

OFFICE MEMORANDUM

RECEIVED

DATE: May 4, 1999

99 MAY -4 PM 3:46

TO: Mr. Kenneth King, Assistant CEO, GEF
Attention: Program Coordination

GEF SECRETARIAT

FROM:  Lars Vidaeus, GEF Executive Coordinator

EXTENSION: 3-4188

SUBJECT: **Guatemala – GEF Medium-Sized Project (MSP)
Management and Protection of Laguna del Tigre National Park**

1. Please find attached the Project Brief for the “Guatemala - Management and Protection of Laguna del Tigre National Park Project” submitted to the World Bank by CI-Guatemala.
2. In accordance with operational guidance for approval of Medium-Sized Projects, we are submitting this project brief to the GEF Secretariat for action by the Chief Executive Officer (CEO). We are simultaneously circulating copies to UNDP/GEF, UNEP/GEF, STAP, and the CBD Secretariat for comments within 15 working days, or by May 25, 1999.
3. We look forward to receiving the GEF Secretariat’s comments on this Medium Size Project by June 8, 1999 (if not before). Thank you and best regards.

Distribution:

K. King, GEF Secretariat (Fax: 23240)

R. Asenjo, UNDP (Fax:212-906-6998)

A. Djoghla, UNEP (Nairobi) (Fax: 9-011-254-2-520-825)

R. Khanna, UNEP (Washington) (Fax: 202-331-4225)

M. Gadgil, STAP (Fax: 9-011-91-80-334-1683 or 91-80-331-5428)

M. Griffith, STAP Secretariat (Nairobi) (fax 254-2-623-140)

H. Zedan, CBD Secretariat (Fax: 9-1-514-288-6588)

cc: Cackler (LCC2C); Redwood, Lovejoy, Kimes, Graham, Abedin (LCSES); Castro, Bossard (ENVGC).

ENVGC ISC
IRIS4

3 May 1999

**Management and Protection of
Laguna del Tigre National Park and Biotope**

Petén, Guatemala

Medium-Sized Project Brief

Conservation International

May 1999

PROJECT SUMMARY

Project Identifiers

1. Project name: Support for the Management and Protection of Laguna del Tigre National Park and Biotopo, Petén, Guatemala	2. Proposed GEF Implementing Agency: World Bank
3. Country or countries in which the project is being implemented: Guatemala	4. Country eligibility: Guatemala ratified the CBD on July 10, 1995.
5. GEF focal area(s): Biodiversity	6. Operational program/Short-term measure: This project promotes conservation of biological diversity with emphasis on Forest Ecosystems (Operational Program #3) and Coastal, Marine and Freshwater Ecosystems (Operational Program #2).
7. Project linkage to national priorities, action plans, and programs: <u>National Biodiversity Strategy and Action Plan</u> This plan, financed primarily by GEF/UNDP, is under preparation and will be presented to the Guatemalan government in May 1999. The goal of the plan is to achieve the sustainable use and conservation of biodiversity in Guatemala, and to ensure that the conservation and use of biodiversity contributes in an equitable way to the welfare and development of the Guatemalan people. The plan will provide an overview of the status of, and threats to, biodiversity at the country level, and propose a strategy for confronting the identified problems. As of this writing, the plan has four major components: conservation in-situ, environmental services (e.g., carbon sequestration), wildlife, and genetic resources. <u>The Guatemalan Protected Areas System (SIGAP):</u> SIGAP is comprised of at least 81 units, containing just under 2 million hectares, or about 18% of Guatemala's territory. SIGAP is administered by the National Council for Protected Areas (CONAP), an office of the Presidency. The largest unit within SIGAP is the Maya Biosphere Reserve (MBR), located in the northern Petén. Until 1970, nearly 90% of the Petén was forested. Since then, more than half its forest has been destroyed. Current annual deforestation estimates in the Petén range from 40,000 to 75,000 hectares per year. Recognizing the incredible value of the biodiversity contained in the remaining forests and wetlands, the Guatemalan government established the 1.6 million hectare Maya Biosphere Reserve (MBR) in 1990. Under the Maya Biosphere Project, and other major initiatives in the Petén, the Government of Guatemala has made the region the highest priority for national and international conservation investments. In 1996, CONAP declared Laguna del Tigre and Sierra del Lacandon National Park (SLNP) its highest SIGAP priorities. <u>Government of Guatemala's Peace Program:</u> Under its Peace Program, the government has laid out a number of priorities that relate to the Petén and its natural resources. These include promoting sustainable development of the Petén and providing sustainable development projects for impoverished groups in fragile rainforest regions. Although the greater Petén has several significant donors, including World Bank, the Government of Germany, and the IDB, the only international donor promoting the protection of Laguna del Tigre is USAID/G-CAP, through the Maya Biosphere Reserve Project. The proposed GEF project would strongly complement the Maya Biosphere Reserve project by adding a number of activities designed to bolster the protection of globally important biodiversity. USAID, the Government of Guatemala, and other stakeholders have been consulted to ensure good project coordination and guarantee that GEF funds will complement, rather than substitute for, existing projects.	
8. GEF national operational focal point review and date of country endorsement: Ing. Juan Francisco Asturias F. Coordinador Nacional, CONAMA GEF National Focal Point Dated: November 19, 1997	
Project Objectives and Activities	

9. Project rationale and objectives:

Goal:

The goal of this project is to conserve the biodiversity and natural habitats of Laguna del Tigre National Park and Biotopo, the largest core zone in Guatemala's protected areas system.¹ This goal coincides with that of the Guatemalan government, as articulated in the 1999-2003 Master Plan for the Laguna del Tigre Management Unit (CONAP 1998).

Goal indicator:

For the period 1995-97, Sader et al. (1998) estimate that the natural forest, shrub and wetland habitats of Laguna del Tigre are being degraded or lost to agriculture and ranching at the rate of about 0.57% per year, or about 1,650 hectares per year². This represents a doubling of habitat loss rates over that seen in 1993-95. This conversion rate is also significantly higher than the rate for the Maya Biosphere Reserve as a whole, which is experiencing habitat loss at the rate of about 0.36% per year, or about 5,100 hectares per year (Table 1). An important indicator of overall success, then, is the reduction in habitat loss within the Laguna del Tigre, outside of the Community Management Units³ within the Laguna del Tigre boundaries, to a level at or below that of the Maya Biosphere Reserve as a whole.

Purpose:

In order to achieve the conservation of Laguna del Tigre, this project seeks to help government, NGOs, communities, and other actors improve their management of Laguna del Tigre, and of the community management units within its boundaries. This is the most immediate impact of the project's proposed interventions. Improvements in management will be measured as follows:

Purpose (Impact) indicators:

- Laguna del Tigre "consolidation criteria" (sufficiency of infrastructure, personnel, training, land tenure, threats analysis, zoning, management planning, research and monitoring, long-term financial stability, local participation and support, etc.) improved versus a January 1999 baseline.
- Laguna del Tigre Management Committee formally established and meeting on a regular basis to coordinate activities.
- At least three communities adopt formal management plans for their management units by first quarter of 2000. First phase of management plans being implemented by first quarter of 2001.
- At least three governmental institutions or NGOs have formal agreements with Laguna del Tigre administration and are working actively to support implementation of the Laguna del Tigre master plan by the second quarter of 2001.
- NGO contributions represent at least 25% of the total investment in Laguna del Tigre management by the second quarter of 2001.
- The Environmental Commission of the municipality of San Andrés establishes at least four formal agreements with communities in Laguna del Tigre that commit those communities to aid in the management and conservation.
- The proportion of cultivated land within Community Management Units under improved management practices increases significantly over the course of the project, compared with a 1998 baseline.

¹ Laguna del Tigre National Park (292,575 ha.) and Laguna del Tigre Biotopo (45,427 ha.), both declared as core zones under the 5-90 Protected Areas Law, together form the Laguna del Tigre Management Unit (LTMU), with a total of 338,002 hectares. Unless otherwise indicated, references to "Laguna del Tigre" imply the full management unit.

² Habitat loss is calculated on a relative basis. That is, the percentage change is based on the amount of natural habitat remaining at the beginning of a given time period, not on the size of the protected area or management unit being monitored. See Sader et al. 1998 for details.

³ There are several Community Management Units (*Unidades de Manejo Comunitario*) inside the official boundaries of Laguna del Tigre. These management units, or concessions, were established in 1997 and 1998 as a result of negotiations between the central Government and groups of settlers that had staked claims inside Laguna del Tigre. Changes to the Guatemalan Protected Areas Law in 1996 (*Ley de Areas Protegidas 110-96*) allow these concessions to exist within Laguna del Tigre. The communities inside Laguna del Tigre have agreed not to expand their agricultural and economic activities outside the boundaries of their units. Economic activities and land-use practices within the concessions should conform to the master plan for the protected area.

- 150 households in Paso Caballos, Buen Samaritano and Mirador Chocop adopt improved agroforestry techniques.
- At least 75 households in Laguna del Tigre communities participate in an integrated health and conservation project to include: Medicinal plants, preventative and curative health care, improved nutrition and environmental sanitation. These families should demonstrate an improved understanding of the linkage between conservation and health.
- Children in Laguna del Tigre have greater access to environmental education programs.

