAP involvement is necessary to guarantee continuity of any protected area monitoring initiative. However, many of these initiatives are progressing without it, no doubt also because coordination with SERNAP was difficult during the institutional instability that began with the latest change in government. Nevertheless, our strategy is to work together with SERNAP to advance their monitoring initiatives, within their organizational structure, despite slower progress than if we designed a system independently. With this in mind, we are working both with the Planning and Monitoring Offices in their complementary monitoring initiatives. This year we will provide technical assistance to SERNAP in bringing it all together: Management Effectiveness, Threats and Conservation Value Monitoring, and Conflict Monitoring. Wider distribution of SERNAP's monitoring initiatives as they begin to be implemented will allow

other institutions to contribute more effectively, perhaps by providing support in their implementation in individual protected areas, regions or topics of their focus.

The document “Environmental Conflict Analysis: A case study of the Madidi- Apolobamba- Pilon Lajas and Tacana TCO complex” was concluded, as well as the revision of the SERNAP wide conflict database. Fifty questionnaires from 19 protected areas were received; 50% of these conflicts were active and growing at the time the questionnaire was applied and only 10% were considered resolved. Conflicts were related to infrastructure, in particular roads but also dams and electrification projects; management practices; and protected area limits and categories. Conflicts were described in the questionnaires by their causes, the natural resources involved, the impacts of the conflict, key threats, opportunities arising from the conflict, strategies used for managing the conflict, and reasons why conflicts have not been resolved. Social actors were also described by the type of organization, the type of action carried out, the role played by the state, the state institutions involved, the actions taken by the state institutions, and the role of the protected area management committee.

The main recommendations arising from the SERNAP review document are related to increasing management capacities of the municipal governments so that they may become promoters of collective action initiatives for sustainable development and conservation; strengthening protected area capacities to participate in regional development initiatives; promoting alternative economic activities based on natural resource management initiatives; strengthening the capacity of the departmental prefectures to coordinate regional conservation and development actions; and strengthening the technical and political capacities of the state to manage social conflict.

A workshop was carried out in August with selected protected area staff and SERNAP central office key personnel to develop the Protected Area System Conflict Management Strategy. During this workshop the main strategic action lines were developed as well as a plan for their implementation in issues related to communications, training, and monitoring. Several scenarios for its inclusion in the organizational structure of SERNAP were discussed and buy-ins from key institutions to provide additional technical support was secured, importantly that of GTZ’s public administration support project PADEP, through its conflict management project.

In general, we collect information on threats to the landscape in three fora, the inter-institutional committees of Apolobamba and Madidi, the Coordination Committee for the Amboró–Madidi Corridor (CCCAM), and by local actors in the Management Committee of Madidi.

Based on our experience with the environmental conflict surrounding the proposed road between Apolo and Ixiamas, we provided a technical diagnostic for SERNAP to inform the Ministry of Sustainable Development and the Prefecture of the real costs and the environmental consequences associated with this road project. We will support SERNAP to develop a similar strategy regarding hydrocarbon exploitation and continue building our technical knowledge regarding the remaining road proposal Apolo-Asariamamas-San Jose-Tumupasa.

This year and in alliance with the Conservation Strategy Fund, we will quantify the impact of the Madidi protected area, and if possible Pilon Lajas, on the socioeconomic situation of the communities, by mapping and identifying investments by various institutions and their impacts. We will identify and project the economic impact of investments directed at promoting natural resource management, as well as the other economic benefits generated by local employment within the protected areas. WCS will also evaluate the economic impact of the road proposal and hydrocarbon exploitation on the environmental services and economic alternatives, such as tourism (economic valuation of social and environmental externalities). Finally, our

economic research team will evaluate the investment in the road against alternative investments to support productive activities, health and education.

Information materials regarding the above results will be produced. These will be supplemented by exchanges between local stakeholders and municipal authorities with experience with hydrocarbon exploitation, such as Aguarague, in order to augment the information base of local stakeholders around Madidi and Pilon Lajas regarding hydrocarbon exploitation.

### **Activity 3.2. Protected Area Support and Staff Training**

This year the project team finalized a realistic and responsible monitoring strategy for the Madidi protected area, based on surveillance activities by protected area staff. This strategy is currently awaiting implementation until the Environmental Monitoring Department can officially launch it and therefore ensure incorporation into the SERNAP-level monitoring initiative. The protected area staff has received basic training regarding its operation from WCS and our GIS technician has designed a database to link the monitoring data to the park's GIS. The strategy also includes a description of information flow and the types of report to be generated.

The project team also carried out a training module, with all Madidi protected area park guards in two groups, one in Apolo and one in Ixiamas. The module included Management Plan content and process, Annual Work Plan, Monitoring and Madidi Tourism Regulations. With regards to the Management Plan and its implementation through the Annual Work Plan it was necessary to discuss the different role of park guards given the current integral nature of protected area management. During these workshops we revised the monitoring strategy and the formats to be used. The monitoring systems we have designed for Madidi accord with the guidelines established for the SERNAP-level monitoring system. These guidelines include the need for the system to be as low in cost and self-sufficient as possible. Thus, park guards can gather the key indicators during their routine patrols, using minimum equipment. So far we have developed two data sheets, one for key conservation value indicators and one for human activities. The monitoring unit in SERNAP reviewed these. It is likely that SERNAP will adopt the use of our formats to substitute bulkier versions being used in other pilot phase implementation areas such as Amboró.

