



Biodiversity Conservation at the Landscape Scale

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

Greater Madidi Landscape Conservation Area

**Implementation Plan FY09
October 2008 – September 2009**

Living Landscapes Program – Bolivia/Madidi
Wildlife Conservation Society
30 September 2008

USAID EGAT/NRM/Biodiversity
Leader with Associates Cooperative Agreement Award LAG-A-00-99-00047-00



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Program Goal

To ensure conservation of biological diversity in regions of global biodiversity importance, using a species-based landscape approach.

The Wildlife Conservation Society believes that protected areas must remain at the core of all nations' biodiversity conservation plans. These areas typically contain a higher diversity and abundance of plants and animals than landscapes managed primarily for economic use. Yet, parks and reserves are always embedded in larger, human-dominated landscapes and are seldom sacrosanct. Regardless of how large or small a protected area may be, the plants and animals it contains are often threatened either directly or indirectly by human resource use activities.

Management of parks and reserves cannot, therefore, occur in isolation from the surrounding human-dominated landscape. They must take into account where and how human activities conflict with biodiversity conservation, and where conservation adversely impacts human welfare. As human populations continue to expand over the next 50 years, the incentive for over-exploiting natural resources within and outside of protected areas will likely increase and the need for biodiversity conservation tools that address human-wildlife conflict will become even more important.

The Living Landscape Program promotes conservation of landscapes by focusing efforts on key animal species that require large areas for their conservation, that are particularly at risk because they cross land use and jurisdictional borders, and that, when protected, will have the greatest positive impact on biodiversity as a whole. These landscape species are highly mobile, vulnerable animal species, and their conservation fosters a focused and cost-effective way to retain a full complement of biodiversity and overall ecological integrity. To conserve these species, parks and reserves must be integrated into the broader landscape, a landscape in which people exploit natural areas and wild species to meet their socio-economic needs.

The Biodiversity Conservation at Landscape Scale (BCLS) program is designed to ensure biodiversity conservation in five core sites by identifying actions to conserve landscape species, and by increasing the capacity of local and national organizations to implement such actions. The five areas of global biodiversity importance for WCS involvement and USAID activity are currently:

- Greater Madidi Landscape Conservation Area (Bolivia)
- Glover's Reef Living Seascape (Belize)
- Maya Biosphere Reserve Living Landscape (Guatemala)
- The Eastern Steppe Living Landscape (Mongolia)
- Southern Sudan Transboundary Living Landscape (Southern Sudan)

Greater Madidi Landscape Conservation Area Project Strategy

This bi-national area of approximately 110,000km² includes a sweeping altitudinal range on the eastern flanks of the Andes, documented as one of the most species-rich regions of the world. Spectacled bears, jaguars, giant otters, vicuña, military macaws, maned wolves and Andean condors and their habitats are partially protected by five protected areas: three in Bolivia (the Madidi National Park and Natural Area of Integrated Management, the Apolobamba Natural Area of Integrated Management (ANMI), and the Pílon Lajas Biosphere Reserve and Indigenous Communal Land), and two in Peru (Bahuaja-Sonene National Park and Tambopata National Reserve). Yet these protected areas alone cannot adequately

conserve such wide ranging, resource-demanding species, nor is the current capacity of the protected areas services (SERNAP & INRENA) sufficient to protect the reserves. The unique biological richness of the region is threatened by unregulated land-use and resource extraction (e.g., livestock grazing, hunting) related to colonization, road development and hydrocarbon exploration and potential exploitation, is exacerbated by a legal/regulatory framework that is fraught with internal conflicts, and is challenged by the difficulties inherent in trans-boundary coordination.

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

Although selected landscape species (jaguar, giant otter, maned wolf, military macaw, spectacled bear, Andean condor, and vicuña) are famed for their extensive habitat requirements, there is a relative dearth of information regarding their basic biology as well as the magnitude of their spatial requirements. BCLS aims to ensure their conservation and the conservation of the biodiversity they represent. In the Greater Madidi Landscape Conservation Area, we are determining the spatial needs of ecologically functional populations of these landscape species, developing management strategies that include both protected areas and non-protected areas critical to their needs, and including the full participation of local people and other stakeholders in management decisions.

The integration of the biological and threat landscape models has allowed us to formally prioritize specific areas within the landscape for conservation intervention. For example, the conservation landscape helps us to identify potential corridors between large tracts of unthreatened and biologically important jaguar habitat, and identify specific communities whose natural resource use areas overlap with critical areas for spectacled bear conservation. The threat landscape models represent an extension of the original threats analysis, and in combination with the biological models, allow us to develop a spatially explicit threats-based approach to designing and developing conservation interventions. Thus, in addition to formally identifying a given community as a spatial element of the landscape, an examination of the specific community activities also allows us to tailor interventions accordingly. In addition, we can assess the global importance of the landscape for the conservation of these wide-ranging species, as well as identify neighboring areas that may be necessary for consideration for the long-term viability of landscape species populations.

The BCLS project has been working closely with the Takana people to win legal recognition of their traditional territory, the Takana Indigenous Communal Land (or Takana TCO), which borders a large portion of Madidi protected area. By working with the Takana, using the landscape species conservation approach, we will ensure that significant tracts of natural and semi-natural habitat retain a high conservation value for the focal landscape species and biodiversity as a whole. Because most wide-ranging species move throughout the lowlands, sound management in the TCO will also help to maintain the integrity of Madidi National Park. Our approach has now been broadened to include management visions for the Mosen-Tsimane people of Pilón Lajas and the Lecos people of Apolo and Guanay. For the latter two we are also assisting in the legal consolidation of their indigenous territories which overlap substantially with the Madidi protected area. At the same time, the landscape approach provides the local population with incentives to improve land-use practices and policies through the development and support of community-based natural resource management projects. Our project has also provided key technical support in the development of the first Management Plan for the Madidi protected area and a second revised version of a Management Plan for the Pilón Lajas protected area and indigenous reserve. Efforts will now concentrate on the implementation of these plans. Appropriate integration of the Madidi and Pilón Lajas management plans and management plans for other territorial units in the region is critical because of the montane forest corridor shared by these protected areas and the need to coordinate protection activities and standardize tourism regulations which involve many of the same actors.

Finally, we have taken various steps toward building integrated and participatory planning processes across several

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

At a larger scale, our project staff shares experiences in the landscape to develop methodologies and lessons that may be applied in a more extensive corridor. Indeed, our efforts have expanded into including conservation planning and intervention design and monitoring efforts in southern Peru and the Bahuaja-Sonene and Tambopata protected areas with INRENA and a Peruvian NGO, Fundacion Cayetano Heredia.

To ensure conservation of the Greater Madidi biological diversity, the BCLS program focuses on five interrelated objectives, and a sixth objective which is the mandate of the WCS/NY Coordination Unit:

- 1) Measure baselines and monitor landscape species and the landscape context in which they are found;
- 2) Facilitate community-based natural resource management across the landscape;
- 3) Strengthen institutional capacity in natural resource conservation and management;
- 4) Promote the development of national policies that support the landscape conservation approach;
- 5) Elaborate a participatory, integrated landscape conservation action plan; and
- 6) Guide the design and testing of wildlife-focused planning.

Total Anticipated Level of Effort in FY 2009

Greater Madidi Landscape Area: \$1,234,107 (USAID/GCP: \$142,107; USAID/ICAA: \$480,000; USFWS: \$17,000; Moore Foundation: \$115,000; MacArthur Foundation: \$120,000; Blue Moon Fund: \$133,000; WCS: \$227,000)

IMPLEMENTATION PLAN: FY09

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

Level of Effort (Total Objective 1): \$200,000 (USAID/GCP: \$5,000; USAID/ICAA: \$35,000; USFWS: \$0; Moore Foundation: \$45,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$115,000)

Activity 1.1. Describe the Ecological Context of the Landscape

Our team will continue to describe mammalian diversity, distribution, relative abundance, and population densities across new sites in the landscape. Camera trapping efforts, line transect surveys and other distributional inventories will provide information regarding mammalian communities, with particular emphasis on ungulates, cavimorph rodents and primates, critical for the development of sustainable hunting models for lowland indigenous groups. In late 2008 these efforts will focus on two areas: firstly the final step of a repeat of our 2002 surveys in the Tuichi and Hondo Rivers of the Madidi protected area, extended into the Quiquibey River of the Pilon Lajas protected area and indigenous territory. This survey is currently of particular importance given the apparently imminent onset of further hydrocarbon exploration across all three river basins. As such, apart from further documenting the ongoing wildlife recovery for the Madidi protected area monitoring program, these surveys will provide a more up to date baseline of wildlife for protected area managers and indigenous organizations to measure potential impacts of planned exploration.