Rationale:

The Laguna del Tigre Management Unit protects the largest freshwater wetland in Central America, which Ramsar recognizes as a wetland of international importance. The freshwater ecosystems of Laguna del Tigre are very diverse. They support large populations of resident and migratory birds and protect a number of endangered species. Laguna del Tigre also serves as an important spawning ground for many marine and freshwater fish species. Although Laguna del Tigre is the highest priority in Guatemala's protected areas system, it is threatened by road construction, colonization, oil exploration, illegal logging, and wildlife poaching (Ramsar 1998). USAID, the Guatemalan government (CONAP, CONAMA, CECON, and the Municipality of San Andrés), and other groups (CI, CARE, Cănan K'aax) are making significant investments in Laguna del Tigre, primarily through the Maya Biosphere Reserve Project. The project proposed herein would complement the Maya Biosphere Reserve Project and leverage significant new resources to protect globally important biodiversity.

10. Expected project outcomes:

The project will be implemented over a two year period, with completion expected by 3rd quarter 2001. To achieve improved management, specifically to protect the globally important biodiversity of Laguna del Tigre, the project will produce the following results:

- A. Environmentally sound economic and agricultural alternatives introduced to Laguna del Tigre communities.
- B. Community and municipal organizations within Laguna del Tigre strengthened.
- C. Environmental education and conservation awareness programs established and operating.
- D. NGO capacities for core zone co-management strengthened.
- E. CONAP's core zone management system reinforced.
- F. Changes in ecosystem health and socioeconomic conditions in Laguna del Tigre documented and findings disseminated to managers.

Selected project outcome indicators (see the attached logical framework, Annex 1, for all indicators):

- A.1 Three economic demonstration projects established in Buen Samaritano, Mirador Chocop, and Paso Caballos by January 2000.
- B.1 Three community organizations formally recognized by the government:
 - Two by Jan 2000;
 - One by Jan 2001.
- C.1 Community educators implement environmental education programs in Paso Caballos, Buen Samaritano and Mirador Chocop, reaching a total of 250 students by Dec. 2000.
- D.1 Based on a strategic plan developed in collaboration with CONAP, a local NGO, Cănan K'aax, is 85% equipped to carry out Laguna del Tigre co-management responsibilities by January 2000. The NGO is 100% equipped by January 2001, including a base within Laguna del Tigre.
- E.1 Park personnel complete training as follows:
 - First phase of training: Basic training, affecting 100% of park personnel, completed by end of 1999.
 - Second phase of training: Advanced training, focusing on all Laguna del Tigre technical personnel, completed by end of 2000
 - Third phase of training: Advanced training, focusing on administrative and management personnel, completed by end of 2001.
- F.1 Annual reports on the status of biodiversity conservation in Laguna del Tigre submitted to CONAP and CONAMA during the first quarter of 2000, and again during the last quarter of 2001.

11. Project activities to achieve outcomes (see the project logical framework, Annex 1, for

details):**Outcome A) Environmentally sound economic and agricultural alternatives introduced to Laguna del Tigre communities (Total cost: \$218,350; GEF: \$25,850):**

- Activity A1. Assist communities in the design and execution of forest management plans for their management units.
- Activity A2. Train technicians in plant production techniques.
- Activity A3. Establish agroforestry demonstration plots.
- Activity A4. Introduce new, high-yield crops.
- Activity A5. Study the feasibility of non-traditional economic activities.
- Activity A6. Conduct market research and analysis of new and existing Laguna del Tigre products. Develop and implement promotion strategies based on marketing results and other information.
- Activity A7. Study and develop promising tourism products in Laguna del Tigre.
- Activity A8. Identify and train community groups to run small businesses.
- Activity A9. Help community groups establish legal structures for their businesses.

Outcome B) Community and municipal organizations within Laguna del Tigre strengthened (Total Cost: \$108,900; GEF: \$56,925):

- Activity B1. Provide training and other forms of institutional support to the Environmental Commission of the municipality of San Andrés.
- Activity B2. Help the Environmental Commission and CONAP establish co-management agreements with Laguna del Tigre communities.
- Activity B3. Identify, organize, and train community groups responsible for managing the Community Management Units.

Outcome C) An environmental education and conservation awareness programs established and operating (Total cost: \$209,550; GEF: \$61,325):

- Activity C1. Design environmental education curriculum for schools in Laguna del Tigre communities and obtain approval from local education authorities for its use.
- Activity C2. Design and implement training program for environmental education teachers.
- Activity C3. Implement environmental education program in Laguna del Tigre communities.
- Activity C4. Design a campaign to increase the general public's awareness of Laguna del Tigre and build respect for Laguna del Tigre laws and regulations. Focus the campaign on influencing key decision-makers.
- Activity C5. Identify communication mechanisms (information centers, print media, TV, radio, etc.).
- Activity C6. Implement awareness campaign.
- Activity C7. Communicate results of AquaRap, environmental studies, and annual evaluations to the general public.
- Activity C8. Establish information/visitor center in El Peru. Upgrade information center in El Naranjo.

Outcome D) NGO capacities for core zone co-management strengthened (Total cost: \$156,750; GEF: \$39,875):

- Activity D1. Design a strategic co-management plan for the local NGO Cănan K'aax.
- Activity D2. Establish management and administration systems for Cănan K'aax.
- Activity D3. Design and implement a fundraising plan for Cănan K'aax, with an emphasis on ensuring the long-term viability of the organization.
- Activity D4. Encourage the Government of Guatemala to authorize an NGO co-management role in Laguna del Tigre for Cănan K'aax.
- Activity D5. Design and implement training programs for Cănan K'aax staff.

Outcome E) CONAP's core zone management system reinforced (Total Cost: \$378,950;

GEF: \$237,600):	
Activity E1.	Provide technical support to strengthen the following Laguna del Tigre management subsystems: financial systems, park protection, law enforcement, research and monitoring, and public use programs.
Activity E2.	Design and implement a fundraising program for Laguna del Tigre.
Activity E3.	Devise and implement 3-phase training program for park guards, technicians, and management personnel.
Activity E4.	Design and execute a management plan for the Scarlet Macaw Biological Station (EBG) and its area of influence in the eastern section of Laguna del Tigre.
Activity E5.	Link Laguna del Tigre with international research and conservation networks.
Activity E6.	Work with key economic stakeholders (oil and tourism especially) to define and adopt best management practices.
Outcome F)	Changes in ecosystem health and socioeconomic conditions in Laguna del Tigre documented and findings disseminated (Total cost: \$215,600; GEF: \$152,075):
Activity F1.	Design socioeconomic and ecological monitoring and evaluation programs for Laguna del Tigre. Help LTMU managers carry out the program.
Activity F2.	Conduct study on the use and quality of habitats in selected areas and their relation to other areas within the reserve (include recommendations for the management of Scarlet Macaws, Parrots, and other threatened species).
Activity F3.	Design and carry out a study of water quality, edge effects, habitat quality, and human impacts in the "Special" and "Transitional" Use zones.
Activity F4.	Disseminate results of AquaRap, environmental studies, and annual socio-economic and ecological evaluations to decision-makers.
Activity F5.	Design and implement detailed socio-economic and ecological impact evaluations in the Paso Caballos, Buen Samaritano, and Mirador-Chocop communities.
Project Management and Evaluation (Total Cost: \$374,668; GEF: \$148,981):	
M&E Activity 1.	Design and implement annual project evaluations. Coordinate with other socio-economic and ecological evaluations being conducted by other donors and organizations.
M&E Activity 2.	Design and conduct evaluation of the LTNP administrative system.
M&E Activity 3.	Adapt and modify project design based on monitoring and evaluation results.
M&E Activity 4.	Project coordination and management.

12. Estimated budget (in US\$):	
GEF PDF:	25,000
Cofinancing PDF:	13,000
GEF MSP:	722,631
Co-financing MSP:	940,137
TOTAL:	1,662,768
Total GEF:	747,631

Information on institution submitting project brief

13. Information on project proponent
 This project is being proposed by Conservation International/Guatemala, which would also act as the lead implementer. CI/Guatemala was established in 1992 and is registered as a not-for-profit environmental organization under the laws of Guatemala. CI/Guatemala maintains two offices, one in Guatemala City and the other in Flores, the Petén's capital. The vast majority of activities are carried out through the Petén office. All of CI/Guatemala's field projects are in the Petén. The annual operating budget is about \$2.3 million. About 70% of funding comes from USAID/G-CAP. The remainder comes

from other bi- or multi-laterals, individuals, foundations, corporations, and unrestricted CI sources. Over 95% of CI's local staff are Guatemalan. Most senior management positions are filled by people from the Petén.

Since its creation, the goal of CI/Guatemala's Petén project ("ProPetén") has been the protection and environmentally sound management of the Maya Biosphere Reserve. ProPetén employs two broad strategies to achieve this goal. The first involves working with communities in the multiple use and buffer zones of the MBR. By developing economic alternatives to slash-and-burn farming, cattle ranching, and industrial logging in these communities, ProPetén seeks to increase the perceived value of an intact forest while benefiting local people. ProPetén also works directly in the Reserve's core zones, supporting government and other stakeholder's efforts to protect these areas of strict conservation. In all cases, ProPetén works in coordination with the institutions of the Government of Guatemala, local municipalities, academic institutions, and members of the communities in and around the Reserve. Major functional units within ProPetén include: small business development, natural forest management, community organization and training, policy and legislative affairs, and applied scientific research.