Additionally, the local WCS GIS technician has been training park guards in GIS software use and GPS use. In Madidi this has permitted the development of a database of infractions, which was one of the main inputs for the development of their revised strategy for control and vigilance. The GIS technician has also trained Pilon Lajas staff, together with representatives of the Regional T'simane and Mosenen Indigenous Council, and has been updating their GIS information, which--unlike Madidi's--was not up to date. The T'simane and Mosenen Indigenous Council is a key stakeholder since Pilon Lajas is both a Biosphere Reserve and their Indigenous Territory.

A training module was also carried out with Madidi park guards on key issues related to conflict management including citizens' rights and the constitution, protected area and environmental legislation, and mining and hydrocarbon legislation. WCS project staff continued to provide substantial technical assistance to the implementation of the Madidi Management Plan, though participation in the technical committee. The creation of technical committees is permitted under protected area regulations; however this is the first time a technical committee has been created with the participation of staff from different institutions. WCS is providing support in particular in Tourism, Regional Integration, Conflict Management, Monitoring and Research. The technical committee meets every 6 weeks to plan activities and quarterly to develop the progress reports on the implementation of the annual work plan.

The WCS team has also continued working with SERNAP and CIPTA in coordinating activities related to the management of the lower Tuichi and Hondo Valleys. This has centered on Tourism management in particular.

The WCS ecotourism expert hired with complementary MacArthur funds has worked with local stakeholders, individually and through the tourism commission of the management committee, to develop regulations for tourism in the park and to implement the tourism program developed in the management plan process. The final draft is now under revision in SERNAP Central office.

In an agreement with Conservation International we are up-dating the management plan for Pilon Lajas. During this initial phase, we censused all indigenous communities belonging to the Regional T'simane and Moseten council (CRTM), in order to fill gaps in the national census involving rural and indigenous people. The official government census will still determine resources allocated to the local municipalities, but our supplementary census and socioeconomic information will inform the Pilon Lajas management plan.

Participatory diagnostic workshops have been carried out with Rurrenabaque, Apolo, San Borja and Palos Blancos municipalities, the CRTM and the Campesino Federation. The trends in natural resource use, long-term vision of the protected area and a participatory mapping of resource use by the indigenous communities and 10 campesino groups of communities was carried out with support from representatives of the Campesino Federation, the Indigenous Council and park guards. The workshop participants gave input and their perceptions to support the articulation of the vision and strategic objectives for the protected area. Drafts of the vision and strategic objectives will be discussed again with the different stakeholder group representatives before working on a final version to be approved by all these actors in conjunction. During this initial phase, communication mechanisms were established via radio, local television and by integrating indigenous and campesino elected leaders into the planning team. It is not yet possible to address gender and marginalized group claims of inequity. However, our team will evaluate and present the level of participation by women before the end of this diagnostic phase, as a way to redress any weaknesses detected.

### **Activity 3.3. Wildlife Management Program (Institute of Ecology)**

We continued supporting and at times leading a weekly journal club for the project team and wildlife students at the Institute. The club is designed to promote critical thinking at the Institute, as well as to provide a means of staying in touch with current technical literature. This year 25-30 people participated each week. However, immediately prior to and during the political unrest the University was officially closed and interrupted activities. Further unrest and strikes involving students during April and May also resulted in a significant interruption. This activity will commence again in August 2004.

Our agreement with the Institute of Ecology and the small grant program for students of the Biology Faculty continues, with 10 undergraduate theses supported to date and logistical support for the field work phase of three undergraduate thesis related to our research objectives. Our review of the undergraduate biology curriculum continues with the project team participating in a workshop to discuss developing the new program. The pace is set by the Institute of Ecology and the Biology Department of the University. In the meantime, two members of the technical team donated teaching time to the Masters Program in Conservation and Ecology at the UMSA, providing a series of lectures and relevant information concerning 'wildlife management by indigenous groups' and 'environmental management at the municipal level'.

### **Activity 3.4. Monitoring Strategy Implementation**

During FY2004, our project team began systematizing our own monitoring, data by analyzing program effectiveness, and prioritizing future monitoring efforts. This strategy was presented in the first meeting of the Amazon Andes Conservation Program in Tefé, Brazil May 2004, and is now being adjusted to respond to reporting requirements at the WCS subregional 'hub' level. The monitoring strategy for BCLS is structured in a database and includes multiple levels, covering institutional strengthening, land cover, threats, wildlife, natural resource management and landscape conservation communication networks. During 2004, we input relevant data for each variable based on activities between 1999 and 2003. A number of potential monitoring activities



detailed for each intervention would require substantial additional financial investment before being implemented. The development of strategies for necessary additional financial support is still pending and will be addressed in FY2005.

To date, the monitoring and surveillance strategy for the conservation status of the Northwestern Bolivian Andes Landscape corresponds to perceived key threats to the region. However, the process of refining this strategy based on coordination meetings with the other major stakeholders in the landscape remains challenging. As a preliminary step towards this goal, we coordinated with the Madidi Management Plan team in the production of a Monitoring Design and Implementation Strategy for the Madidi protected area. This is the logical starting point, given the need for a monitoring strategy within the management plan, as well as recognition by the Director of the Madidi protected area of the need for greater and more meaningful coordination between institutions, both in terms of intervention design and monitoring activities.