In October and November of 2008, we will also lead an expedition to the Madidi River to document biodiversity in the immense natural grasslands of northern La Paz. This trip will include participation from the National Herbarium, the New York Botanical Garden, Amazon Conservation Association and ARMONIA. It will focus on plants, birds, fish, bats, medium and large-sized mammals, maned wolves, giant otters, marsh deer, and jaguar. The section of the Madidi River and adjacent forest and savanna has been recently identified as a potential Department-level protected area by the La Paz Prefecture following a WCS analysis completed in FY08, and we hope results will help further promote the creation of a protected area in the pristine La Paz grasslands.

Similarly, the BCLS team will continue to update forest cover loss and vegetation change analyses for targeted areas in the landscape. Building on up to date analyses conducted for the Takana TCO during FY08 as part of a carbon-offset avoided

deforestation strategy, we will work with the Pilon Lajas and Madidi protected area administrations in identifying additional priority areas for analysis including the Yacumo-Rurrenabaque road and limit to Pilon Lajas, as well as the Apolo grasslands in Madidi.

Level of Effort: \$60,000 (USAID/GCP: \$0; USAID/ICAA: \$15,000; USFWS: \$0; Moore Foundation: \$10,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$35,000)

Activity 1.2. Research and Monitoring

The BCLS GIS team (Siles, Villanueva, Wallace) will continue to work with the Fundación Cayetano Heredia in Peru to include the Peruvian protected areas and buffer zones in the bi-national landscape species analysis for the Greater Madidi-Tambopata Landscape. Efforts during FY09 will focus on the completion of a third layer for inclusion in the conservation landscapes analysis - Opportunity Landscapes - that map conservation opportunities as a function of different actor's attitude towards conservation and sustainable natural resource management, and more importantly the publication of the overall GIS Landscape Conservation analysis in a book and accompanying DVD.

Wallace (the BCLS Director) will complete two Bi-National Distribution and Conservation Assessments through workshops with experts selected from a previous questionnaires for Andean condors and Andean bears, the first with the Dirección General de Biodiversidad y Area Protegidas (DGBAP), ARMONIA and BIOTA in Bolivia and Cayetano Heredia University and INRENA in Peru, and the second with Cayetano Heredia University in Peru, and the Center for Biodiversity Conservation and Genetics in Bolivia. This will help us to assess the importance of the landscape population in national and international terms and will also allow us to highlight the need to have national, bi-national and international level conservation strategies for these wide ranging species.

Efforts to estimate jaguar population sizes across differing vegetation and human influence zones will focus efforts in the Tuichi, Hondo and Quiquibey Rivers in Bolivia in October 2008, and Madidi River in October and November 2008 (see Activity 1.1). Line-transect surveys in these areas for white-lipped peccaries and other hunted mammals will supplement our population estimates and refine habitat sustainability models for these species and provide important reference points with respect to hydrocarbon exploitation in Madidi and the potential creation of a Departmental protected area along the Madidi River (Wallace & Ayala).

Level of Effort: \$80,000 (USAID/GCP: \$5,000; USAID/ICAA: \$15,000; USFWS: \$0; Moore Foundation: \$25,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$35,000)

Activity 1.3. Ecological Studies of Special Elements

In December 2008, Martinez, Wallace and Vilma Hidalgo, a Bolivian undergraduate thesis student, will complete the field work of a one year investigation into the behavioral ecology of the Bolivian primate endemic, *Callicebus olallae* in the area of Santa Rosa de Yacuma in the Beni grassland-forest. This project is generating data on the diet, movements, and general ecology of this endangered Bolivian endemic. Assuming further funding can be secured from small grant donors, in April 2009 we will begin the process of habituating groups of the second Bolivian primate endemic, *Callicebus modestus*, and the investigation will continue until late June 2010. The findings are being shared with local Municipal authorities for inclusion in the management plan development for a recently declared Municipal Reserve in Santa Rosa de Yacuma.

Level of Effort: \$60,000 (USAID/GCP: \$0; USAID/ICAA: \$5,000; USFWS: \$0; Moore Foundation: \$10,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$45,000)

Threats Addressed by Objective 1:

Biodiversity surveys provide critical information on species richness and abundance in largely undocumented regions, thereby contributing to biodiversity databases for the landscape, as well as providing on-the-ground information about threats and related species' status. Assessing biodiversity in areas threatened by oil exploration, hydro-electric proposals, road construction and colonization will enable us to identify particularly fragile habitats and species and suggest mitigation measures. For example, the range-restricted primate endemics of the Santa Rosa de Yacuma are threatened by the planned paving of the 'Northern Corridor'. Our research is being provided to relevant decisions makers and the environmental mitigation team, and these titi monkeys may become the flagship for municipal efforts to establish a municipal wildlife reserve around the Yacuma River, the most important eco-tourism destination in the region at the moment. The biodiversity assessments will also represent the baseline for monitoring the success of any subsequent intervention designed to address specific threats. Preliminary assessments of tree, avifaunal and mammal communities have provided management

information to protected area administrators, including baseline data for future monitoring programs. This information will be critical for monitoring the effect of imminent hydrocarbon exploration and potential exploitation. Assessments have also been critical for zoning purposes in the new management plans for these protected areas. For example, our research efforts provided the starting point for discussions with otherwise reticent municipal authorities regarding the establishment of a 37,000 hectare municipal reserve to protect the non-protected side of the Madidi River at this site. This municipality has declared this Reserve and we have worked with authorities to produce a management plan for the Reserve. In addition, support to thesis projects increases local technical capacity.

Increasing our monitoring and collection of ecological data for our landscape species will allow us to continually improve the biological, threats and conservation landscapes which form the core of the landscape conservation approach, reducing the number of assumptions currently used to design these landscapes. In addition, information regarding landscape species' abundance and home ranging requirements will assist us in establishing reasonable landscape population estimates and thereby assess the global importance of the landscape for the conservation of these species. Baseline ecological studies will reveal if we need to expand activities into adjacent wild areas to protect a minimum viable population, as has been the case with condors. In turn, we will be better equipped to identify and mitigate current threats to the health and survival of landscape species and the biodiversity they represent, including habitat degradation or loss, hunting and fishing. Further, we will be better able to predict and prevent future conflicts between landscape species and increasing human activities, which include livestock predation and crop damage in the highlands.

Distribution maps of landscape species, combined with spatial analyses of existing and potential threats to the landscape, have enabled us to identify critical areas for conservation action. These maps will also provide a distributional baseline for managers of the three Bolivian protected areas and neighboring indigenous communal lands. By incorporating park guards into this activity, we are also providing a series of training and motivational opportunities for protected area staff. Similarly, training of Takana community representatives is building interest and capacity for further Takana participation in conservation efforts.

In addition to landscape species, species such as Andean cat, Andean deer, Yungas brocket deer, Bolivian swallow-tailed cotinga, Yungas woolly monkey, short-eared dog, bush dog, marsh deer, and various endemic titi monkeys are all either globally threatened or have an unknown taxonomic status. Additionally, all have very narrow habitat requirements and are, therefore, particularly susceptible to habitat degradation and loss. Information on the conservation status of these species will indicate the health of those species and habitats we consider special elements of the landscape. Our research has already established that Madidi should be considered a regional stronghold for white-lipped peccaries, jaguars, spectacled bears, giant otter, Andean condors, and marsh deer. Given this regional importance, special management considerations are required for these species.

Building this information into conservation plans and management for Madidi, Pilón Lajas, Apolobamba, Bahuaja-Sonene, and Tambopata protected areas will help to address weaknesses in both the capacity to conduct research and the administration of these conservation and management units.

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

Level of Effort (Total Objective 2): \$550,000 (USAID/GCP: \$65,000; USAID/ICAA: \$175,000; USFWS: \$0; Moore Foundation: \$55,000; MacArthur Foundation: \$90,000; Blue Moon Fund: \$85,000; WCS: \$80,000)

Activity 2.1 Community-based Natural Resource Management

Many of the community projects have assumed a supra-communal nature, as projects have expanded to additional communities. This result in itself is a reflection of the power of these community-based projects. For most initiatives this multi-community involvement is critical in terms of market development and sustained long-term production capacity. In addition, the fact that community forestry initiatives in the TCO Takana are paying self-imposed taxes towards both individual communities and the representative organization is testament to the overall sustainable management vision of the indigenous territory. Our current, "second-phase" support concentrates on strengthening participatory mechanisms and informed decision-making about the management of natural resources and distribution of obtained benefits, as well as the development of 'scaling-up proposals' for direct funding to local, established initiatives from national and international sources. First phase 'start-up' support for interested communities has typically included introductory workshops on wildlife

management, as well as participatory meetings to design a community-based appraisal of their natural resource management needs and interests.