14. Information on proposed executing agency (if different from above): Same as above.

15. Date of original submission of project concept: 25 November 1997

Information to be completed by implementing agency

16. Project Identification Number:

17. Implementing Agency Contact Person

Douglas J. Graham, Task Manager, Latin America and Caribbean Region (Tel: 202-473-6667; Fax: 202-676-9373; email: dgraham@worldbank.org)

Christine Kimes, Global Environment Coordinator (Tel: 202-473-3689; Fax: 202-614-0087; email: ckimes@worldbank.org)

18. Project Linkage to Implementing Agency Program(s)

Several other inter-related projects are being carried out in Guatemala and the region with World Bank support:

Land Administration Project:

The IBRD is preparing a land administration project for the Petén that will establish cadastral information, regularize land registry in priority areas, strengthen the public land registry in selected municipalities, and strengthen beneficiary groups to allow more informed participation in land regularization. This land administration project will focus on sites outside of the Petén's protected areas. The project will help mitigate threats to protected areas by stabilizing land tenure in buffer zones and other areas that border protected areas.

Montes Azules:

The GEF/World Bank actively support the management of Montes Azules Biosphere Reserve in Chiapas, Mexico through the on-going Pilot Phase Mexico Protected Areas Program. Montes Azules, Laguna del Tigre National Park and Biotopo, and Sierra del Lacandon National Park combine to form a major corridor in the larger Maya Tropical Forest.

Mesoamerican Biological Corridor:

The MBC program is coordinated by CCAD and comprises a Regional Project and individual national projects supported by the GEF, World Bank, UNDP, UNEP, and numerous bilateral donors. The combined results of these different initiatives are expected to include establishment and maintenance of a regional biological corridor stretching from southern Mexico through to Colombia, which will consist of a mosaic of productive and protected landscapes in which development activities are compatible with the conservation of the Corridor's unique biodiversity. The proposed MSP would contribute to the objectives of this larger MBC corridor program.

DETAILED PROJECT DESCRIPTION

I. RATIONALE AND OBJECTIVES

The goal of the proposed project is the conservation of globally important biodiversity and natural habitats in Laguna del Tigre.

With just over 338,000 hectares, Laguna del Tigre occupies about 20% of the Maya Biosphere Reserve (MBR). Larger than Yosemite National Park in California, Laguna del Tigre is the largest core zone in Central America and protects Mesoamerica's largest freshwater wetland. Based on a recent analysis of satellite data, aerial photographs and field data collection, about 27% of Laguna del Tigre (91,500 ha.) is covered by swamps, marshes, and grass/sedge wetlands. A large percentage of the remaining forest and shrub vegetation is seasonally flooded. There is good evidence that the freshwater ecosystems of Laguna del Tigre are very diverse and support large populations of resident and migratory birds plus a number of endangered species. Laguna del Tigre has been recognized as a wetland of global importance under the Ramsar treaty. In 1996, CONAP declared Laguna del Tigre, along with Sierra del Lacandon National Park (SLNP), its highest national conservation priorities.

Despite priority designation, uncontrolled colonization threatens the viability of Laguna del Tigre. Colonization is a function of rapid demographic increase in the Petén, combined with easy access to Laguna del Tigre through poorly guarded roads and other infrastructure. Misinterpretation of elements in the 1996 Peace Accords gave certain groups reason to invade national lands. The situation came to a head in March and April 1997, when invading colonists took government and NGO personnel hostage and destroyed important park infrastructure. The government has since convinced the colonists to stop invading Laguna del Tigre. In return, up to seven "community management units" or concessions will be formally established within Laguna del Tigre.

With the invasions of the early and mid 1990s, habitat loss in Laguna del Tigre National Park roughly doubled from 0.28% in 1993-1995 (805 hectares per year) to 0.57% in 1995-97 (1,626 hectares per year) (Sader et al. 1998, Table 1). This project seeks to reduce the rate of habitat loss as much as possible. At a minimum, habitat loss outside the community management units should be reduced to a level at or below that of the Maya Biosphere as a whole (currently 0.36%, the equivalent of about 1,000 hectares per year in Laguna del Tigre). The project will also conduct more detailed, field-level ecosystem monitoring within the park and biotopo to verify that the project's goal is being achieved.

In spite of the threats Laguna del Tigre, there are several positive signs. The government has stepped up its commitment to the conservation of Laguna del Tigre, and there is improved rapport among the government, NGOs and communities inside Laguna del Tigre. CONAP has increased Laguna del Tigre's administrative, financial, operational, and monitoring capabilities, while facilitating significant investments in infrastructure. CONAP is actively working to stabilize existing settlements within Laguna del Tigre, establish incentives outside Laguna del Tigre to prevent further colonization, and improve its outreach and education efforts with surrounding communities.

The government is also seeking to develop co-management arrangements under which local NGOs, municipalities, communities and other entities may play a significant role in the protection and management of Laguna del Tigre. In 1997 and 1998, CI worked with CONAP, and other institutions, to develop a five-year master plan for Laguna del Tigre, design an administrative structure for the area, conduct basic environmental monitoring, and provide assistance to Laguna del Tigre communities. CARE implemented an innovative program to clarify land tenure and provide credit and technical assistance to buffer zone communities. The Petén-based NGO Cănan K'aax was established in 1998, for the express purpose of assisting the government in the management of Laguna del Tigre. The municipality of San Andrés recently established an environmental commission to provide advice to the municipality on environmental matters and to bolster its interactions with CONAP and Laguna del Tigre communities.

Collaboration among the international community, central and local government, local NGOs, and communities in and around Laguna del Tigre continues to improve. There is a much stronger institutional presence in Laguna del Tigre than just two years ago. Communities within Laguna del Tigre have been stabilized. The financial situation of Laguna del Tigre, and supporting institutions is also much better than it was. With the situation in Laguna del Tigre on a more stable footing, there is now the opportunity to make a series of investments to further improve the management of Laguna del Tigre, and help guarantee its long-term viability as a protected area. The project outcome and activities discussed below detail these proposed investments.

The proposed project will help to promote the future sustainability of one of the largest blocks of relatively undisturbed habitat in the Petén and, on a regional scale, protect a significant link in the proposed Mesoamerican Biological Corridor. By establishing effective core zone management systems, the project will also serve to develop models that can be applied in other Guatemalan protected areas as they strive to develop effective management practices.

II. CURRENT SITUATION

With support from the PDF Block A grant, CI conducted a participatory analysis of the problems currently facing the administrators of Laguna del Tigre (See sections VI. and X. for details on the participatory analysis.). Generally, the most significant problems can be grouped into two categories:

Unsustainable Pressures From Laguna del Tigre Communities

There are 13 loosely defined communities within Laguna del Tigre, with a total of approximately 3,250 residents. Nearly all of these residents have settled illegally very recently. A 1998 survey indicates that more than 20% of these people had arrived in Laguna del Tigre during the last year. The communities are concentrated along the Rio San Pedro and a road that was developed deep within Laguna del Tigre to support oil production.

The vast majority of Laguna del Tigre residents currently employ land use practices -- non-mechanized agriculture (predominantly corn production) and cattle ranching -- that are not compatible with the conservation goals of Laguna del Tigre. Standard practices involve progressive clearing of land as soils are exhausted and annual burning, which frequently results in uncontrolled forest fires. The end result is loss of forest cover and natural vegetation in Laguna del Tigre. Satellite analysis indicates that between 1986 and 1990 fewer than 30 hectares within the park had been deforested. With increasing invasions, habitat loss in Laguna del Tigre National Park roughly doubled from 0.28% in 1993-1995 (805 hectares per year) to 0.57% in 1995-97 (1,626 hectares per year) (Sader et al. 1998). In addition, Laguna del Tigre residents commonly poach wildlife, timber, and other forest products for subsistence and commercial use.

Due to their recent establishment, rapid growth, impoverished conditions, and lack of legal land tenure, these communities are extremely unstable, lack formal organization, and have problematic relationships with governmental and non-governmental institutions. Since 1997, CONAP, with CI's assistance, has promoted the strengthening of community organizations in Laguna del Tigre, using formal agreements, land use planning, and technical assistance in an attempt to stabilize existing communities and eliminate uncontrolled immigration. While this has markedly improved relations between the Laguna del Tigre administration and community leaders, populations continue to increase due to both new immigrants seeking land and an extremely high natural growth rate.