Finally, as mentioned in activities 2.1 and 2.2 the project team has developed methods to establish the baseline socio-economic situation of local communities involved in management projects, such that subsequently the impact of these projects on community livelihoods and perceptions can be monitored,

### **Activity 3.5. CIPTA Institutional Strengthening**

A crucial element of the Natural Resource Use and Conservation Strategy for the Tacana TCO is to develop a governance plan and build the capacity of CIPTA to respond to the technical and administrative challenges of managing the TCO. Over the last year our technical team has worked with CIPTA in the development of administrative capacity, particularly from the perspective of accounting and financial reporting. We have hired an administrator and supported a Tacana CIPTA counterpart; together they have developed an administrative manual for CIPTA, which has been implemented over the last six months. This team is currently in the process of developing a personnel management manual to help CIPTA administer funds and personnel directly. Critically, this process has been developed in a participative manner with considerable input from the CIPTA directorate.

Additionally, the CIPTA administrative team has implemented a series of workshops and training events for members of the many natural resource user groups that are springing up across the TCO. These user group representatives include community foresters, native bee honey producers, the fishing association members, handicraft producers, chocolate producers, and ecotourism operators, as well as CIPTA directors. To date, the training events have received very positive feedback from participants. Training is and seen as critical by CIPTA in order to ensure efficient and transparent financial by managers who in many cases have limited experience or training in administration.

We continue to assist CIPTA in the implementation of institutional processes developed during previous fiscal years. These include a transparent monitoring program for activities undertaken by CIPTA representatives, consisting of bi-monthly work plans and corresponding reports, organized under objectives within the overall TCO management strategy, that require pre and post-approval by the CIPTA directorate. The project also supported the bi-annual General Assembly of CIPTA where the current President was almost unanimously re-elected along with many of the CIPTA directors.

This year CIPTA and our project team have also taken the first steps towards developing a Natural Resource Management Office within the CIPTA organizational structure. In the longer term, this is seen as a possible precursor to a full blown CIPTA technical body, perhaps emulating the model used by CABI in eastern Santa Cruz, Bolivia which is able to manage funds through a technical team overseen by a directorate. To date this process has included the support of the CIPTA forester and Natural Resources Secretary, and this year this extended to support a Tacana natural resources technician to assist in the monitoring and follow-up to the

plethora of community and supra-communal natural resource management initiatives across the TCO. Finally, with technical support and equipment from our project team, GIS capacity has been built into the Natural Resource Management Office, with training and capacity building for the Natural Resources Secretary, the CIPTA forester, and several more of the CIPTA staff and natural resource user group representatives. This is a critical capacity both in terms of natural resource management and planning, but also for conflict resolution related to land tenure and natural resource use.

A consultant paid for by WCS has also been assessing the economic viability and potential of differing natural resource management possibilities, considering the production capacity at community and TCO levels, as well as examining and identifying markets for different priority products such as timber, chocolate and ecotourism products. The results of this analysis are expected in August 2004.

### **Activity 3.6. Local Government Environmental Planning and Management Support**

In the rural area of San Buenaventura and Ixiamas, the Campesino Federation (FESPAI) is a very important actor for territorial planning; thus to develop a regional plan their vision must be incorporated. Our project has therefore provided them technical support for a strategic, integrated development plan that includes natural resource management and organizational strengthening. Their vision is inevitably more focused on agricultural production, but this strategy promotes sustainable agriculture through appropriate land use and is thus critical to halt the agricultural expansion along the colonization front. The final draft has been printed and will be presented in La Paz to attract support for its implementation. It is interesting that this initiative has shown a change in the vision once held by a large portion of FESPAI, which is interested in sustainable agricultural systems in an effort to stop the cycle of degradation-colonization-degradation. The consolidation of this change in vision is a keystone for the management of the conservation landscape, because it represents a greater commitment to the long-term sustainability of the region. The new vision has already been reflected by FESPAI's opposition to the arrival of further colonists to the region.

WCS also began working with San Buenaventura and Guanay, through the Leco Indigenous District, supporting the development of municipal environmental management initiatives, initially through the development of an environmental self-diagnosis. The next step is development of environmental management strategies. San Buenaventura and Guanay have identified their initial training needs as Environmental Impact Assessment and Sustainable Development, and Environmental concepts respectively. Additionally, the project facilitated a visit by representatives of the Leco Indigenous District to CABI (Capitania del Alto y Bajo Isosog) to discuss their more established experience with management of an indigenous municipality. Several institutions were contacted and are participating and supporting these processes including both the governmental and non-governmental sector: Popular Participation, Ministry of Sustainable Development, Ministry of Municipal Strengthening, La Paz Prefecture, PDCRII, Popular Participation/LIL Project of Municipal Environmental Management, KFW's BIAP project, AOS, Bosque y Comunidad and Conservation International.

In Apolobamba the inter-institutional coordination committee is under re-organization. We are awaiting the conformation of working commissions for different critical issues in order to define overall strategies and procedures--e.g. related to environmental planning and management for the multi-municipality in Apolobamba-- in order to ensure that our support responds strategically, thematically as well as spatially, to protected area requirements.

Our project team is working with the Planning Department of SERNAP to develop guidelines for environmental planning in municipalities around protected areas. This initiative was delayed because of personnel changes in SERNAP central office but is now advancing again. This is a necessary step to ensure greater complementarities between the different institutions working with municipal environmental planning and ensuring efficient response to the strategic needs of the protected areas.