In FY08 the CIPTA (Consejo Indígena del Pueblo Takana) native bee honey production initiative successfully implemented two projects with local sources of finance (PUMA Foundation & Biocommerce). In FY09 the project team will concentrate on providing technical assistance to help CIPTA and the five participating communities (Santa Fe, San Pedro, Tumupasha, Santa Rosa de Maravilla & Tres Hermanos) in the installation of approximately 600 hives that have been constructed and are gradually being installed. Gradual installation is necessary in order to allow successful hives to be separated, thereby reducing the necessity to harvest bees from wild hives. In addition, experience over the last seven years has shown that because of the limited flying radius of native Meliponidae bees, care has to be taken to avoid locally flooding an area with semi-artificial hives, with a maximum of around 10 hives present at any given site. As such, in order to have 1000 operational hives, the 5 communities will need to identify at least 100 sites within the community lands for hive location. A realistic target for FY09 would be to have 650 hives in operation. In this way we will be advancing toward a goal of 245 Kg/year of honey, equivalent to at least US\$ 3100 by the end of FY09. Spread across the 34 members, this revenue will represent 28% of their annual income, after payment of 8.5% of profits to the community and association fund. Commercialization this coming year is targeted for community natural resource management trade fairs in the city of La Paz at \$20 a liter.

We will continue giving technical support to community monitoring of subsistence hunting by five communities (Carmen del Emero, San Antonio del Tequeje, Cachichira, and Villa Fatima in the Takana TCO, and Asunción del Quiquibey in Pilon Lajas). This year we will work with CIPTA to assist them in developing a program with the community schools to provide a mechanism for incorporating hunting monitoring into classroom activities, with analysis built mathematics, Takana language and science lessons. It is hoped that this will provide operational sustainability to the hunting monitoring activities, as well promote the ideas of hunting sustainability with Takana children. Using data gathered to date we will also explore the possibility of commercializing peccary hides using harvest quotas derived from subsistence hunting levels in the Takana TCO. Peccary pelts have a high value in the luxury glove market in Europe.

The project team (Miranda, Lara and Wallace) will continue to assist CIPTA and the communities in the implementation of control mechanisms for wildlife management decisions, such as hunting quotas for known locally threatened species. Monitoring of these control mechanisms will help assess the effectiveness of community decisions to shift hunting to less threatened prey species and away from over-hunted species such as tapir, spider monkeys, howler monkeys and marsh deer.

Meanwhile, results from subsistence hunting harvest models will continue to be verified and triangulated with data three other variables. For all species, we have added data on catch per unit effort analyses and variations of mean and modal distances from the community of hunted animals, as well as the overall species structure of the hunting harvest as measures of sustainability. These three measures are all possible with self-monitoring data and do not require major investments to census wildlife, which tends to be time consuming and arduous as well risky in terms of opening up new areas of forest for trail-based hunting. As such we consider a combination the most replicable and appropriate measure of hunting sustainability. During FY09, the BCLS team (Wallace, Miranda, Carvajal) will prioritize at least four major publications in international conservation journals summarizing the lessons learned from self monitoring hunting records with the Takana, as well as developing the structure for a future volume on wildlife management in the Takana TCO.

In FY09, we will also complete the previously delayed Wildlife Management, Conservation and Monitoring Strategy for the Takana TCO. This activity builds on the four meetings with communities conducted in FY07. The strategy itself considers actual wildlife use, potential management options, threatened species conservation, interactions with other land uses in the TCO, and will develop an explicit monitoring strategy for implementation in the communities. One recommendation that is being considered is that all communities within the Takana TCO sign up for a streamlined subsistence hunting monitoring program that will include monitoring of observations of priority and indicator species identified at the workshop, such as jaguar or giant otters. Related to this activity, the BCLS team will also continue to assist CIPTA in the consolidation of the Wildlife Management Productive Association, Animalucana.

Our team (Lara, Miranda, Wallace) will work with CIPTA and the communities of the lower Rio Beni (Cachichira, Villa Fatima, San Antonio de Tequeje, Carmen del Emero) in the implementation of the formally approved management plan for

the sustainable harvest of the spectacled caiman in the Takana TCO. The CIPTA management plan is one of the first complete local management plans for spectacled caiman in the country. CIPTA considers the management of caimans within the TCO as another potential model for testing their internal control and regulation mechanisms surrounding natural resource management. The second year's harvest was completed in late September 2008 and during FY09 our support will focus on five activities; a) development of a formal report for CIPTA, the Takana communities, and the Bolivian government (DGBAP) regarding the second year's harvest, b) distribution of benefits from the second harvest to participating hunters and communities, c) design and implementation of a monitoring program and new census between April and June 2009, d) subsequent submission and approval of a new four year management plan to replace the two year management plan that has just expired, and e) the implementation of the third year's harvest between July and September 2009. In addition, at least two articles detailing the management experience in the Takana TCO will be published in scientific journals during this reporting period.

The BCLS team (Miranda, Lara, Wallace) will continue to accompany CIPTA in the commercial fishing management activities with the Takana Fishermens Association, and at least six Takana communities along the Beni River. This year the Takana Fishermens Association would like to reach agreement with all fishermen using the upper Beni River regarding the development and subsequent implementation of a management plan for commercial and subsistence fishing activities that they have identified over the last five years as necessary steps towards sustainability. Although this represents a massive challenge and will not be without problems, it is another measure of how far the Takana have come in terms of their leading role in promoting sustainable natural resource use in the region.

In terms of commercialization of fish products, the BCLS team will assist CIPTA in the design and implementation of a harvest center for fish, caiman skins and potentially ornamental fish and other wildlife products in the future in San Buenaventura. Our support will include organized harvests for the commercialization of fresh fish in the Rurrenabaque local market and La Paz fish fairs, administrative assistance for the Takana Fishermens Association in their commercial harvesting efforts, the implementation of comprehensive and efficient monitoring efforts tied to the commercial harvest centers, the publication of finalized specific regulations for fishing activities, and the operations manual for the commercial harvest centers. At the same time, studies to document the mercury content in commercial fish and spectacled caiman meat will be completed in FY09 and action plans developed, if appropriate. Finally, by the end of FY09 we anticipate that a management plan for the control and commercialization of the invasive paiche (*Arapaima gigas*) in the Takana TCO II will be designed with Takana communities along the Madre de Dios River.

CIPTA will formally submit the ornamental fish management plan developed in FY07 to the Dirección General de Biodiversidad y Areas Protegidas (DGBAP) for approval once the formal legislation has been approved. Assuming this management plan is approved, the BCLS team will support CIPTA and the participating communities in an experimental harvest of ornamental fish in the Takana TCO between July and September 2009. If international export is not possible at this stage, then we will target local markets in La Paz and Santa Cruz.

The BCLS team (Lara, Painter, Wallace) will continue to work with CIPTA to identify potential funding sources for the gradual implementation of the Takana TCO Tourism Strategy. The strategy prioritizes community eco-and ethno-tourism in the San Miguel del Bala eco-lodge, the Tuichi River tourism camp, and Tumupasha's cultural and scenic areas. This will include looking for alternative sources of finance for an existing proposal to support the construction of an outpost lodge on the Tuichi River linked to trekking routes from Tumupasha, thereby linking the San Miguel lodge with Tumupasha in a possible package for tourists. In addition, the BCLS team (Miranda, Wallace) will assist the San Miguel del Bala community and ecotourism lodge in the implementation of monitoring fauna through application of a tourist monitoring sheet for mammals and by planning subsistence hunting activities with full participation of the Madidi protected area. The latter activity was delayed due to problems in the continuity and experience of Madidi protected area's staffing over the last two years. These activities will ensure that the two community activities remain sustainable and spatially independent from each other, as well as helping to document the overall wildlife situation in the Takana TCO and the Madidi protected area, as well help document the population recovery of longer lived and slow reproducing species, particularly the larger primates.

The BCLS will continue to provide technical support for the sustainable forestry initiatives within the Takana TCO. There are now 15 initiatives, nine of which have approved management plans, totaling ca. 60,000 hectares with ca. 2,700 hectares

harvested on an annual basis. Including the other six initiatives that are in the process of approving management plans, will then encompass 86,014 hectares under forestry management in the Takana TCO and 3364 hectares harvested annually. We will work with CIPTA to complete the remaining management plans that are pending in the Superintendancy.

During FY09, we will continue to assist CIPTA in completing the audits of each community forestry initiative and ensuring the continuation of these management activities. We will also continue the systematization of databases from each initiative using standard formats from BOLFOR II where possible, and then working with CIPTA to analyze data to assess whether the 20 year cycle within the formally approved management plans is a realistic hiatus between harvests. We will develop an integrated monitoring strategy for gradual implementation in the various community forestry initiatives in the Takana TCO as part of the overall development of an overall updated strategy for the Takana people (Activity 2.3). Another major challenge remains in assisting CIPTA and the community forestry initiatives in the development of proposals to allow them to progress along the production chain: for example, by being able to transport logs to saw mills and/or purchase portable saws for processing 'waste' wood or the branches of felled trees. Together these actions would improve the profitability of forestry activities and provide a more consistent source of income for the members. It is possible that we could link such efforts to the Forestry Management arguments within the REDD (Reduced Emissions from Forest Deforestation and Degradation) initiative and potentially fund them (Activity 4.1).