Table 1 below provides more information on habitat loss trends in the project area over the past 15 years:

Table 1: Habitat loss⁴ in the Maya Biosphere Reserve

Management Unit	1986-1990	1990-1993	1993-1995	1995-1997
Tikal National Park	0	0	0	4.5
Laguna del Tigre National Park	7	166	805	1,626
El Mirador National Park	0	0	0	0
Sierra del Lacandon N.P.	256	2,243	2,360	1,391
Rio Azul N.P.	0	0	0	0
Biotopo Cerro Cahui	1	0	0	15
Biotopo El Zotz	12	17	11	64
Biotopo Dos Lagunas	0	0	0	0
Biotopo Laguna del Tigre	0	0	2	35
Core Zone Total	277	2,425	3,177	3,134
Multiple Use Zone Total	420	1,289	2,018	2,009
Buffer Zone Total	3,033	10,740	13,712	11,043
Total Area of MBR w/o buffer	697	3,715	5,195	5,143
Total Area of MBR w/ buffer	3,730	14,454	18,908	16,186

Core Zone Administration In Its Infancy

Although Laguna del Tigre was created in 1990, there was no on-site staff or infrastructure to support park protection and management until 1996. Over the past two years, CONAP has built a staff of approximately 40 rangers and managers, three control posts and an administrative site. CECON has two functioning research posts and 9 staff in the Biotopo, and CI operates a biological station at the eastern end of Laguna del Tigre.

CONAP, with the assistance of CI and several other institutions, prepared the first five-year (1999-2003) master plan for Laguna del Tigre during 1997/98, and this master plan was approved in late 1998. The master plan comprises sub-plans for administration, park protection and law enforcement, natural resource management, research and monitoring, community outreach, and public use, and calls for an investment of \$11 million from 1999-2003 (about \$2.2 million per year).

While these represent critical first strides, consolidation of a stable long-term administration for Laguna del Tigre will require a substantial additional investment over the next several years. Laguna del Tigre still does not have sufficient, nor sufficiently trained, staff to carry out the full range of activities required for effective administration. Rangers need to be trained to carry out law enforcement, educational programs, community assistance, monitoring, and other management responsibilities. Additional professionals are needed to organize and direct Laguna del Tigre's technical and administrative programs. Infrastructure is inadequate to cover the vast area – additional control posts, visitor and information centers, fire observation posts, and backcountry stations are needed to support Laguna del Tigre administration.

In addition to these core protection and management functions, follow-up efforts are needed to build active coalitions among governmental and non-governmental organizations that can work in support of the defined management programs. In several areas (public use, community assistance, environmental education, etc.), further work is also needed to design in detail implementable strategies that will be effective in meeting management objectives.

CONAP officials have identified that the current centralization of governmental decision-making is an obstacle to efficient Laguna del Tigre management. Mechanisms need to be established to decentralize administrative authorities without losing responsibility and accountability. Finally, financing is not

⁴ Hectares per year per period: Habitat loss is calculated on a relative basis. That is, the percentage change is based on the amount of natural habitat remaining at the beginning of a given time period, not on the size of the protected area or management unit being monitored. See Sader et al. 1998 for details.

assured to meet long-term Laguna del Tigre administration needs. A strategy is needed to identify and secure diverse, stable funding sources to support management activities.

Current conservation and development activities in Laguna del Tigre (Baseline scenario):

Current support for conservation and economic development in Laguna del Tigre takes place via the Maya Biosphere Reserve Project. USAID/G-CAP provides the majority of the funds. The project implementers - CONAP, CECON, CI, CARE, and Cănan K'aax -- provide counterpart funds. The major activities planned for the two year MSP implementation period through the Maya Biosphere Reserve Project, and which constitute the baseline for incremental cost purposes, are as follows:

CONAP and CECON have significantly improved their infrastructure and strategic planning since 1996. Under the baseline scenario, CONAP and CECON would maintain their facilities and CONAP would carry out priority elements of some of the sub-plans, namely fire control, limited community outreach, limited research and monitoring, and basic administration, maintenance, and patrols. In 1998, CONAP began to offer incentives to settlements inside Laguna del Tigre to encourage residents to voluntarily relocate outside the core zone. Incentives include clear land title, technical assistance, credit programs, and so on. Under the baseline scenario, CONAP will continue this program of voluntary incentives to relocate. The cost of these activities over the two-year period would amount to about \$1,422,993.

CARE, like CI, has worked in the Maya Biosphere Reserve since 1991. As discussed earlier, over the past several years it has developed innovative land tenure and credit programs, primarily for Maya Biosphere Reserve buffer zone communities. It has also provided extensive agroforestry technical assistance. To help ensure the sustainability of these efforts, CARE is supporting the establishment of a local NGO dedicated to providing technical assistance to buffer zone communities. In 1997 CARE extended its activities to communities inside Laguna del Tigre, focusing mainly on settlements clustered along the road running north from the Rio San Pedro to the Xan oil wells. Under the baseline scenario, CARE will continue its activities with both buffer zone and core zone communities, at a two-year cost of about \$796,967.

Since 1997, CI has worked closely with CONAP, CECON, CARE, and the municipality of San Andrés to improve the protection and management of Laguna del Tigre. Support to date includes: helping the municipality of San Andrés establish an environmental commission; working with CONAP to zone Laguna del Tigre, establish baseline habitat and socio-economic monitoring programs for the core zone, design a strategic plan and administrative system for the management unit, etc; promoting the establishment of an NGO, Cănan K'aax, dedicated to the protection and management of Laguna del Tigre; and reinforcing the public health system in several Laguna del Tigre communities.

Under the baseline scenario, CI would introduce environmentally sound economic and agricultural alternatives to park communities, provide some legal and organizational strengthening assistance to park communities, and develop a small program for environmental education in those communities. CI would also provide institutional strengthening assistance to Cănan K'aax, a limited amount of technical assistance to CONAP, and aid in some coarse-scale socioeconomic and ecological monitoring. Finally, CI would reinforce the public health system in several Laguna del Tigre communities. More specifically, CI would train community health workers in basic public health topics and in the links between health and the environment, help these workers present these topics to community members, provide training in first aid for Laguna del Tigre guards, work with female heads of household to establish vegetable and medicinal plant gardens, and establish a policy dialogue with the Ministry of Health. The two year costs for this broad range of activities would be about \$893,062.

III. EXPECTED PROJECT OUTCOMES, WITH UNDERLYING ASSUMPTIONS AND CONTEXT

Outcome A) Environmentally sound economic and agricultural alternatives introduced to Laguna del Tigre communities.

Community management units are being established within Laguna del Tigre where current residents will have rights to use large (45ha.) family parcels under the stipulations of a management plan accepted by both the community members and Laguna del Tigre administration. Discussions with institutions working in the area and community leaders indicate that these community management units will only be sustainable over the long-term if there is a shift away from current land use practices, toward activities that both require less land clearing and produce greater economic benefits. Therefore, a major outcome of the proposed project will be the introduction to selected Laguna del Tigre communities, of an integrated package of economic and agricultural alternatives designed to reduce the environmental impact of community development.

The assumptions underlying these strategies are that a combination of new information, technical assistance, and enforcement of existing regulations will provide sufficient incentives for community residents to risk adopting new practices, and that even limited short-term benefits will generate sufficient interest to assure continuing changes over the long-term. An additional assumption is that socio-economic improvements will encourage the communities to unite forces with the Laguna del Tigre administration to ensure that non-agricultural lands will be managed in a form compatible with core zone protection and use.

Outcome B) Community and municipal organizations within Laguna del Tigre strengthened.

Current land use practices in Laguna del Tigre are resulting in accelerating destruction of natural resources. Laguna del Tigre communities have not perceived the negative impact of this destruction, however, due to their short, unstable tenure. A first step toward changing this pattern of development is the strengthening of community organizations at the grassroots level, for the purpose of improving communications, evaluating alternatives, and promoting actions that will better the community as a whole. Since many communities in the Petén have more contact with the local municipality than with the central government, it is also essential to strengthen the capacity of local municipalities to work with communities on environmental and resource management issues.

The underlying assumption is that better-organized communities will recognize a common interest with Laguna del Tigre administrators and the municipality, and that, with a better understanding of the law, communities will be less apt to break the law. Another assumption is that a municipality strengthened in environmental matters will play a crucial positive role in co-management of Laguna del Tigre.

Outcome C) Environmental education and conservation awareness programs established and operating.

While 68% of Laguna del Tigre's population is younger than 12 years old, the majority of the communities in Laguna del Tigre have no access to schools. The schools that do exist have limited curricula related to environmental education. Recognizing that schools can serve as a key mechanism for educating Laguna del Tigre residents on the importance of conservation, the project would, in collaboration with local education officials, establish a comprehensive environmental education program for Laguna del Tigre communities. This outcome is critical to developing a base of support for core zone management. While direct environmental benefits will only be realized over the long-term, the assumption is that an environmentally educated population is needed to support sound land-use decisions and appreciate the value of protection.

The project would distribute information widely on the ecological status of the LTNP and on the socio-economic status of its inhabitants, and would foster a more general awareness and appreciation of Laguna del Tigre among the general public. A conservation NGO is well-suited to take on the task of promoting

and improving public awareness regarding environmental issues. The assumption is that good awareness and positive attitudes among the general public regarding the natural environment provide the essential foundation for on-going conservation efforts. A linked assumption is that accurate information, on the impacts of core zone management and other activities on the Laguna del Tigre ecosystem, in the hands of decision-makers, will help create sound conservation policies and practices.

Outcome D) NGO capacities for Laguna del Tigre co-management strengthened.