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

**Activity 4.1. Policy Support**

The project team provided assistance in the review and development of SERNAP policy documents and regulations, e.g., formal observations regarding the proposal for the new Hydrocarbon law, the proposal for changes in the zoning categories used across the protected area system, the Guide for Development of Management Plans, monitoring guidelines, natural resource use management plan requirements, review of environmental impact studies presented for mining and hydrocarbon exploitation in Madidi and Pilon Lajas, and a review of research proposals presented for Madidi and Pilon Lajas.

In addition we have also been asked to provide additional technical follow-up of the two consortiums contracted for development of the GAP analysis and the Master Plan of the Protected Area analysis of connectivity needs of existing protected areas. The GAP analysis represents a key opportunity for ensuring the conservation of wide ranging wildlife in Bolivia.

At the request of the DGB, WCS will play an important technical role within a formal initiative to develop a national regulation for wildlife use, as well as a review of the in-country CITES legislation and more specific regulations for pressing wildlife management issues in Bolivia and the landscape, such as vicuña and spectacled caiman management. The DGB anticipates a four-pronged approach to developing these regulations, with biological, legal, economic and social aspects being considered. The project team will mainly be contributing to the biological and social aspects of these regulations in coordination with DGB staff and legal and economic experts hired by the DGB.

**Activity 4.2. Financing Mechanisms**

As part of the preparation process for the Madidi protected area management plan, we developed a financial strategy for its implementation, including a projection of recurrent and investment costs, a projection of current income, the identification of funding gaps and a financial plan to cover these gaps. One of these initiatives is being tested this year through the creation of a common fund to be administered by FUNDESNAP to generate resources for the protected area through the sale of souvenirs to tourists. Initially, three products will be tested, a video produced by CI, postcards produced by the WCS program, and maps produced by WCS but duplicated by AOS

The planned assistance to the Apolo, Charazani, Curva and Pelechuco municipalities in the development of financial strategies for the Environmental Planning document developed with project support in previous fiscal years, is being re-scheduled for FY2005. The previously scheduled management plan for the Apolobamba protected area is only now being implemented by a SERNAP/CI team, and financial strategies for this region should await the results of this plan that is being developed in coordination with plans for the four municipalities. Similarly, the SERNAP/WCS driven update of the management plan for the Pilon Lajas protected area is scheduled to be complete by June 2005, and at that stage a financial strategy for the implementation of the management plan will be produced by SERNAP and project staff.

The project team continued to provide technical assistance to CIPTA in the development of a series of more specific proposals to finance their Natural Resource Management Strategy. Unfortunately, strong proposals to OXFAM and CEPF were turned down. The project team is in the process of developing proposals for PUMA and Belgian Cooperation consideration, as well as identifying other options. This is a critical element of our institutional strengthening plan for CIPTA. We have been strengthening CIPTA's administrative capacity in order to improve their chances of channelling funds directly. Indeed, in an effort to promote the Tacana Strategy with potential donors and sources of technical assistance, a presentation at a prestigious cultural event is

scheduled for late July in La Paz. A similar presentation of CIPTA's strategy to a wider audience has been effective in the past. For example, as a result of a recent presentation at an event organized by the Vice Ministry of Indigenous Affairs, Danida (Danish International Development Agency), and the Dutch Corporation have formally approached CIPTA about the possibility of supporting the implementation of the strategy.

Finally, we have also been working closely with SERNAP and FUNDESAP to develop innovative ways of generating funds for an endowment for the Madidi protected area. This has focused around the idea of using species discoveries as a way of generating publicity for the park including the financial reality of managing an incredibly diverse and huge wilderness. The first test of this initiative concerning the discovery of a new primate species in Madidi will be launched in the coming months.

### **Activity 4.3. Threats Assessment Working Group**

The project team continued monitoring threats to the landscape through interpretation of satellite imagery, particularly the advance of the agricultural frontier, identifying factors related to higher rates of habitat loss such as roads and population size. Rates of deforestation and secondary forest re-growth were obtained for the southern and western portions of Madidi and Apolobamba.

In addition, threats to the area are being discussed in three fora, the inter-institutional committees of Apolobamba and Madidi, the Coordination Committee for the Amboró – Madidi Corridor (CCCAM), and by local actors in the Management Committee of Madidi. Two issues have dominated this discussion in Madidi: the hydrocarbon concession, and proposals to build a road from Apolo to Ixiamas. We have provided technical support to SERNAP in the analysis of the possible impacts of the different routes proposed. Our technical data included biological and environmental information, but also an economic and environmental cost assessment carried out by a civil engineer, Antonio Treviño, with experience with roads in mountainous terrain. This allowed SERNAP to evaluate different options. All of the proposed routes are economically unviable and damaging to the protected area, in particular those affecting the Tuichi river and the Tutumo watershed area. After the change of the Prefect, the prefecture has improved its treatment of the issue, showing some technical criteria, although not consistently because of the presence of some elements with political agendas related to Felipe Quispe (MIP political party). Nevertheless, it has been clear that a coordinated position between the Prefecture and the Ministry of Sustainable Development is necessary in order to manage conflicts related to development of infrastructure, such as roads.