During FY09 the BCLS will continue to assist the Takana communities and CIPTA in chocolate production. We will continue to support CIPTA in searching for funds to finance the recently completed comprehensive proposal for chocolate production intensification within the Takana TCO and will also focus on installing administrative capacity in the Association. Critically, CIPTA and the Takana communities have decided to prioritize wild chocolate production, either through harvesting wild groves and/or installing artificial and organic groves using seedlings within the forest. Wild chocolate, as found naturally in the forest, has a higher fat content than 'criollo' chocolate and as such is considered of superior quality. And it is also environmentally friendlier because it is wild and not genetically modified. This year the goal will again be to harvest 1000 kg of chocolate during the harvesting season (January–March) and sell this to a national buyer. The longer term goal of the Takana is to access specialized international organic chocolate markets where fair trade and certification may increase the value of the chocolate.

The BCLS team (Alandia, Ayala) will continue to provide veterinary advice and training modules regarding livestock management within twelve Takana communities. This technical support aims to increase incomes of domestic households by reducing avoidable livestock mortalities and increasing production, and ensure that livestock are managed adequately in terms of disease prevention and timely responses to reported episodes -- thereby reduce hunting pressures. This year the support will be offered to three additional communities, with at least 8 local Takana trained in livestock management using the same format as those previously trained in FY07 and FY08. The BCLS team will also assist CIPTA in the organization and implementation of the First Encounter of Local Technicians in Livestock Health in the Takana TCO where participants in the TCO Health and Disease Network will receive updates in training, interchange their experiences in the implementation of improved livestock and human health practices, and be able to make suggestions on how to improve the network and the overall CIPTA veterinary program. This meeting and additional visits from the CIPTA veterinary and BCLS staff will help ensure the adequate and effective management of the community veterinary health kits, as well as the successful implementation of the health calendar in the Takana TCO communities. Finally, in late October 2008, with support from the WCS Field Veterinary Program, we will facilitate the visits of medics from Mount Sinai Hospital in New York who are interested in developing a program related to human health in the Takana TCO.

In addition, the BCLS team will continue to conduct fieldwork in three main areas: a) livestock de-parasitation and vaccination campaigns in the Takana communities, b) livestock sampling efforts in at least 15 Takana communities, and c) the beginning of sampling of hunted animals in the Takana TCO. In turn these efforts will allow: a) the development of databases and epidemiological maps of disease of domestic animals in at least 15 Takana communities, b) a baseline on domestic animal health in the Takana TCO, and in the future, c) a baseline on wildlife health in the Takana TCO prioritizing the most important species in terms of taxonomic links to domestic livestock such as ungulates and game birds.

As important will be the technical and veterinary support through the CIPTA veterinary to commercial livestock management projects on cattle in Carmen del Emero, Carmen Pecha and Macahua, and chickens in Capaina.

Draft management plans exist for all three communities involved in incense management in the montane forests of Madidi are still awaiting formal approval from the Bolivian government. Continuing changes in senior staff in the Madidi protected area, as well as conflicts in the Apolo region, have limited progress in this activity but we anticipate that a recently more stable SERNAP central office staff will promote the approval of the management plans in FY09.

Our project staff (Lara, Miranda, Wallace) will provide logistical, financial and technical support for the final stages of the community natural resource management projects selected in the third competitive round of assistance grants and the fourth round scheduled for November 2008, based on CIPTA's sustainability criteria. Implementation of these projects represents significant steps in the process of community capacity building for natural resource management initiatives. Successful grants from the third round include commercial chicken production in Capaina, tourism upgrade in San Miguel del Bala, trekking tourism in Tumupasha, wild chocolate production in Tumupasha, cattle management in Carmen Pecha, and adventure tourism in Villa Alcira.

During the second quarter of FY09 the BCLS team will also organize and conduct the third Encounter for Community Natural Resource Management Initiative in Northern La Paz. This groundbreaking meeting will build on the previous two Encounters that identified common threats and opportunities to community natural resource management initiatives and identified possible solutions in response to this analysis. This activity was delayed due to an ongoing BCLS sponsored and technically led analysis of the legal situation of community natural resource management businesses, including an assessment of a number of ongoing legislation proposals. This analysis is important as it a) responds to the conclusions of the second Encounter, and b) will provide the basis for the a proposal being developed by the CIPTA in coordination with the BCLS, as well as BOLFOR and TNC. In the third encounter the community participants will develop a priority action plan for community initiatives and relevant authorities, as well as discuss the CIPTA proposal for specific legislation on community businesses based on sustainable natural resource management.

Level of Effort: \$230,000 (USAID/GCP: \$35,000; USAID/ICAA: \$70,000; USFWS: \$0; Moore Foundation: \$5,000; MacArthur Foundation: \$15,000; Blue Moon Fund: \$65,000; WCS: \$40,000)

Activity 2.2 Community Mitigation of Human-Animal Conflicts

By June 2009 the project team (Ticona, Alandia, Wallace) will draw activities to a close with the seven communities (Cañuhuma, Medallani, Caalaya, Lagunillas, Curva, Nube Pampa and Puyo Puyo) in Apolobamba who are monitoring family-level corrals for nocturnal livestock protection. This represents a community-based solution to human-animal conflicts. In each of these communities, the WCS team is working with community members to document the number of livestock owned by each family and to monitor losses throughout the year. This year, focus will be placed on gathering data monitoring data and also reviewing community perceptions towards wildlife and the Apolobamba protected area following project implementation. The main focus of this year's activities will be to produce and submit for publication at least three scientific articles in international conservation journals summarizing our findings, as well as at least two local publications for outreach in participating communities as well as communities in general in Apolobamba.

A WCS Field Vet Program grant to Fabian Beltran regarding the health status of domestic (alpaca and llama) and wild (vicuna) camelid populations in Apolobamba has concluded and during the first three months of FY09 a series of local publication will be printed summarizing results and methods for local technicians and communities, as well as at least two scientific articles for publication in international journals.

Level of Effort: \$35,000 (USAID/GCP: \$5,000; USAID/ICAA: \$0; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$30,000)

Activity 2.3 Land Tenure and Territorial Planning

The land-titling process for the Takana TCO is almost complete, with 388,000 hectares titled to the Takana management organization (CIPTA) to date. With financial and administrative support, our Takana legal team will continue the process to secure the final ca. 18,000 ha of lands that are still formally owed to the Takana.

In addition, the legal team will continue to support CIPTA in the legal consolidation of a second territorial claim from the Takana TCO in the northern portions of the Greater Madidi Landscape. CIPTA presented this second TCO demand to address the territorial needs of four communities settled on the Madre de Dios River. These communities represent key allies for the Madidi protected area in this isolated region. Their territorial claim includes Brazil nut-rich forests and natural

savannas, which are a complement to the Pampas del Heath savannas found within Madidi. The process to consolidate this second TCO has been delayed due to lack of funding for the government office responsible for land-titling, INRA, and resistance linked to intended colonization efforts in extreme northern La Paz. In September 2008, after protracted and conflictive negotiations, another round of formal commitments and associated agreements by the government to CIPTA and the Confederación de Pueblos Indígenas del Oriente de Bolivia (CIDOB) was made, and INRA will begin work in land titling fieldwork in October 2008. Hopefully, by the end of FY09 the land titling process for the second TCO will have been completed.

Similarly we (Ossio, Loayza, Painter) will continue legal and technical support to CIPLA (Consejo Indígena del Pueblo Lecos de Apolo) and PILCOL, the two Leco grass-roots organizations, in the consolidation and management of their TCO's in the Apolo and Guanay regions of the landscape respectively. CIPLA have already received the majority of their territorial claim and PILCOL have two polygons titled with another two in the final stages of formal land titling. We will also specifically support indigenous territorial planning and management by CIPLA (Lecos Apolo Indigenous Organization), PILCOL (Lecos Larecaja Indigenous Organization) and CIPTA (Takana People's Indigenous Organization). In northern La Paz, CIPLA represents 17 communities in the municipality of Apolo, PILCOL 33 communities in the municipality of Guanay and CIPTA represents 25 communities in Ixiamas and San Buenaventura communities. During FY09 territorial plans and sustainable development visions for CIPLA and PILCOL that are in the final stages of development will be published, and an updated plan for the Takana people will combine a recently completed plan for the Takana TCO II with the ongoing process of updating the 2001-2005 plan for the Takana TCO I. CIPTA and the Takana have decided to combine the planning processes to produce an integrated Takana vision for the two TCO's as a way of looking for efficiency for activities that span both territories, as well as a means of continuing to foster relations between communities of both TCO's and to promote Takana identity.