The Government of Guatemala has an expressed interest in delegating certain responsibilities for management of Laguna del Tigre to a non-governmental organization under a co-administration agreement. A local NGO - Cănan K'aax - was formed in 1998 with the specific mission of assuming this role. However, additional investment is needed to support both Cănan K'aax and the government in developing the capacity to negotiate and execute an effective co-administration agreement. In addition, other NGOs have been working effectively in the Petén and Laguna del Tigre, and their continued and expanded participation are needed to carry out the full range of activities required to effectively administer Laguna del Tigre. The assumption is that NGOs can provide the government of Guatemala with badly needed financial, technical, and political resources to support core zone protection, and that NGOs will receive the formal authority needed to carry out co-management tasks.

Outcome E) CONAP's Laguna del Tigre management system reinforced.

Management of Laguna del Tigre is a highly complex undertaking. The government of Guatemala and partner institutions have made a strong investment in the design and initial implementation of Laguna del Tigre administrative and financial systems. Laguna del Tigre is now at a critical juncture at which priorities have been identified and detailed strategies have been developed to address the most significant needs, but an additional investment is needed to establish a working, sustainable core zone management system.

The underlying assumptions are that effective core zone administration and management will require a concerted effort to decentralize administrative processes, create sustainable mechanisms for generating and managing finances, build staff capacity, define and execute management programs, and address potentially conflicting stakeholders.

Outcome F) Changes in ecosystem health and socioeconomic conditions in Laguna del Tigre documented and findings disseminated to managers and key stakeholders.

Over the past year, numerous organizations working in Laguna del Tigre have collected data on the basic environmental and socioeconomic conditions of Laguna del Tigre. To be able to assess the effectiveness of core zone protection efforts, Laguna del Tigre managers will establish an ongoing program to monitor changes in these conditions, with a particular emphasis on baseline indicators that are sensitive to the threats to Laguna del Tigre resources. The assumption is that Laguna del Tigre managers will make timely and appropriate adjustments to Laguna del Tigre's management and conservation-related programs based on monitoring results.

IV. ACTIVITIES AND FINANCIAL INPUTS NEEDED TO ENABLE CHANGES

The proposed MSP would be complementary to the baseline activities described in Section II. MSP project activities would be implemented over a two-year period and, in conjunction with the Baseline programs, correspond to the initial phase of the five-year Master Plan. The following description of activities and inputs is limited to the MSP (ie, does not include baseline activities). A detailed cost table by sub-activity is attached as Annex 2.

Outcome A) Environmentally sound economic and agricultural alternatives introduced to Laguna del Tigre communities (Total cost: \$218,350; GEF: \$25,850):

Community residents recognize that their current agricultural practices are economically marginal, and are interested in adopting new activities that can improve their socio-economic status. Unfortunately, the most frequently identified alternative is cattle ranching, which requires even greater forest clearing. Building on the experiences of Conservation International and other institutions, the project will significantly increase efforts, over the baseline scenario, to identify and promote economic alternatives that reduce resource pressures. Activities will focus on promoting more sustainable agricultural, agroforestry, and forestry practices, developing new economic activities (ecotourism, sales of non-timber forest products, etc.), and helping to create bridges between the communities and viable markets for more sustainable products. As a result of these activities, at least three economic demonstration projects will be established in Laguna del Tigre communities by early 2000, and at least two additional tourism enterprises will be functioning by mid 2000.

Outcome B) Community and municipal organizations within Laguna del Tigre strengthened (Total Cost : \$108,900; GEF: \$56,925):

The communities inside Laguna del Tigre are young and, as a result, have weak organizational capacity at the grassroots level. This affects the ability of the communities to collaborate with governmental and non-governmental institutions in the management of Laguna del Tigre. The project will address this issue by identifying, organizing, and training community groups responsible for managing the Community Management Units within the protected area. These community-strengthening activities will complement those to be carried out under the baseline scenario. As a result of these activities, at least three community organizations will be formally recognized by the government by early 2001, and community members will have received training in fire control and prevention methods, community organization techniques, citizenship concepts, local empowerment methods, and conflict resolution procedures.

Laguna del Tigre falls entirely within the jurisdiction of the municipality of San Andrés. This municipality has established an Environmental Commission that is formulating and carrying out a comprehensive set of environmental and natural resource management policies at the municipal level. Activities with the municipality will thus focus on strengthening the commission's technical and policy capacity in this regard. CI will also work with the commission to establish agreements with Laguna del Tigre communities in which the communities agree to play a more active role in the management and conservation of Laguna del Tigre. As a result of these activities, municipal officials, like community members, would have received training in fire control and prevention methods, community organization techniques, citizenship concepts, local empowerment methods, and conflict resolution procedures.

Outcome C) An environmental education and conservation awareness programs established and operating (Total cost: \$209,550; GEF: \$61,325):

There is a clear need to improve environmental education in park communities and to establish a comprehensive conservation awareness initiative regarding Laguna del Tigre and directed toward the general public in Guatemala and elsewhere. The two sets of activities are separate, but strongly linked. Within the environmental education project, CI/Guatemala would spearhead the design of an environmental education curriculum to be used in schools throughout Laguna del Tigre, and perhaps elsewhere in the Petén. This design would be done in close collaboration with local education officials. Once approval had been obtained from these officials, a teacher training program would be established. Finally, the project would help teachers and the school system implement the curriculum in community schools. As a result of these activities, an environmental education curriculum would be designed by late 1999, and all community educators would be trained by mid 2000. The program would be implemented in several Laguna del Tigre communities, and reach at least 250 students by late 2000.

The conservation awareness initiative would focus on the broader Guatemalan general public, and specifically on key decision-makers. There is already a great deal of information on the ecological importance and status of Laguna del Tigre. For example, CI/Guatemala, and several other governmental and non-governmental institutions recently carried out a rapid ecological assessment or "Aquirap" of

Laguna del Tigre. It is essential to get the results of these and other studies into the public realm as quickly as possible and in a form that the general public can comprehend. To this end, the initiative would design an integrated campaign to increase public awareness of and respect for Laguna del Tigre, with a special emphasis on decision-makers at the local, national, and regional levels. As part of the design process, the initiative would identify communications mechanisms (print media, TV, radio, and so on) and the "publics" the initiative should seek to influence. With the design in hand, the strategy would be implemented over the course of two years. One element of the awareness initiative, at the local level, would be the establishment and/or upgrading of information centers in El Peru and El Naranjo.

As a result of the conservation awareness initiative, a visitor information center would be functioning at the El Peru archaeological site by early 2000 and the community information center in El Naranjo would have completed its second phase of development by early 2000. The awareness strategy would be operational by late 1999 and, among other products, the Aquarap results would be distributed to decision-makers and the general public by early 2000, several awareness-building workshops would be conducted over the course of 2000 and 2001, and wide variety of information materials on Laguna del Tigre would be distributed to media outlets throughout the project's time frame.

Outcome D) NGO capacities for core zone co-management strengthened (Total cost: \$156,750; GEF: \$39,875):

Cănan K'aax is a very young institution, so its staff requires additional training and other forms of support to allow it to meet its full capacity as an institution. The project will work with Cănan K'aax, CONAP, and other institutions to design, and establish formally, a strategic co-management role for the NGO. The project will also support the establishment of management and administrative systems for Cănan K'aax, and create a comprehensive training program for NGO staff.

Cănan K'aax has requested support to develop its fundraising capabilities and, more generally, to help ensure that it is on a sound financial footing over the long-term. As part of its overall financial strategy, Cănan K'aax would like to ensure that it has a sizable unrestricted reserve. The means of raising these funds will be designed and implemented as part of the GEF MSP.

As a result of these activities, Cănan K'aax board and staff would complete a two-phase training program by the first quarter of 2001. A financial management plan would be designed and operational for the NGO, a full-time fundraiser hired, and an unrestricted reserve of \$100,000 established by January 2000. A strategic co-management plan would be completed, and its first phase executed, by January 2000. A second phase would be implemented by January 2001. Based on this strategic plan, Cănan K'aax would be 85% equipped to carry out its co-management responsibilities by January 2000, and 100% equipped by January 2001 to do so, including a base within Laguna del Tigre itself.

Outcome E) CONAP's core zone management system reinforced (Total Cost: \$378,950; GEF: \$237,600):

In late 1998, CONAP approved a five-year master plan for the Laguna del Tigre National Park and Biotopo. This plan was developed in a very participatory fashion and enjoys widespread support. The plan is broken into several sub-plans or subsystems. There is broad agreement that several of these subsystems, namely finance, law enforcement, research and monitoring, community outreach, and public use, need additional outside technical support. Laguna del Tigre managers have also requested technical support to develop policies and practices for working with key stakeholders. The project would provide this support over a two-year period. Laguna del Tigre staff -- park guards, technicians, and managers -- requires basic training in a variety of subjects to build institutional capacity. The project would establish a three-phase training program to address this need.

As with Cănan K'aax, Laguna del Tigre managers wish to solidify the long-term financial footing of Laguna del Tigre. There are several means of doing this, including a trust fund. Such a fund was established in

1998 and is housed within the Guatemalan Conservation Trust⁵. Activities under the GEF MSP would provide technical support to get the Laguna del Tigre trust fund off the ground. Specifically, the project would help design and implement a long-term fundraising plan that would ensure sufficient capitalization of the trust fund (no GEF Medium-size Grant funds will be used to capitalize the fund). The project would ensure that the fund governance structure was established and functioning according to accepted norms. In carrying out all these activities, CI/Guatemala will adhere to the policies and recommendations of the GEF Secretariat regarding trust funds (GEF 1998).