The Ministry of Sustainable Development, through SERNAP, and the Prefecture developed a joint integral sustainable development proposal for Apolo and Ixiamas, including natural resource management projects, health, education, and improvement of community roads branching off the main road to Apolo. This has strengthened the Prefecture's presence in the area and has also shown the integral nature of the Management Plan developed for Madidi, as all the projects presented by SERNAP were those committed to in the 2004 Annual Work Plan. The conflicts provided several arenas where this conservation and development integral vision could be presented. As a result, different groups associated with productive activities such as coffee, tourism and incense in Apolo gained understanding of the park's objectives. Spontaneously they formed an Association of the Productive Sector organized in support of the park, because the protected area represents the only opportunity of support they have received. They also protected aggression against the protected area by a group representing a minority interest in illicit land speculation and timber exploitation.

The newly-formed Association of the Productive Sector also includes San Buenaventura, San Jose de Uchupiamonas and CIPTA who got our technical information through several venues in the Iturralde Province. We provided assistance to the park to permit the participation of productive groups in the negotiations regarding the roads, both in La Paz and Apolo. This has weakened the position of the extractive group pushing the road development for political, land speculation and timber interests. The most damaging proposals appear to have

now been dropped. Nevertheless, roads within and around the protected area will continue to be a threat and we will therefore need to monitor this and continue providing SERNAP and the local actors with information.

Another opportunity opened by the political conflict over roads in Madidi is the role of the Management Committee in developing an integral conservation and development vision for the region. We have provided technical support to SERNAP in promoting this discussion within the management committee and an initial identification of themes to be developed has been carried out. This replaced the initiative that had begun with the Territorial Planning office of the Ministry of Sustainable Development since their priorities have shifted since October 2003. Related to this we have helped SERNAP map investments in the region in order to allow them to show more clearly how the protected area is bringing tangible development benefits to the region, as well as the conservation benefits.

We have developed a work plan together with the Conservation Strategy Fund to consolidate these efforts, looking at improvements on the estimation of economic benefits brought to the region by the protected area, and comparing the estimated benefits provided by different road options, with alternative investment strategies related to productive activities as well as health and education. This work will begin in August 2004 and will also provide information to local stakeholders regarding costs and benefits associated with different scenarios of hydrocarbon exploitation.

Illegal mining in the Tequeje River, within the Tacana TCO has emerged as a new threat to the TCO and Madidi. Again, actions by the Ixiamas municipality, Iturralde sub-prefecture and La Paz prefecture have contributed to this threat. We have provided legal support to CIPTA to present their complaints to the Ministry of Sustainable Development and the La Paz Prefecture. The threat has been reduced but the legal process over administrative responsibility in the Ixiamas Municipality is still pending.

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

**Activity 5.1. Integrated Landscape Conservation Action Plan and Stakeholder Workshops**

Wider distribution of the Integrated Landscape Conservation Action Plan document only occurred in late October 2003 due to several changes in SERNAP leadership during 2003, and the update of this strategic 'living' document only entered the SERNAP agenda again recently. We consider SERNAP participation crucial at all stages of this process if we are to indeed strengthen this institution and foster landscape-scale planning within the Bolivian protected area system. Importantly, our project team has been identified to incorporate the concept of landscape species in two SERNAP initiatives to be conducted by TROPICO and ICIB consortiums respectively and funded by the World Bank GEF 2 program. The first of these concerns an overall Gap Analysis for biodiversity in Bolivia, and the second is the parallel development of a Master Plan for the Bolivian protected area system, which will include an analysis of the effectiveness of the current protected area system. The incorporation of landscape species, and hence the needs of large, wider ranging wildlife species will complement the more traditional biodiversity and endemism-driven analyses and hopefully be a critical analytical step towards safeguarding significant populations of large landscape species in Bolivia.

On the basis of the comments and proposals gathered regarding the document, the second edition of the 'Landscape Conservation Priorities and Actions' will also be prepared in close coordination with SERNAP, with a full draft expected by September 2004. This document will include more detailed environmental planning experiences, thereby creating a 'living' library of relevant landscape conservation planning documents. The document will review mechanisms to integrate multiple, spatially distinct, land-use planning initiatives into an overall landscape conservation strategy: for example, community and inter-community zoning, TCO land-use plans, protected area management plans, local government development proposals, and multiple-municipality planning. In upcoming editions, private land management plans and those of forestry concessions will also be analyzed.

Unfortunately, the regional planning initiative for the Bolivian Amazon region of the Vice ministries of Planning, Administrative Decentralization, and Environment and Natural Resources has been delayed due to more pressing political issues at the national level. Before this delay, the Madidi Management Committee, with significant technical and planning input from SERNAP and WCS, was taking the lead in this regional planning initiative for sustainable development in Northern La Paz. However, this process may now be salvaged through the new working relationship between SERNAP and the Madidi protected area and the La Paz Prefecture. With regards to the intended shift to smaller bilateral landscape workshops, much of this change in approach is reflected in the results reported for Activities 3.1, 3.2, 3.6, and 4.3, and in particular through the Madidi management team building coordination processes with FESPAI, PILCOL, and the San Buenaventura municipality.

***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 program is designed to develop and test wildlife-based, 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 that encompass a diverse array of land-uses, resource-use issues, and jurisdictional arrangements. To develop new approaches, facilitate and harmonize testing and implementation among these core sites, and capture the synergistic benefits of diverse experiences, a central coordination unit is charged with designing and managing the program. This unit guides development of landscape-scale conservation 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.

The New York CU team consists of a program director, two landscape ecologists, an outreach/communications coordinator, socio-economic monitoring specialist, biological monitoring specialist, two geographic information systems (GIS) analysts, program coordinator, and administrative assistant. Four of these positions are new WCS investments to the program this year, indicating increased WCS commitment to the development and use of landscape tools for site-based conservation. These new positions also indicate a shift in responsibilities, increasing our ability to extend the tools we are developing to a larger array of conservationists.