Level of Effort: \$230,000 (USAID/GCP: \$5,000; USAID/ICAA: \$85,000; USFWS: \$0; Moore Foundation: \$45,000; MacArthur Foundation: \$75,000; Blue Moon Fund: \$20,000; WCS: \$0)

Activity 2.4 Environmental Education

In FY09 we will continue to produce a series of reports in English and/or Spanish describing the lessons learned to date in our landscape. To facilitate this effort, the local BCLS team will retreat for a third Writing Workshop for ten days in mid-January, with each participant charged with producing at least one draft manuscript as a contribution to documenting concrete management experiences. This year workshop activities will place particular stress on completing publishing processes for three key areas of USAID BCLS support: subsistence hunting management, human-animal conflict management, and landscape conservation planning.

The project will also continue in the production of a series of posters, booklets and brochures for local distribution to urban centers and rural communities, highlighting the importance of the Greater Madidi Landscape and its wildlife, including four booklets regarding Andean condors, white-lipped peccaries, titi monkeys, and the world record biodiversity of the Madidi protected area. In addition, we will produce community manuals for subsistence hunting monitoring and spectacled caiman management based on lessons learned in the Takana TCO. We will also booklet and a map summarizing a Masters thesis on the Inca and Conquistador history in northern La Paz and its relevance on natural resource management. Similarly, as an outreach activity at the national level we are developing an analysis of the relevance of fauna in iconography, both historical and current, for publication in local press. These outreach mechanisms will also be incorporated into planned visitor centers in Rurrenabaque and San Buenaventura.

Level of Effort: \$55,000 (USAID/GCP: \$20,000; USAID/ICAA: \$20,000; USFWS: \$0; Moore Foundation: \$5,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$10,000)

Threats Addressed by Objective 2:

Community-based natural resource management projects are critical for the long-term conservation of biodiversity within the landscape, as they promote the concept of natural resource conflict mediation at a local scale, improve the capacity of local people to design and execute natural resource management projects and, most critically, promote community-based decision-making processes, with internal regulations and controls for natural resource management - including wildlife.

In the highland portion of the landscape, human-animal conflicts frequently prevent communities from recognizing the benefits of forests and biodiversity. Instead, their perceptions center on the problems they see originating from the forest.

This creates the need to document, measure and develop solutions to key human-animal conflicts. An evaluation of the extent and distribution of crop damage and livestock loss, as well as of its perception by local people, is the basis from which possible solutions to this problem can be proposed. Demonstrating an interest in these conflicts and working toward sustainable solutions will improve local peoples' perception of wild places and protected areas, reducing direct pressures on identified problems from wildlife species, as well as habitat destruction and corresponding declines in wildlife populations and biodiversity in general. The information gathered will also contribute to a better understanding of human-environment interactions in the region, while building national and local capacity to conduct applied conservation research and natural resource management programs.

In the lowland portion of the landscape, a natural resource management strategy will promote productive economic options that are compatible with long-term sustainable management of the Takana territory, thereby stabilizing the eastern forest boundary of Madidi protected area. The Takana land-use plan enables zoning and enforcement to prevent both colonization and inappropriate land-uses. Approved internal control and regulation mechanisms will strengthen CIPTA and help ensure sustainable resource management. Discussions of benefit and profit distribution will further encourage the notion of long-term financial planning and equity within the natural resource user groups as well as CIPTA. In addition, these steps will help stress the collective nature of the TCO land title and the need to consider the long-term sustainability of activities beyond the needs of a single community.

Legal tenure within protected areas, as well as for indigenous communal lands, is a necessary first step toward sound natural resource management. One of the largest obstacles for appropriate management outside protected areas is the lack of clarity regarding limits and responsibilities over the management of a given area. The planning and zoning processes realized in the framework of the Takana TCO Strategy and the Madidi and Pilon Lajas protected area management plans consider the needs of the local population as well as those of biodiversity.

The zoning process includes actual and predicted areas of use by communities. However, there is still a lack of clarity regarding land tenure in the Apolo region of Madidi and in the Apolobamba protected area, because the legal titling process halted following political unrest and a conflict regarding political limits of Apolobamba.

Our project staff will also work to change attitudes toward destructive land-uses and the sometimes negative perception of protected areas by strengthening the ability of teachers to convey critical information regarding the costs and benefits of unplanned natural resource use to their pupils. For the Bolivian population in general, posters and informative radio and television shows will also transmit the value and purpose of the Madidi protected area and the Takana TCO, along with information regarding local natural resource management.

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

Level of Effort (Total Objective 3): \$197,000 (USAID/GCP: \$10,000; USAID/ICAA: \$130,000; USFWS: \$17,000; Moore Foundation: \$15,000; MacArthur Foundation: \$0; Blue Moon Fund: \$18,000; WCS: \$7,000)

Activity 3.1. SERNAP Institutional Strengthening

This year we will work with SERNAP's central office in developing an information system and guide to protected area management. We will develop a pilot integrated information system on conservation value, natural resource management and development projects for northern La Paz. This activity will be carried out with the Institute of Ecology, initially using the information base developed by WCS and Institute of Ecology projects. Once this information is placed in a GIS-linked program called GEONETWORK, we will hold an inter-institutional meeting to secure buy-in from other organizations that may have information for northern La Paz, such as Conservation Strategy Fund, Amazon Conservation Alliance and Conservation International. The CAF (Andean Development Corporation) has expressed interest in establishing linkages to this study as a more focused case study linked to their CONDOR GIS information system for infrastructure analysis initiative.

The implementation of the monitoring program of Pilon and Madidi will continue to feed back to SERNAP to provide lessons learned and models for replication and we will work closely with the Director of Monitoring and his staff to ensure this. Finally, the support we are providing to indigenous people around Madidi through their regional representative organization CPILAP will continue to provide inputs for the development of new participation mechanisms in the protected

area system, such as the signed agreement between CIDOB and the Bolivian government for greater participation in the management of the nations protected areas.

Level of Effort: \$20,000 (USAID/GCP: \$0; USAID/ICAA: \$18,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$2,000)

Activity 3.2. Protected Area Support and Staff Training

We will continue to support protected areas in the landscape. In the case of the Pilon Lajas protected area, we will support environmental education, monitoring, and the implementation of the co-management model with the Tsimane and Mosen Regional Council, whose indigenous territory overlaps completely with the protected area and which represents 26 indigenous communities.

With the Madidi protected area we also will support environmental education and monitoring programs. We will provide them with technical support to generate proposals and provide technical supervision for community based natural management projects. Finally we will support their efforts for integration of local stakeholders in their monitoring program.

Level of Effort: \$47,000 (USAID/GCP: \$0; USAID/ICAA: \$30,000; USFWS: \$17,000; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$0)

Activity 3.3. Wildlife Management Program (Institute of Ecology)

We will continue to support the Journal Club and student theses, and to provide work experience projects with the Institute of Ecology and in coordination with the Biology Department Faculty of the Universidad Mayor San Andres (UMSA). The journal club aims to promote critical thinking among Biology students, as well as Department and Institute staff. This forum also fosters discussion of current themes in conservation biology, ecology and behavior. This contact with the local university is also a way for us to identify potential thesis students or young professionals to join our and our local partners' conservation efforts.

In FY09 we will fund only two new theses, as emphasis will be on the completion of a series of previously funded grants. Wallace currently supports fifteen undergraduate and postgraduate thesis students as primary or secondary supervisor. Complete drafts have been approved by Wallace for six of these students and formal defense should follow in the first three months of this fiscal year. Last year five undergraduate and postgraduate theses and twelve student projects were completed and defended. The goal at the end of this fiscal year will be to have 3 to 5 theses pending in write-up and review phase.

In FY09 the BCLS veterinary program will also work with students from local universities in La Paz and El Alto to support two student undergraduate projects, as well as one undergraduate thesis documenting and the use of medicinal plants for the treatment of livestock in the Takana TCO. The results will then be shared with all Takana communities and this thesis will be produced with a formal agreement with CIPTA, the Takana and the participating communities.

In addition, in FY09 we will again be awarding two small grants and additional technical support, one to the Institute of Molecular Biology and Biotechnology (IMBB) and another to the Institute of Ecology (IE) to implement joint activities with WCS related to the Greater Madidi Landscape. IMBB and WCS will jointly conduct a conservation genetics study on jaguar. The grant to the IE will continue efforts to summarize biodiversity and conservation information for the northern La Paz Department region. This activity is being conducted with SERNAP and is an experimental phase that if successful may be extended by the Vice Ministry with additional Universities in Bolivia to house systematized data on biodiversity and conservation. By the end of this fiscal year the information center for northern La Paz will be up and running at the IE, and manuscripts from conservation genetic grants to IMBB regarding endemic monkeys and jaguars will have been submitted for publication.