CI/Guatemala has worked for several years to establish the Scarlet Macaw Biological Station (*Estación Biológica Las Guacamayas (EBG)*) in Laguna del Tigre's eastern panhandle as major center for applied ecosystem research. As part of the proposed MSP, this station would be integrated fully into the overall management of Laguna del Tigre. As part of a program of applied research throughout Laguna del Tigre, the project would also link researchers, managers, and others to outside networks devoted to conservation of and research in protected areas.

As a result of activities to reinforce CONAP's management of Laguna del Tigre, park and biotope personnel would complete a comprehensive training program before the end of 2001, a long-term fundraising plan would be submitted and approved by CONAP by early 2000, and the various Laguna del Tigre management subsystems would be revised and strengthened by mid 2001. At least one internal evaluation of the Laguna del Tigre management system would be carried out during the project time frame. A management plan for the EBG would be established and approved by late 1999, and Laguna del Tigre would be linked by early 2000 to at least four outside networks or organizations dedicated to conservation, research, and monitoring in protected areas.

Outcome F) Changes in ecosystem health and socioeconomic conditions in Laguna del Tigre documented and findings disseminated to park and Biotope managers (Total cost: \$215,600; GEF: \$152,075):

The project implementers would assist Laguna del Tigre managers to design and establish a comprehensive ecological and socio-economic monitoring program for Laguna del Tigre. While many monitoring activities would be carried out by Laguna del Tigre personnel, other monitoring studies would be carried out by the MSP NGO partner (CI/Guatemala). More specifically, the MSP would support a study on the use and quality of habitats in selected areas (recommendations for the management of Scarlet Macaws, parrots, and other threatened species will be included in this analysis), design and carry out a study of water quality, edge effects, habitat quality, and human impacts in the "Special" and "Transitional" Use zones, collaborate with the conservation awareness project team to disseminate results of AquaRap, environmental studies, and annual socio-economic and ecological evaluations to decision-makers, and design and implement socio-economic and ecological evaluations in selected Laguna del Tigre communities (Paso Caballos, Buen Samaritano, Mirador-Chocop).

Project Management and Evaluation (Total Cost: \$374,668; GEF: \$148,981):

As an integral part of project management, a monitoring and evaluation system will be established to track the progress of project activities and impacts. As the logical framework in Annex 1 indicates, one or more indicators have been defined for the goal, purpose, and output objectives. The means of verifying each of those indicators is shown in the third column of the framework. The internal monitoring system will track all these indicators, and feed the information back to project managers on a periodic and timely basis. Managers will then make adjustments to the project implementation strategy as needed. The internal monitoring and evaluation system would complement systems established by other groups working in the area. For example, project implementers will collaborate with Laguna del Tigre managers

⁵ The *Fideicomiso para la Conservación de Guatemala (FCG)* is a private, not-for-profit group established in the early 1990s to manage a portfolio of conservation trust funds. This group has good deal of experience with trust funds. Because the trust has been established within an existing structure, administrative costs will be shared with other funds, and should thus be very reasonable. The FCG administrators will also bring their experiences managing other trust funds to bear on the Laguna del Tigre fund.

to establish comprehensive evaluation procedures for the Laguna del Tigre management system and subsystems.

V. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT

Sustainability Analysis

Management and protection of Laguna del Tigre is a national priority for the principal project partners, the Government of Guatemala and Conservation International. Both partners have a long-term commitment to provide continued support to Laguna del Tigre at local, national, and regional (Mesoamerican Biological Corridor) levels. Conservation International is a stable, well-regarded conservation presence in the Petén, and has successfully attracted significant national and international investments for its work in Guatemala and around the world. The project will reinforce the commitments of the government and CI to Laguna del Tigre, while improving the prospects for sustainability in other ways:

1. *Community participation*

One of the most significant assurances of long-term sustainability of Laguna del Tigre management will be the enhanced participation of local communities in the planning and implementation of sustainable development activities. This project places a strong emphasis on improving the capacity of Laguna del Tigre communities to manage their concessions, and on increasing the co-management role of communities in overall core zone management and conservation.

2. *Long-term NGO support*

The strengthening of Cănan K'aax as a co-manager of Laguna del Tigre, and the active involvement of other NGOs, is intended to strengthen and stabilize long-term management and protection of Laguna del Tigre. One of the most important impacts of this project will be a capable, committed, and well-funded local non-governmental organization supported by a broad-based partnership. Cănan K'aax already shows signs of becoming a long-term presence in the Petén. Early in 1999, the NGO received a three-year grant from the MacArthur Foundation for more than \$100,000. This grant not only provides critical unrestricted funds, but strengthens the NGO's ability to raise funds from other sources.

3. *Long-term Government support and other forms of financial stability*

Efforts are well underway to diversify and stabilize the financing needed for long-term Laguna del Tigre management. Several mechanisms have been established or are being planned:

- A conservation trust fund, housed in a Guatemalan NGO dedicated to conservation finance.
- Financial support from the oil industry – at least \$130,000 per year, plus logistical and other in-kind support, through at least 2010.
- A portion of the proceeds from the exit tax levied on air and sea travelers. A percentage of this tax is earmarked for CONAP and the support of protected areas.
- A mechanism to capture revenues from visitors to Laguna del Tigre, and direct them to conservation activities. CI and Cănan K'aax will work with CONAP to design this system and implement it.
- Continued Guatemalan government support through CONAP and CONAMA.

A major objective of this project is to reinforce the existing funding mechanisms and identify additional ones.

4. *Long-term donor support*

USAID has supported conservation in Laguna del Tigre for nearly ten years. USAID recently extended its support of the current phase of the Maya Biosphere Reserve project, originally scheduled to end in March 2000, until March 2001. In addition, planning is underway for new multi-year USAID support for SIGAP. Given the very high priority of Laguna del Tigre within SIGAP, it is probable that Laguna del Tigre will continue to enjoy USAID support after completion of the MSP.

Risk Assessment (and Mitigation)

Conservation International and other institutions involved in this project will need to increase their technical capacity to successfully carry out this project. The fact that this project represents a moderate increment in existing activities, rather than an entirely new initiative, mitigates this risk. In addition, a substantial emphasis will be placed on recruiting and training personnel as part of the desired outcomes of this project. Conservation International and the other NGOs involved in the project have demonstrated a strong ability to build technical capacity rapidly in response to local needs.

There is uncertainty as to the degree to which communities will actively participate in Laguna del Tigre management and protection. Initial consultations and planning carried out under the PDF grant have identified a strong level of interest in the communities in working toward economically viable land use alternatives. This project will identify activities that link the communities' interest in socio-economic improvements with conservation objectives. Conservation International has successfully used this strategy to involve other communities in the Petén and elsewhere in conservation management. A related risk is that international support will create dependency or unrealistic expectations in the communities. The emphasis on developing sustainable community organizations to guide planning and decision-making, as well as Conservation International's experience with similar community extension work, should mitigate this risk.

An underlying risk to all conservation efforts in the Petén is that continuing demographic pressures from immigration and population growth will make sustainable development impossible. The project's integrated health program and educational efforts may help reduce population growth rates in the project area. The organization of communities and other constituencies for core zone protection is expected to create resistance to future Laguna del Tigre invasions and other population pressures.

Political and economic interests in Guatemala that benefit from destructive activities in Laguna del Tigre – oil development, resource exploitation, agricultural settlements, etc. – are a continuing threat to its long-term protection. The project will work to provide better information on the negative impacts of these development patterns to decision-makers in the hopes of encouraging the application of sound long-term development policies and practices. The project will also work with these economic stakeholders to educate and encourage them to adopt environmentally sensitive practices, and to become supporters of the LTNP.

VI. STAKEHOLDER INVOLVEMENT AND SOCIAL ASSESSMENT

Using the PDF Block A grant, Conservation International encouraged substantial stakeholder involvement in the development of this project proposal. Workshops were held with representatives of institutions working in Laguna del Tigre, community leaders, and other interested groups to discuss Laguna del Tigre needs and identify alternative strategies for management and protection. Numerous individual consultations have also been held with CONAP and other governmental authorities, representatives of UPR/Basic (the corporation producing oil in Laguna del Tigre), and the professional staff at Cănan K'aax has been instrumental in the development of the proposal.

In addition, much of the design of this project proposal has built upon the recently developed Master Plan for Laguna del Tigre. This plan was developed based on extensive technical data collection and analysis and the active participation of stakeholders in defining policies and priorities for future management. All of the activities proposed in this project are consistent with, and serve to help implement, the Laguna del Tigre master plan.

During the project, a Laguna del Tigre Management Committee will be established. It will be led by Laguna del Tigre administrators, and both community leaders and institutional representatives will participate in planning and coordination of Laguna del Tigre management activities. The committee will meet periodically to provide a forum for exchanging information, identifying priorities, and reviewing and developing proposed activities.