During FY 2004, the Coordination Unit in New York achieved most of its objectives for the year. Although the majority of the CU work is embedded in objectives 1-3 of this and other site-specific reports, the following section highlights some of those achievements that are not fully captured in these sections.

**Activity 6.1 Provide technical assistance to site-based conservation**

Coordination Unit support to field site operation has been reported in detail in previous sections of this report.

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

***Activity 6.2.1 Living Landscapes Program Technical Manuals***

The Living Landscapes Program promotes the implementation of effective conservation projects by encouraging practitioners to: (1) be explicit about what we want to conserve, (2) identify the most important threats and where they occur within the landscape, (3) strategically plan our interventions such that we are confident that they will help abate the most critical threats, and (4) put in place a process for measuring the effectiveness of our conservation actions, and using this information to guide our decisions. Towards this end, LLP has launched a series of manuals that provides guidelines and step-by-step instructions for field

practitioners. These will cover topics that include how to: select landscape conservation targets (landscape species), identify and map key threats, prepare a conservation strategy (conceptual model), and develop a monitoring framework. The manuals will be available in English, Spanish, and French.

To date, we've designed and piloted two manuals: one concerning participatory spatial assessments of human activities, and another focusing on how to build conceptual models for a project Belize (see Appendices 1&2 for latest versions<sup>1</sup>)<sup>2</sup>. We've distributed these within our GCP sites, and more broadly within WCS. In the next few months, after final revision, the manuals will be distributed more widely to our GCP partners and the wider conservation and development community. The threats assessment and mapping manual has already attracted external attention and is the basis for LLP providing technical assistance to the Coastal Zone Management Authority and Institute of Belize, the Belize Audubon Society, and World Wildlife Fund to conduct threats assessments of, respectively, the Turneffe Atoll, Lighthouse Reef and the barrier reef system in. Manuals on building monitoring frameworks, selecting conservation targets, and on intervention priority-setting are currently in draft form and will be field tested and finalized within the next six months.

#### *Activity 6.2.2 Landscape species approach (LSA) progress*

Based on the experience of the several WCS sites that have selected Landscape Species as strategic conservation targets, the landscape ecologist and the biological monitoring specialist are coordinating the revision of the logic for selecting species and the accompanying selection software. We expect to complete a major revision of the software (version 2.0) in November 2004 and distribute it to all sites planning to select landscape species.

The program has made significant progress in implementing the Landscape Species Approach, and a number of sites have generated biological and human landscapes, and developed a strategic monitoring program. There is still work to be done most importantly to develop a defensible process for setting population targets and combining this with estimated area requirements and habitat preferences to characterize the size and configuration of landscapes sufficient to conserve each landscape species – and thus the other species that they represent.

Finally, the assumptions underlying the LSA have yet to be tested from a theoretical standpoint. Towards this end, the Landscape Ecologist and other program staff tackled the question as part of the Annual meeting (See Activity 6.3.1). The results from the exercise that selected landscape species from a 30-year enforcement data set collected in Ghana were presented to the group. As mentioned in the last annual report, the preliminary results suggest that landscape species are among the most vulnerable to human threats, and that successful conservation of landscape species will protect other, less sensitive and less area-demanding species. The meeting participants proposed a number of additional tests and they will be further fleshed out and will form part of the ongoing LSA design process.

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

#### *Activity 6.3.1 Third Living Landscapes Program Annual Meeting*

The Third Annual Meeting of the Wildlife Conservation Society Living Landscapes Program took place at Chico Hot Springs, MT from January 10-18 2004, bringing together expanded LLP staff from the field and New York. The number of core sites for the Living Landscapes Program has expanded from three sites to the current twelve (which includes the six USAID/GCP-funded sites): Yasuni in Ecuador; Ndoki-Likouala in Congo; Madidi in Boliva; Maya Biosphere Reserve in Guatemala; the Eastern Steppe of Mongolia; Glover's Atoll in Belize; Greater Yellowstone in USA; Northern Plains of Cambodia; the Adirondacks in USA; San Guillermo in

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<sup>1</sup>

These are also available by email from [llp@wcs.org](mailto:llp@wcs.org) or on our website [www.wcslivinglandscapes.org](http://www.wcslivinglandscapes.org).

Argentina; and Coastal Patagonia. Each site (with exception of Ecuador and Patagonia) was represented by one or two staff members.

The program has done significant design and implementation work on selected conservation planning tools (conceptual models for projects, threats analyses, landscape species analyses, monitoring frameworks), and the meeting provided a venue for all the projects to share experiences and weigh in on the development of the remaining conservation tools (setting priorities within our “conservation landscapes” and/or determining target levels for “healthy, functioning populations”; sorting out priorities for interventions; determining how to operationalize monitoring programs). Proceedings of the meeting were compiled and distributed to participants. A copy is available upon request.

#### *Activity 6.3.2 CMP: leadership, design, writing and audits*

WCS continues to play a leadership role in the direction and activities of the Conservation Measures Partnership. WCS is working with CMP on: (1) piloting conservation audits, (2) evaluating the challenges to and benefits from accounting systems that allocate spending to conservation actions and not simply goods and services purchased, (3) developing a user-friendly system for identifying appropriate indicators for measuring conservation impacts, and (4) pilot testing tools that help project’s implement the CMP open standards for the practice of conservation. Craig Groves (part-time CU staffer) participated in the design and implementation of two multi-partner pilot conservation audits (led by WWF International) and David Wilkie (the socio-economic monitoring specialist) is organizing a pilot multi-partner, peer-review audit of the GCP Glover’s Reef project in FY05.