Level of Effort: \$30,000 (USAID/GCP: \$0; USAID/ICAA: \$10,000; USFWS: \$0; Moore Foundation: \$15,000; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$5,000)

Activity 3.4. Monitoring Strategy Implementation

This fiscal year the project team (Painter, Ayala, Siles, Villanueva, Wallace) will continue to implement the species and threats monitoring strategy for the Madidi and Pilon Lajas protected areas that is centered on surveillance activities by protected area staff. We will continue to provide assistance in data entry linked to a GIS system, incorporating species and threats monitoring, and analyzing the results gathered in coordination with the Park Guards and the protected area

administrations. At the request of the park director, we will begin work with the Apolobamba park guards to incorporate them into the monitoring program that, following a trial period, has been modified to account for glitches and is now generating data in Madidi and Pilon Lajas.

Similarly, at the request of the Bahuaja-Sonene park director in southern Peru, we will also develop a training workshop for park guards from all five protected areas (Madidi, Pilon Lajas and Apolobamba in Bolivia and Tambopata and Bahuaja-Sonene in Peru) to be held in Rurrenabaque during FY09. This effort was also one of the conclusions of the recently third workshop on bi-national conservation planning and monitoring. During FY09 we will complete a locally published book and DVD summarizing the landscape conservation analysis that we have completed in collaboration with the Fundación Cayetano Heredia in Peru as well as INRENA and SERNAP, the protected area authorities in Peru and Bolivia respectively.

In addition, as mentioned above, we will analyze specific studies designed to provide more thorough data coverage for critical areas and issues related to the Madidi protected area such as the Tuichi valley wildlife recovery in the face of proposed and apparently imminent hydrocarbon exploration.

On the basis of conceptual models developed for each activity, identification of key indicators, and our newly structured internal information management system, we continue to monitor our interventions and linking them to our activity-based accounting. During FY09 we will transfer these systems that are currently available in PowerPoint (Conceptual Model) and Excel (Monitoring Framework) to new integrated software, MIRADI, developed by the Conservation Measures Partnership. This will form part of a rigorous testing process for this software and is expected to a) streamline monitoring data, and b) provide a structured vehicle for sharing our overall conservation practitioner experience with other conservation projects within and beyond WCS. By the end of 2008 we will place much of this information on a WCS-Bolivia website that is currently under development with support from the WCS Information Technology Office in New York.

We will continue monitoring threats to the landscape through interpretation of satellite imagery, particularly the advance of the agricultural frontier, identifying factors associated with higher rates of habitat loss such as roads and population size (see Activity 1.1). By developing this internal capacity, we will later be able to promote similar internal initiatives with local actors. This is necessary to improve their capacity to link interventions to results and avoid conflicts due to misinformation. It will also be critical for the development of a regional strategy for carbon-offset financial support that we are developing with local actors, the Bolivian government and with support from WCS New York.

Level of Effort: \$22,000 (USAID/GCP: \$10,000; USAID/ICAA: \$12,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$0)

Activity 3.5. CIPTA Institutional Strengthening

A crucial element of the Natural Resource Use and Conservation Strategy for the Takana 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. An efficient and transparent administrative and accounting system will continue to assist CIPTA and the natural resource user groups in attracting direct financing for management activities from local and international donors, as well as safeguard the communities, CIPTA and the TCO from financial mismanagement. Our project team (Wallace, Lara) will continue to assist CIPTA in implementing the institutional processes developed during the previous fiscal years, such as activity planning, budget development, and communication at general meetings. This fiscal year CIPTA will continue to directly administer funding provided by WCS in quarterly installments, an arrangement that has proved successful in FY08. This represents an important step in increasing their fiscal management capacity. Similarly, this year CIPTA will be responsible for the direct employment of most of the technical staff and the employment of a custom designed accounting system, as well as the production of quarterly reports in response to an agreed work plan. This year CIPTA intends to undergo a formal external audit process as another step towards financial and administrative capacity and WCS staff will assist CIPTA during the audit. It is important to mention that the CIPTA-WCS experience of gradual administrative capacity building is being adopted by other indigenous organizations such as CIPLA, PILCOL and CPILAP as the model on which to begin administrative capacity building and institutional capacity.

In addition, we (Lara, Rosas, Haches) will continue to conduct short courses in administration for CIPTA staff, community representatives, and, critically, for members of the different user groups that are forming across the TCO to manage

finances (see Activity 2.1). These courses are accompanied by ongoing administrative support to natural resource groups as required. We now have a full time member of staff (Haches) to help monitor our formal agreements and associated budget execution with a number of local partners but with particular emphasis on the indigenous organizations in the landscape (CIPTA, PILCOL, CIPLA and CPILAP). During FY09 we will (Haches, Rosas, Lara, Wallace) draw on our experiences and develop administrative training manuals for use in short courses with local communities, productive associations for natural resource management, and indigenous representative organizations.

Over the last eight years CIPTA has made significant progress in its organizational and administrative capacity, and continues to experience the emergence of a number of natural resource management user groups or associations (fifteen forestry associations, a cacao association, a handicraft association, the San Miguel tourism association, a native bee honey association, and under the banner of an overall wildlife management association, specific spectacled caiman management, fishermen's, and ornamental fish associations. In this light, CIPTA and our technical team have identified communication and organizational capacity as a major priority. The CIPTA directorate is aware of the need for developing capacity across the institution, and in the context of the emerging organized user groups, this need will be even greater. Following the revision of the CIPTA organizational structure in FY08, and the election of a new directorate in April 2008, this year we will continue to assist in the natural resource management initiatives as well as generating additional financial resources for Takana communities. This will now take the form of senior technical advice and we will work with CIPTA in the implementation of a Technical Committee for advice in the management of both indigenous territories. In addition, we (Lara, Miranda, Wallace) will work with CIPTA in the development of a comprehensive monitoring plan which will form an integral part of the integrated Sustainable Development Strategy for both Takana TCOs (see Activity 2.3).

Another major challenge in FY09 will be to work with CIPTA and its constituent communities in the development of an approved structure, guidelines and regulation for a Trust Fund to manage potential longer-term sources of finance such as Avoided Deforestation (REDD), and provide the administrative and technical transparency necessary to access major sources of donor support.

Level of Effort: \$48,000 (USAID/GCP: \$0; USAID/ICAA: \$30,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$18,000; WCS: \$0)

Activity 3.6. Local Government Environmental Planning and Management Support

Following the conclusion of the La Paz and Beni Prefectures analyses of opportunities for Departmental Protected Areas, we will explore possibilities for implementing a specific proposal, the proposed Pampas del Norte protected area in the northern La Paz grasslands. Indeed, the surveys along the Madidi River will provide critical biological information with which to help justify the formal declaration of this area. Nevertheless, there is much to be done before this area is formally declared and recognized, including determining whether it should be proposed as a Departmental or Municipal protected area.

During FY09 we will complete the process of strategic planning with the Association of Municipal Governments in Northern La Paz. This represents the most concrete case for a formal landscape scale land use plan, at least for the Bolivian portion of the landscape, that incorporates the spatially explicit data that has been gathered over the last nine years.

Efforts linked to the Municipal Tourism Reserve created around Alto Madidi in the Ixiamas municipality and the associated constructions of an ecotourism lodge are on hold until the land tenure situation within the Reserve is clear. The land will probably be titled to the local Campesino Federation, which is interested in the ecotourism option, but it remains unclear as to when actual land titling will occur. Once land titling occurs, we will finalize the formal approval process for the management plan for the Reserve, as well as begin steps to build the ecotourism lodge in coordination with the Ixiamas municipality and landowners.

Level of Effort: \$30,000 (USAID/GCP: \$0; USAID/ICAA: \$30,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$0)

Threats Addressed by Objective 3:

By strengthening the ability of municipalities to participate in landscape conservation planning, we will promote appropriate land-use, and avoid conflicts with municipal development plans on such conservation initiatives as road building and colonization. Analyzing and addressing conflicts in the northern La Paz region will enrich our 'threats and

opportunities' analysis and will also provide insights into the management of these and future conflicts. A better trained park guard corps will also provide an early warning system and monitoring tool for other more direct threats such as mining, hunting, disease, fire and unregulated tourism that can result in habitat loss or declines in wildlife populations.

A monitoring strategy is a vital ingredient of adaptive management. Increasing the capacity of SERNAP, DGBAP, CIPTA, PILCOL, CIPLA, CRTM, CPILAP and the Institute of Ecology to design and implement monitoring strategies will improve protected area administration and natural resource management. Performance monitoring will allow management agencies to strategically modify the design and location of their interventions. It will also hone in-country technical capacity to evaluate, support, propose and implement wildlife management.

Successful management of the TCO is dependent on CIPTA continuing to adopt a democratic and participatory natural resource strategy. A critical aspect of this challenge is the development of legally, technically and administratively-sound natural resource user groups and formal associations as a means of ensuring sustainable economic activities for communities and local people. Such a strategy will allow CIPTA to engage the support of its local constituency and relevant national institutions, thereby increasing its capacity to implement management actions, integrate its land-use vision into a landscape context, and promote the conservation of biodiversity. An efficient and transparent administrative system will guarantee the standing of CIPTA with donors and constituent communities alike, and help to ensure a future of sound natural resource management.