Social Assessment

One of the greatest challenges addressed by this project is the integration of core zone protection with the social needs of Laguna del Tigre communities. Currently 13 communities are using Laguna del Tigre for agriculture and cattle ranching, as well as harvesting native plants and animals. This has resulted in rapidly accelerating deforestation over the last five years. The establishment of Community Management Units is seen as a tool for reducing forest clearing if accompanied by technical assistance to promote the adoption of sustainable agricultural practices and other development alternatives. The limited organization and overall capacity of Laguna del Tigre communities will be a problematic social factor in the execution of this strategy.

The communities in general do not have access to even basic social services (health, education, etc.). Residents have immigrated from all corners of Guatemala; 76% of the families indicate that they were attracted by the availability of land, or because they had exhausted the land in their point of origin; 88% plan to remain in Laguna del Tigre even if they had the opportunity to move away. The average amount of land used per family is greater than in other areas of the Petén, and most families indicate that if their economic situation improved they would acquire cattle, which would result in additional forest clearing.

Communities, government authorities, and non-governmental institutions have only recently begun to confront the complex problem of stabilization of these communities. Communications remain sporadic and most communities still do not have a solid organizational structure. Consequently, some communities have been slow to collaborate with government institutions on Laguna del Tigre management issues.

Oil exploration and production activities in Laguna del Tigre are another important element of the social matrix. Communities generally regard the companies involved favorably as a source of economic revenue. The industry has served to attract settlers to Laguna del Tigre both by providing direct economic opportunities and by improving access through the construction of roads and survey lines.

VII. INCREMENTAL COST ASSESSMENT

Broad Project Goal

The proposed project complements, rather than substitutes for, baseline activities. The broad project goal is the conservation of the biodiversity and natural habitats of Laguna del Tigre National Park and Biotope. This will be achieved through the improvement of the management of Laguna del Tigre, and the community management units within it, by government, NGOs, communities, and other actors.

Baseline Scenario

In the absence of GEF funding, the Government of Guatemala (CONAP, CECON) and partner NGOs (CARE, CI, Cănan K'aax) will make a significant investment in the protection and management of Laguna del Tigre Park and Biotope, and in the communities in and around the protected area. The majority of these funds will come from USAID, as part of the Maya Biosphere Reserve project. CONAP, CECON, CI, and CARE would provide counterpart to the USAID funds. Under this scenario, it is estimated that a total of \$3,113,022 would be expended over a two-year period (see the incremental cost matrix at the end of this section for details).

Under this scenario, project implementers will work with communities in and around Laguna del Tigre to establish more environmentally sound economic alternatives, sign cooperative agreements between the government and the communities, maintain boundaries between the community management units and the park and biotope, encourage families to settle outside Laguna del Tigre, prevent forest fires, and clarify land tenure. There would be limited government and private spending on core zone protection, administration, and scientific research, and on environmental education of Laguna del Tigre residents and neighbors.

The baseline scenario represents important contributions to the protection of the biodiversity of Laguna del Tigre, but spending on protection of globally important biodiversity is well below optimum levels. Laguna del Tigre might survive as a core protected area under this scenario, but there will be limited park management capacity, little detailed scientific and socio-economic understanding of the area, and poor awareness of the area's significance on the part of the general public beyond the Petén.

GEF Alternative

The GEF Alternative seeks to ensure that Laguna del Tigre will emerge from these early and critical first years as a stable and successful protected area. The GEF Alternative comprises both the baseline scenario and proposed MSP activities, and total cost of implementation would amount to \$4,775,790. In comparison to the baseline scenario, spending on the following elements would increase significantly under the GEF Alternative:

- Introducing economic alternatives, such as agroforestry and environmentally sound businesses, into Laguna del Tigre communities;
- Strengthening forest management in Laguna del Tigre communities;
- Establishing the municipality of San Andrés as a co-manager of the park;
- Establishing a local NGO as a co-manager of the park;
- Reinforcing CONAP's Laguna del Tigre management capacity;
- Improving environmental education in Laguna del Tigre communities;
- Strengthening partnerships among CONAP, the municipality, and Laguna del Tigre communities;
- Improving conservation awareness within a broad spectrum of Guatemalan society and the international community;
- Improving the long-term financial stability of CONAP and Cănan K'aax;
- Carrying out a set of important ecological baseline studies.

Under the GEF Alternative, GEF funds would be used for activities specifically designed to improve the protection and management of globally important biodiversity. These activities include reinforcing CONAP's core zone management capabilities, improving the scientific and socio-economic understanding of Laguna del Tigre, and disseminating information regarding Laguna del Tigre to the general public and decision-makers.

The result of the increased investment under the GEF Alternative would be a fully functioning protected area, with a well-trained and staffed central government environmental agency coordinating overall management and assisted by a number of governmental and non-governmental actors as co-managers. There would be widespread awareness of the area and its ecological values, not only among Laguna del Tigre residents but also among the broader Guatemalan general public. There would be good scientific and socio-economic understanding of the area, which in turn would be contributing to optimum management by CONAP and its partners.

Costs

The difference in cost between the Baseline Scenario (\$3,113,022) and the GEF Alternative (\$4,775,790) amounts to \$ 1,662,768. The availability of GEF funds for the proposed MSP has enabled Conservation International to leverage additional funding that would not otherwise have been available. Specifically, additional resources amounting to \$940,137 have been secured, and in the course of the two-year period, the GEF MSP may catalyze still yet more funding. In view of the leveraging effect, full incremental cost funding from the GEF is not being requested; only \$722,631 is requested, representing 15% of GEF Alternative project costs.

Incremental Cost Matrix (In US Dollars)

Component	Baseline			Alternative Total	Increment (Alternative-Baseline)		
	Other Sources	CI	Total		GEF	Other Sources	Total
Environmentally Sound Economic Alternatives Introduced	\$347,908	\$42,659	\$390,568	\$608,918	\$25,850	\$192,500	\$218,350
Community and Municipal Organizations Strengthened	\$133,566	\$35,888	\$169,453	\$278,353	\$56,925	\$51,975	\$108,900
Environmental Education and Conservation Awareness Programs Established	\$179,939	\$6,325	\$186,264	\$395,814	\$61,325	\$148,225	\$209,550
NGO Co-management Capacity Strengthened	\$141,360	\$16,019	\$157,379	\$314,129	\$39,875	\$116,875	\$156,750
Central Government Park Management System Reinforced	\$777,975	\$24,750	\$802,725	\$1,181,675	\$237,600	\$141,350	\$378,950
Ecosystem Health and Socioeconomic Conditions Documented	\$86,625	\$19,250	\$105,875	\$321,475	\$152,075	\$63,525	\$215,600
Public Health System in Selected Communities Strengthened	\$30,000	\$129,250	\$159,250	\$159,250	\$0	\$0	\$0
Technical Assistance and Incentives Provided to Buffer Zone Communities	\$538,080	\$0	\$538,080	\$538,080	\$0	\$0	\$0
Project Management and Evaluation	\$537,634	\$65,794	\$603,428	\$978,096	\$148,981	\$225,687	\$374,668
Total Project Cost	\$2,773,087	\$339,934	\$3,113,022	\$4,775,790	\$722,631	\$940,137	\$1,662,768

VIII. BUDGET

The budget below presents expenses for the proposed MSP (Baseline costs are not included). The Total GEF contribution to MSP development and implementation would amount to \$747,631 (Block A grant + MSP grant).

MSP Expense Category	GEF	Other Sources	Total
Personnel	\$153,104	\$215,352	\$368,456
Subcontracts	\$50,001	\$69,045	\$119,047
Training	\$184,005	\$321,147	\$505,152
Equipment	\$152,329	\$163,982	\$316,312
Travel	\$72,002	\$93,902	\$165,904
Evaluation Mission*	\$69,252	\$43,153	\$112,405
Miscellaneous	\$41,936	\$33,556	\$75,492
TOTAL MSP	\$722,631	\$940,137	\$1,662,768
PDF Block A	25,000		
TOTAL GEF	\$747,631		

* This category covers the non-personnel costs of project implementation and impact monitoring and evaluation, including outside evaluations, so it may be somewhat broader than evaluation missions per se.