#### *Activity 6.3.3 Cross-organizational Learning Initiative*

David Wilkie chaired the GCP Cross-organizational Learning panel during the first year of its implementation. Funded through a separate Associate Award under the current Cooperative Agreement, the initiative gives GCP partners the opportunity to plan and implement joint activities that promote learning.

#### *Activity 6.3.4 Synthesis of Lessons from site-based conservation*

6.3.4.1. Analysis of the ecological risks and the economic and administrative feasibility of legalizing the commercial trade in bushmeat

In response to the Government of Gabon’s stated interest in legalizing the commercial trade in wildlife as a way to regulate the trade and generate tax revenues, LLP staff in collaboration with WCS Gabon and the Ministry of Wildlife and Hunting undertook an analysis of the ecological risks and the economic and administrative feasibility of such a proposal. Results, based on a comprehensive national survey of bushmeat trade and consumption, showed that even a 25% tax on the sale of bushmeat would be insufficient to cover tax collection costs, let alone the additional costs of enforcing the new tax laws. A paper describing the analysis is in press in the Journal of International Wildlife Law and Policy.

#### 6.3.4.2. Local engagement in conservation survey

The design for surveying a suite of WCS projects in the hope of teasing out guiding principles for engaging local people to promote effective conservation of wildlife and wildplaces is largely complete. A survey instrument has been drafted, and a review of the literature to determine what guidance is offered to conservation practitioners to engage local people in wildlife conservation is in progress. The survey work should be complete within the next six months. Analysis of the survey results and literature will produce a set of principles that other WCS project staff can use as a decision support tool to guide how they might engage local people in conservation at their site.



## **Activity 6.4 Application of Living Landscapes Program tools beyond core sites**

As we highlighted in the last Annual Report, the initial work supported by USAID/GCP continues to provide the foundation for a growing number of sites using WCS/Living Landscapes Program tools around the world, and the multiplier effect of USAID/GCP support has been significant.

### *6.4.1 Training workshops in the use of LLP tools*

Over the past few months, we have conducted a number of workshops at various field sites around the world that have centered on the use of conservation tools developed by the program. Adrian Treves (the outreach coordinator), and Kart Didier (the Landscape Ecologist) ran threats assessment workshops in Madagascar and Patagonia, Argentina. Adrian Treves also ran a joint landscape species selection workshop for field practitioners in Democratic Republic of Congo, Uganda, and Rwanda. Each of the above workshops included participants from national governments and NGOs of each of the countries cited. In each case, we have been gratified by the interest and commitment shown to the use of these tools by conservationists from other institutions, and look forward to conservation results that will stem from their use.

David Wilkie ran a workshop that entailed a spatially explicit threats assessment of Glover's Reef, Belize with local fishers, city council representatives, tour operators, fisheries cooperative members, biologists, government staff and NGO staff. Based on the results of this successful workshop, the Belize Audubon Society, WWF, and Belize Coastal Zone Management Authority and Institute have requested that we lead similar workshops for two other atolls in the Belize Reef system - Turneffe and Lighthouse Reefs, and the Barrier Reef as a whole. Outside funding has now been secured for these workshops and they will be run jointly by WCS, Belize Audubon Society, WWF, and CZMAI during September and October, 2004.

Similarly, Amy Vedder (program director) and David Wilkie led a workshop in Tefe, Brazil during April, with a series of eight Amazonian-Andes projects focusing on design of conceptual models and monitoring frameworks for their projects (six projects in addition to 2 GCP sites, two of which are managed by Brazilian NGOs). The approach was highlighted in an article published in the Economist (June 17 2004) (see Appendix 3 for a copy of the article).

### *6.4.2 Gap Analysis in Bolivia*

As mentioned in Activity 5.1 above, the Bolivian Government has embarked on a national level GAP analysis exercise to determine the effectiveness of the country's protected area system and to see if other vital areas should be set aside to ensure comprehensive conservation. In addition to an analysis of representation of different vegetation types in the protected area system, as well as an identification of biodiversity and endemism areas to be carried out by a consortium led by FAN, a leading Bolivian NGO, collaboration with the WCS Bolivia program will strengthen the focus on Landscape Species which are not valued by models based on diversity.

The exercise will involve the use of WCS's Landscape Species Approach for two different, but related purposes. First, existing protected areas will be evaluated to determine if they require further connectivity to ensure that wildlife needs are met. Second, an overall analysis will be done to identify national-scale Landscape Species and the scale of conservation activities necessary for their conservation (combinations of new protected areas, enlarged protected areas, functional corridors, regulation outside these reserves that promote conservation of the identified species, and international cooperation as determined necessary). The involvement of the WCS Bolivia Program in this important exercise and the application of the Landscape Species Approach by the government represents a significant endorsement of the utility of the Landscape Species Approach that WCS-Bolivia and the Living Landscapes Program have developed. Already there is interest expressed by conservationists in Argentina and Canada in using these national-scale techniques.