OBJECTIVE 4: Promote the development of national policies that support the landscape conservation approach.
Level of Effort (Total Objective 4): \$200,000 (USAID/GCP: \$15,000; USAID/ICAA: \$125,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$30,000; Blue Moon Fund: \$30,000; WCS: \$0)

Activity 4.1. Technical and Policy Support

During FY09, the BCLS team will continue giving technical advice and support for developing regulations regarding management of natural resources within protected areas. More specifically, we hope to be able to complete regulations for sustainable natural resource use in Madidi, using our experience with incense management as a model. Changes in SERNAP staff have continued including the Madidi protected area staff, which has another new director. These changes have meant that the process of re-engaging in a series of activities following the original crisis in 2006 has suffered additional delays and efforts have focused more on resuming basic management activities as opposed to more strategic interventions.

Our current relationship with the Vice Ministry and the Dirección General de Biodiversidad y Areas Protegidas (DGBAP) which includes a formal agreement and a coordination committee to allow the transparent evaluation of our work whilst guaranteeing its incorporation in Ministry files, will also allow the continuation of the review of final drafts of a series of regulations relating to biodiversity conservation and natural resource management, as well as support to the Scientific Authority (Noel Kempff Mercado Natural History Museum) in the design of sustainability criteria, evaluation criteria, and guidelines for the management of wildlife in Bolivia. For example, we will continue to work on the final draft versions of the ornamental fish regulation, and have recently been invited to participate and provide key data on medium and large sized mammals, fish, reptiles and amphibians for the ongoing revision of the Bolivian red data list for threatened species.

Additionally and in close coordination with the Conservation Strategy Fund we will continue to assist the Environment office of the Vice Ministry in reviewing impacts related to road infrastructure in the Greater Madidi Landscape through the provision of information regarding biodiversity and potential impacts. This year this activity will continue to respond to analytical needs regarding proposed hydrocarbon and hydroelectric initiatives within and bordering the landscape. We are also coordinating with our local indigenous partners regarding the feasibility of establishing carbon offset initiatives within the landscape and these initiatives are being communicated to the Bolivian governments Climate Change Office. WCS, along with CIDOB, has been invited to participate in the technical committee of the REDD initiative.

During this fiscal year we plan to continue our work with CPILAP (Central Pueblos Indígenas de La Paz) to provide support to their initiatives regarding indigenous people's participation in protected area management, in particular Madidi and Pilon Lajas protected area and in integrated territorial management. We will also support the training modules and workshops to develop consensus positions regarding a) projected hydrocarbon exploitation in Northern La Paz, b) land

titling and management, c) decentralization and governance proposals as they affect indigenous territorial management and d) gender. We will also be working to build administrative capacity within CPILAP. CPILAP represent 117 communities of Takana, Mosen, Lecos Larecaja, Lecos Apolo, San Jose de Uchupiamonas, T'simane and Esse Ejja people in Northern La Paz department.

Level of Effort: \$50,000 (USAID/GCP: \$15,000; USAID/ICAA: \$35,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$0)

Activity 4.2. Financing Mechanisms

Our financial sustainability support falls into two categories: 1) support to our local partners in the development of proposals to a variety of local and international funding agencies and develop subsequent project management capacity, and 2) development of new initiatives for sustainable financing, specifically the possibility of Avoided Deforestation projects under the REDD initiative.

In FY09 we will continue to assist CIPTA and the Takana TCO in the development of proposals to finance their Natural Resource Management Strategy. This is a critical element of our institutional strengthening plan for CIPTA. We are also exploring long-term financing mechanisms, including support in the development of relationships with other institutions and international donors. For example, the development of administrative capacity and increased responsibility is fundamental in order for CIPTA to receive funds directly from donors. In the same light we are working with PILCOL, CIPLA and CPILAP in the development of proposals and will continue to do so in FY09, assisting in reporting and management of successful proposals to the Swiss Corporation, Biocultura.

This year we will continue to work on a series of specific and regional proposals to develop carbon-offset initiatives on the basis of Reducing Emissions from Deforestation and Degradation (REDD) payments. A draft project information document developed for CIPTA and the Takana TCO in the previous fiscal year has already received positive feedback from a couple of experts in the field. We will now work to produce a full project document for submission for formal approval by the CCBC and VSC standards before discussions with potential buyers. It is probable that this will include contracting a specialist company for the creation of the final proposal. At the same time we will work with our local partners, particularly CIPTA, on an approach to this potential source of funding, the requirements necessary to secure support, and we will support the development of institutional policies, including the development of clear statutes, mission statement and regulations for the operation of a Trust Fund where the benefits of potential REDD deals will be housed. Critically, we will also continue our work with the Bolivian government through the relevant Vice Ministries to ensure government participation in regional and specific proposals, as well as to assist them in the definition of an overall policy position.

Level of Effort: \$85,000 (USAID/GCP: \$0; USAID/ICAA: \$25,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$30,000; Blue Moon Fund: \$30,000; WCS: \$0)

Activity 4.3. Threats Assessment Working Group

In general, we discuss and analyze threats to the landscape at a number of forums: the inter-institutional committees of Apolobamba, Pilon Lajas and Madidi; the Management Committees of the Madidi and Pilon Lajas protected areas; the bi-national planning workshops between INRENA and SERNAP; the Biodiversity Platform in Bolivia formed by the relevant government offices and a number of funding agencies and non-governmental organizations; and in Peru the Inter-Oceanic Analysis Group that specifically discusses threats related to the ongoing construction of this major thoroughfare.

This year we will continue to provide support to CPILAP in developing a position regarding the proposed hydrocarbon exploration in the Madidi region. This is becoming more critical because the hydrocarbon concessions have just been passed to PetroAndina (PDVSA & YBPF) and there are clear intentions to exploit hydrocarbons in the concessions that overlap Madidi protected area and several indigenous territories. The environmental license for an area between the Pilon Lajas, Madidi, and Apolobamba protected areas, overlapping with the PILCOL indigenous territory and the Mosen indigenous territory, is currently under consideration and exploration activities are expected to begin by the end of October 2008.

This year we will also continue work with the Conservation Strategy Fund in a scenario analysis of the Northern Corridor road proposal and associated potential mechanized soya agriculture.

Level of Effort: \$65,000 (USAID/GCP: \$0; USAID/ICAA: \$65,000; USFWS: \$0; Moore Foundation: \$0; MacArthur

Foundation: \$0; Blue Moon Fund: \$0; WCS: \$0)

Threats Addressed by Objective 4:

Long-term financial stability is required for central government, municipalities and local organizations to implement landscape conservation activities. Strengthening these stakeholders' financial stability is a necessary component of building their capacity to manage the area. Financial considerations are also a critical component to a long-term vision of sustainable development for the region.

Regulations of wildlife- and non-timber forest product use are necessary both at the protected area level and the national level in order to improve management of existing harvesting activities and to promote new productive activities which are compatible with biodiversity conservation. Regulations are needed to address the direct threats of over harvesting as well as to habitat loss resulting from a lack of alternatives to destructive and unprofitable slash and burn agriculture.

The proposed roads will open previously inaccessible areas to settlement, gold mining, and other productive activities. They will promote speculation in lands being used by indigenous people and Brazil nut collectors and will fundamentally change the regional economy and associated patterns of land use. New soybean varieties that appear to do well in areas characterized by marginal soils and a susceptibility to flooding, coupled with the advent of biofuel development in the region, means that the two highways will encourage agro-industrial development in areas that were previously thought to be unsuitable for intensive crop production. Hydrocarbon concessions that cover an important part of the region, and significantly overlap with national protected areas and indigenous lands, will further infringe on existing land rights and impose limitations on options promoting sustainable development and conserving biological diversity.

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

Level of Effort (Total Objective 5): \$40,000 (USAID/GCP: \$15,000; USAID/ICAA: \$15,000; USFWS: \$0; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$10,000)

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

We have completed the manuscript of a summary of the Greater Madidi Landscape Conservation Program's results to date for distribution and this will be published before the end of FY09 as part of events designed to mark ten years of the WCS program in the Madidi landscape. This report documents the successes and challenges we have faced over the last nine years. Similarly, by the end of FY09 a comprehensive program website will be launched with most text materials already available in one language and currently under translation. This website will also have all documents and products from the program posted and available for download.

During FY09 we will also complete the publication of the results of the three bi-national workshops on Landscape Conservation Planning in a printed document as well as a DVD with the spatial GIS data available. This document will summarize landscape species selection, habitat suitability modeling for selected landscape species (biological landscape), spatially explicit map of human activities (human landscape), as well as the development of conceptual models for bi-national threats.