#### 6.4.3 Sharing of conservation tools among conservation NGOs

We are pleased to see that many elements of conservation planning tools being used or proposed by other conservation organizations are similar to those developed by the Landscape Species Approach. A number of our bulletins have been cited in a recent publication of the World Wildlife Fund: *From the Vision to the Ground: A guide to implementing ecoregion conservation in priority areas*<sup>3</sup> that outlines steps for conservation planning at priority sites within ecoregions. Our LSA concept of spatially mapping biological landscapes and human (social) landscapes, and then integrating the two to create a conservation landscapes is very much in line with those proposed by WWF as a means to identify conflicts and priorities for conservation action. Similarly, Conservation International in their proposed strategy for designing biodiversity conservation strategies - *Conserving the Earth's Living Heritage* - note the importance of "Landscape Species" as important tools for conservation planning and targets for conservation action, and advocate for the use of "conceptual models" to explicitly demonstrate how conservation actions are designed to abate key threats and thus conserve the targets of our conservation actions. These examples are further indication of the value of developing strategic wildlife-based tools for planning and implementing large scale, site-based programs, and sharing these tools both within WCS and more broadly across the conservation community.

#### Activity 6.5 Ensure coordination and communication services for the program

During this reporting period, all USAID reporting deadlines were met in a timely fashion. Annual Performance Monitoring Plans were prepared by field staff, and submitted by the program coordinator. Yemi Tessema (program coordinator), Amy Vedder, and David Wilkie collaborated in the preparation and attendance of annual GCP meeting in March.

Hard copies of the bulletins, resource CDs, and other information on sites and the program were distributed upon request as well as at workshops led and attended by program staff. Electronic copies of the materials were also made available on our website.

### III. Success Stories and Appendices

- Preliminary analysis of habitat loss for the landscape indicated that overall forest loss was low and significantly less than the Amazonian average, and that protected areas suffered less habitat loss than immediately surrounding non-protected areas.
- This year our research and monitoring team has established that Andean condor can be individually recognized at carcasses. As such the team has begun attempts to estimate the condor population size across Apolobamba and Madidi using a series of carcass sites. The condor population is small compared to other landscape species, and it is critical to assess its long-term viability and degree of isolation to design appropriate management protocols for this threatened species that is also a national Bolivian icon.
- The titi monkey discovered in 2002 and collected in 2003 (*Callicebus* sp. nov.) has been established as a new species for science via a manuscript by Wallace *et. al.* accepted for publication in Neotropical Primates.
- Over the last year, many of our co-management projects have begun to extend to additional communities generating supra-communal systems. This result in itself is a reflection of the power of these community projects and their potential for being self-sustaining. For most initiatives this multi-community involvement is critical in terms of market development and production capacity.
- The subsistence hunting management projects are ongoing in Carmen del Emero and Cachichira, and both communities have made preliminary management decisions regarding the reduction in harvesting

<sup>3</sup> [http://www.worldwildlife.org/science/pubs/vision\\_to\\_ground.pdf](http://www.worldwildlife.org/science/pubs/vision_to_ground.pdf)

of locally threatened wildlife species: marsh deer, lowland tapir, black spider monkey and red howler monkey. This year three additional communities have begun efforts to register the impact of their hunting activities: San Antonio de Tequeje, Villa Fatima and Esperanza de Enapurera. This means all communities in the entire lower Beni portion of the Tacana TCO are now participating in projects designed to assess the sustainability of subsistence hunting activities and take management steps to ensure sustainability over the longer term. San Pedro and Tres Hermanos, two additional Tacana communities recently requested our involvement in subsistence hunting management, meaning that we are moving towards a hunting management plan for the entire Tacana TCO based on source-sink management models.

- San Miguel is no longer participating in the hunting management project as the community has made a decision to cease subsistence hunting activities in exchange for a strong commitment to a community eco-tourism business. Program support has therefore shifted to assistance in tourist guide training efforts, as well as the identification of wildlife based tourism attractions and the design of standard tourist routes and activities.
- This year the CIPTA-based Tacana peoples fishing association in the River Beni region succeeded in gaining legal recognition from the Departmental government. This process also saw the departmental authorities assign 'local fishing inspector' duties to representatives of the 12 Tacana communities in an effort to manage fishing activities in the region.
- Our project team and CIPTA have continued to develop internal control and regulation mechanisms for the Tacana TCO. The natural resource access, use and management regulation for the Tacana TCO is another ground-breaking process that, in time, we fully expect to become another model for other indigenous groups, as well as for other key partners such as SERNAP and the DGB. The regulation establishes clearly who has access and/or use rights to the TCO's natural resources and under what conditions, as well as specifying a series of standard management practices for specific resource types. The sanctions section of the regulation still needs to be completed in an additional supra-communal workshop scheduled for September 2004. All 20 communities have formulated proposals for sanctions related to their specific natural resource use regulations.
- This year we continued to support three communities in the Apolobamba protected area (Pajan, K'apna and Huayrapata), in the implementation of projects to reduce crop damage by wildlife. The communities committed to and completed a fourth year of cornfield guarding activities despite a significant reduction in budget to remunerate guarding activities.
- Based on our experience with the environmental conflict surrounding the proposed road between Apolo and Ixiamas, we provided a technical diagnostic for SERNAP to inform the Ministry of Sustainable Development and the Prefecture of the real costs and the environmental consequences associated with this road project.

## **Appendices:**

1. LLP Technical Manual 1: Participatory spatial assessment of human activities-a tool for conservation planning
2. LLP Technical Manual 2: Creating Conceptual Models-a tool for thinking strategically
3. Economist article – Peering at the future