Level of Effort: \$40,000 (USAID/GCP: \$15,000; USAID/ICAA: \$15,000; Moore Foundation: \$0; MacArthur Foundation: \$0; Blue Moon Fund: \$0; WCS: \$10,000)

Threats Addressed in Objective 5:

Conflicts between local development plans and conservation plans will be identified, and appropriate stakeholders and actions necessary to address them will be outlined. Engagement of local stakeholders will promote biodiversity conservation outside protected area boundaries. Our inter-institutional coordination efforts will also assist in the monitoring of direct threats and the development of a long-term, coordinated vision of conservation and sustainable development on a regional scale. By identifying key gaps in activities and funding, we will help to make sure that all threats to the landscape will be properly addressed. This holistic view will increase integration and coherence in conservation and development planning documents and processes across the landscape, thereby improving likelihood of long-term success in both.

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

promote learning across sites and beyond

The NY-based Coordination Unit (CU) of the Living Landscapes Program (LLP) is designed to develop and test wildlife-focused, landscape-scale approaches to biological conservation across multiple sites. To ensure the widespread utility of these new conservation approaches, the program is testing them within landscapes that encompass a diverse array of ecological features, land-uses, resource-use issues, and jurisdictional arrangements. The CU is charged with designing and managing the program to develop new approaches, to facilitate and harmonize testing and implementation among these core sites, and to capture the synergistic benefits of diverse experiences. This unit guides the 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.

During FY09, the priority for the Coordination Unit will remain working with field sites to promote adoption of best practice tools for effective conservation at a landscape scale, consolidating lessons learned and focusing to an even greater extent on sustainability of key activities. As this is the last year of GCP, we will work closely with our field sites to develop close-out reports that effectively capture key approaches, core activities and lessons learned in a concise and engaging format.

FY09 Level of Effort: (Total Objective 6): \$ 47,107 (USAID/GCP: \$32,107; WCS: \$15,000)

Activity 6.1 Provide technical assistance to site-based conservation

Members of the NY Coordination Unit will provide technical input to all field site operations detailed in the previous sections of this implementation plan, some of which will involve consultation at sites, analysis in NY, and ongoing communication, advice and support, as needed. This year we will role out the use of Miradi at all GCP sites as a way to integrate many of the strategic planning and adaptive management tools that LLP has developed over the life of the GCP and to provide vital field feedback to the Miradi development team at the Conservation Measures Partnership and Benetech. Dr. Wilkie will also work closely with The Nature Conservancy to explore options for WCS gaining access to the ConPro web database developed by TNC to upload Miradi project files and conduct cross project synthesis and analysis.

With the addition of the South Sudan Transboundary Landscape to our portfolio of sites the NY Coordination Unit will provide targeted assistance to the new landscape team (and their Ugandan transboundary colleagues) to make use of LLP strategic planning and adaptive management tools – most specifically threats assessments, conservation target selection (landscape species), conceptual modeling, and monitoring frameworks. We will also explore the conservation value of and opportunities for modeling biological and human landscapes across the Transboundary area.

Results/Outputs:

Focused and timely technical assistance and collaboration provided to field sites based on needs, leading to conservation landscape strategies; targeted monitoring of effectiveness; and implementation of processes to increase participation of stakeholders; pilot testing of Miradi and user feedback for improvement of present modules and development of future modules.

Level of Effort: \$15,000 (USAID/GCP: \$15,000, WCS: \$0)

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

Activity 6.2.1 Living Landscapes Program technical manuals

The Living Landscapes Program will continue to produce brief how-to guides, called Technical Manuals, after field testing and fine-tuning the methods at several WCS field sites. In FY09, Dr. Didier will complete one technical manual describing the procedures and steps for setting spatially explicit conservation priorities using LSA products. The manuals are designed to provide clear and practical instructions to field practitioners on using a number of conservation tools. The manuals will be translated into Spanish and French and disseminated to WCS projects, partners (government, NGO and local), and other

conservation colleagues.

Activity 6.2.2 Landscape Species Approach progress

In FY09, LLP-NY staff will conduct a second 2-week course on the Landscape Species Approach for interested staff from WCS projects around the world. The course will be designed to give a conceptual overview of all the LSA tools and to provide field staff with an opportunity to learn the details of the tools and apply them to their individual sites. As in FY08, we will provide an overview of Miradi and mentor staff to begin to develop a Miradi database for their project.

Activity 6.2.3 Integrating strategic planning and project management

LLP-NY staff will continue to work with our field sites and WCS NY operations (i.e., regional program and accounting staff) to roll out a process for integrating strategic planning with operations planning and reporting. With the release of Miradi 2.0 and the incremental roll out of this desktop solution to landscape scale planning and reporting, we will work with WCS NY operations staff and field staff to provide feedback to the Miradi development team as to how best to improve modules for integrating strategic planning, work planning and activity costing (budgeting) modules.

Results/Outputs:

Technical manuals designed, tested in the field and distributed in hard copy and electronically (on CDs and on-line) for wider distribution. Technical feedback, based on field experience, to the Miradi development team for fine tuning or developing new modules in Miradi that integrate project strategic planning with annual financial management.

Level of Effort: \$10,000 (USAID/GCP: \$5,000, WCS: \$5,000)

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

Activity 6.3.1 Annual meeting of WCS/LLP Staff

In this last year of the GCP the Living Landscapes Program plans to bring together the project leaders of many of our landscapes (USAID supported and some not) in NY to conduct a forward looking exercise with senior WCS/NY regional staff that will help build on the success of the GCP and guide our conservation investments and tools development into the future.

Activity 6.3.2 CMP: leadership, design, writing and audits

LLP-NY staff will continue to play a leadership role in the identification, design and implementation of Conservation Measures Partnership activities. We will work closely with all CMP members to identify best-practice tools to use as models for development of Miradi modules. We will provide CMP with ongoing lessons from our efforts to integrate project strategic planning and annual financial management, and offer recommendations as to how this experience can help guide the development of Miradi.

Activity 6.3.3 Development and dissemination of final reports for each site: showcasing and sharing lessons learned

LLP-NY staff will work closely with our field sites to generate close-out reports based on the format proposed by WCS and fine-tuned by USAID.

Results/Outputs:

Close-out reports for each site will be generated and widely disseminated.

Level of Effort: \$15,000 (USAID/GCP: \$10,000, WCS: \$5,000)

Activity 6.4 Application of Living Landscapes Program tools beyond core sites

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

LLP-NY staff will work with the WCS Latin America program to integrate LLP tools developed with GCP support into their Amazon Andes Conservation Program landscapes. Dr. Didier and Strindberg will conduct a workshop in November to train staff to develop Miradi projects for their landscapes and to harmonize landscape species monitoring methods.

In FY08 WCS developed a collaborative project with TNC and WWF to convert LLPs 2-week introduction to GIS course for distance learning. LLP-NY staff will continue to work with TNC and WWF to finalize and launch this innovative approach to GIS training for the conservation community.

Activity 6.4.2 Technical Manuals

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

Results/Outputs:

Principles, practices, and tools distilled from implementation of the USAID/EGAT-funded sites to other site-based conservation projects around the world. New manuals will be translated into French and Spanish and distributed. An introductory conservation GIS course will be available for free on the web.

Level of Effort: \$5,000 (USAID/GCP: \$0; WCS: \$ 5000)

Activity 6.5 Ensure coordination and communication services for the program

The LLP program director and/or assistant director and LLP program staff will continue to communicate with staff from the core sites and WCS regional programs to discuss the development and sustainability of the program, on-the-ground implementation of the Landscape Species Approach, and further development of tools relevant to the approach. Program staff will also meet with collaborators, NGOs, governmental officers, and representatives of other stakeholder groups to promote the use of LLP strategies and tools.

In this last year of GCP, LLP-NY will focus support to field staff in capturing lessons learned, as well as continued support in reporting on Performance Monitoring forms, and submitting the last Annual Report/Closeout Report. The program director and/or assistant director and other WCS staff members (as necessary) will attend quarterly USAID/EGAT meetings in Washington DC and will ensure regular reporting and updates to USAID.

Results/Outputs:

The Coordination Unit will continue to serve as a hub for management and communication regarding the Living Landscapes Program among LLP field site staff, USAID, WCS/Regional staff, current and potential conservation partners, and interested members of the general public. The CU will ensure timely preparation and submission of USAID reports.

Level of Effort: \$ 2, 107 (USAID/GCP: \$2,107; WCS: \$ 0)

FY09 Travel Estimates:

Name	Itinerary	Reason
Robert Wallace	Madidi, Bolivia-NY-USA	Coordination with WCS in New York; Final Living Landscapes Meeting with USAID-funded site Project Directors and key staff in NY
Program Director or Assistant Director	NY-Bolivia	Management support; assistance with closeout reports and activities
Lilian Painter	Madidi, Bolivia-NY-USA	Coordination with WCS in New York
Robert Wallace	Madidi – Lima, Peru	Coordination with WCS Peru and Cayetano Heredia
Robert Wallace	Madidi – Lima, Peru	II Symposium on Andean Bear

Robert Wallace	Madidi – Lima, Peru	Coordination with Michael Painter, WCS Peru
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3 trip US to Bolivia, 3 trips Bolivia to Peru