X. PUBLIC INVOLVEMENT PLAN

Stakeholder Identification

The principal stakeholders who will be involved in the execution of this project can be grouped in the following categories:

Governmental Institutions

- National Environmental Commission (CONAMA) - responsible for environmental regulation
- National Council for Protected Areas (CONAP) - responsible for administration of Laguna del Tigre and resources management in the Maya Biosphere Reserve
- Center for Conservation Studies (CECON) - responsible for administration of Laguna del Tigre Biotope, a core area within Laguna del Tigre
- National Institute for Anthropology and History (IDAEH) - responsible for protection of cultural resources
- Municipality of San Andrés - local government serving communities within Laguna del Tigre
- Army of Guatemala - responsible for national security, including border control
- National Civil Police (PCN) - responsible for legal enforcement
- Ministry of Health - responsible for health services and regulations
- Ministry of Agriculture (MAGA) - responsible for agricultural and forestry assistance and regulations
- Ministry of Education - responsible for educational services
- National Literacy Commission (CONALFA) - responsible for literacy programs
- Ministry of Energy and Mines (MEM) - responsible for regulation of oil and gas related activities
- International Commission on Limits and Waters (CILIA) - responsible for maintaining the Mexican border
- U.S. Agency for International Development - financing multi-year Maya Biosphere Reserve project

Non-governmental Institutions

- Cānan K'aax - providing assistance to Laguna del Tigre administrators
- CARE - providing assistance to Laguna del Tigre communities in establishing management units
- Religious Institutions - providing assistance to Laguna del Tigre communities
- Alianza Verde - representing ecotourism interests in the Petén
- Guacamaya Foundation - providing environmental education and assistance to neighboring communities

Community Organizations

- Community Improvement Committees - each Laguna del Tigre community has formed, or is expected to form, a committee to serve as official representatives before CONAP and the Municipality of San Andrés.
- Environmental Commissions - the Municipality is assisting communities in forming working commissions to focus on environmental issues

Private Sector

- Union Pacific Resources Group/Basic Resources International. - responsible for oil exploration and exploitation in Laguna del Tigre

Information Dissemination and Consultation

Under the PDF grant, substantial consultations were undertaken with representatives of nearly all the stakeholder groups identified above. These consultations served to better define needs and priorities, as well as to craft strategies that are believed to be feasible, effective, and will be supported by a broad-based constituency.

The project itself includes information dissemination and consultation at various levels. Activities to promote the adoption of improved agricultural and health practices will require a strong investment in consultation to tailor strategies to individual communities and information dissemination to demonstrate alternatives. Similarly, developing a collaborative relationship between communities and the Laguna del Tigre administration will require consultations and extension programs to assure a common understanding of the rights and responsibilities of Laguna del Tigre residents.

The project also includes a significant investment in more traditional environmental education activities. These are seen as critical to the long-term understanding and support of communities for Laguna del Tigre management. Information on Laguna del Tigre's needs and resources will also be more widely distributed to the stakeholders and other interested organizations and individuals in an effort to build working partnerships to meet acute and long-term needs. Focused consultations will be held with governmental and economic stakeholders to discuss the definition and implementation of policies and best management practices for core zone uses. The results of regular core zone monitoring will be disseminated to key decision-makers as input for Laguna del Tigre planning, budgetary, and management decisions.

Stakeholder Participation

CONAP and Cănan K'aax, the primary participants in Laguna del Tigre administration, will be intimately involved in the design and execution of all project activities. As part of the project, a co-administration agreement will be negotiated between these stakeholders to clarify and coordinate responsibilities. In addition, a Laguna del Tigre Management Committee will be formed to serve as a vehicle for promoting consultation with, and the active participation of, key institutions and communities in management activities. Organizations undertaking substantial roles will establish agreements with Laguna del Tigre administrators for short and long-term cooperation.

The participation of Laguna del Tigre community leaders and residents is critical to the success of this project and the long-term management and protection of Laguna del Tigre. Several activities proposed as part of this project –organizational development, land use planning and management systems, environmental education, integrated health programs, and women empowerment -- are intended to strengthen the communities' capabilities and interest in assuming an active responsibility for managing Laguna del Tigre resources in a sustainable manner.

Social and Participation Issues

Laguna del Tigre National Park is located in remote, border region of Guatemala's least accessible Department. Government presence and authority in the area has been minimal until very recently. Communities have been established illegally and residents have traditionally disregarded authorities and distrusted outsiders. Illegal activities are for some residents the most, or only, economically viable alternatives available. Requiring communities to shift to more sustainable, legal development patterns will have short-term negative impacts on some individuals. This will result in conflicts, but the experience of the past year indicates that organized communities have begun to address these conflicts and work cooperatively with outside institutions and authorities.

The production of oil from a grandfathered concession within Laguna del Tigre will require collaboration and coordination among many stakeholders to minimize and mitigate adverse environmental impacts. Several groups are encouraging the government to put into effect existing policies on environmental management in oil production zones, and to require that oil companies use best management practices. Conservation International has established a working relationship with industry representatives and governmental officials involved with oil activities in Laguna del Tigre. The primary conflict resolution strategy is to provide decision-makers with the best available information, as it emerges from the implementation of the Laguna del Tigre master plan.

XI. MONITORING AND EVALUATION PLAN

Conservation International has worked with Laguna del Tigre administrators to establish a comprehensive monitoring program for Laguna del Tigre. The project will also have its own internal implementation

monitoring and evaluation plan. Key elements of these MSP monitoring plans are summarized below, and indicators for monitoring performance are presented in Annex 1 (attached):

- Laguna del Tigre-wide monitoring of changes in forest cover to assess the success of management strategies intended to limit agricultural clearings.
- Detailed monitoring of changes in the vegetative cover, composition, and structure in selected areas of Laguna del Tigre to evaluate the fire prevention and control program.
- Monitoring of the effects of community management units and oil production on the biodiversity adjacent areas.
- Monitoring of water quality to evaluate both community and oil management practices.
- Monitoring of socio-economic conditions to evaluate the effectiveness of community assistance and management programs.
- Detailed monitoring and evaluation in selected communities (Paso Caballos, Buen Samaritano, Mirador-Chocop) where CI has a major presence, for the purpose of evaluating the effectiveness of project interventions.
- Monitoring on an annual basis of Laguna del Tigre's administrative system for the purpose of evaluating the effectiveness of project interventions. Monitoring will focus on both governmental and non-governmental Laguna del Tigre managers.

Information collected through these monitoring activities, and additional evaluations designed specifically to evaluate the effectiveness of project activities, will be reviewed on an annual basis. Following the first year review changes will be made, as appropriate, in second year activities.

XII. REFERENCES CITED

Consejo Nacional de Areas Protegidas (CONAP). 1998. *Plan Maestro de la Unidad de Manejo Laguna del Tigre, Reserva de la Biósfera Maya, 1999-2003*. Guatemala City: CONAP.

Global Environment Facility. 1998. *Evaluation of Experience with Conservation Trust Funds*. GEF Secretariat, Monitoring and Evaluation Team.

Ramsar. 1998. *Sitio Ramsar Laguna del Tigre, Guatemala. Procedimiento de Orientación para la Gestión*. Gland, Switzerland: Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

Sader, Steven A., Michael Coan, Daniel Hayes. 1998. *Time-series tropical forest change detection for The Maya Biosphere Reserve: Updated Estimates for 1995 to 1997*. Orono, Maine: Maine Image Analysis Laboratory, University of Maine, Department of Forest Management.

ANNEX 1: PROJECT LOGICAL FRAMEWORK

Narrative Summary		Performance Indicators		Means of Verification		Important Assumptions	
Project Goals						Goal to Supergoal	
1	Conserve the biodiversity and natural habitats of Laguna del Tigre National Park and Biotop.	1.1	Laguna del Tigre ecosystem health indicators (water quality, status of core zone, status of recuperation zone, status of zones bordering Community Management Units).	1.1.1	Reports generated by Laguna del Tigre monitoring and evaluation system.		
		1.2	As of the end of 2001, annual rates of conversion of forest, shrub, and wetlands systems in Laguna del Tigre, but outside Community Management Units, will have stabilized at a level no greater than that of the entire Maya Biosphere Reserve (not including buffer zone). For the period 1995-97, the rate for the park, including Community Management Units, was 0.57%. For the Reserve as a whole it was 0.36% per year.	1.2.1	Reports generated by Laguna del Tigre's monitoring and evaluation system.		
Project Purpose						Purpose to Goal	
	Management of Laguna del Tigre, and the community management units within it, by government, NGOs, communities, and other actors, improved.	1.1	"Consolidation criteria" (sufficiency of infrastructure, personnel, training, land tenure, threats analysis, zoning, management planning, research and monitoring, long-term financial stability, local participation and support, etc.) improved vs. a January 1999 baseline	1.1.1	Reports, including annual evaluations of Laguna del Tigre administrative systems, generated by project monitoring and evaluation component.	1	Climatic conditions and fire prevention practices diminish chance of another season of out of control fires that may dampen tourism and damage the ecosystem further.
			Laguna del Tigre Administrative System fully functional by end of 1999 (an external evaluation will be conducted by the end of 1999, and again at the end of 2000, to determine the degree of implementation and functionality).			1	Demographic pressures, from immigration and natural population growth, originating outside Laguna del Tigre subside.
		1.2	Laguna del Tigre Management Committee formally established and meeting on a regular basis to coordinate activities.	1.2.1	Documents related to the formation of the Management Committee, meeting minutes, registers.		
		1.3	At least 3 community-based organizations have signed final agreements by the first quarter of 2000 with CONAP administrators to cooperate in natural resources management efforts.	1.3.1	Signed agreements..		
		1.4	At least three governmental institutions or NGOs have formal agreements with Laguna del Tigre administration and are working actively to support implementation of the Laguna del Tigre master plan.	1.4.1	Signed agreements and work plans.		

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
	1.5 The Environmental Commission of the municipality of San Andrés establishes at least four formal agreements with communities in Laguna del Tigre that commit those communities to aid in the management and conservation of protected area.	1.5.1 Signed agreements	
	1.6 NGO contributions represent at least 25% of the total investment in Laguna del Tigre management.	1.6.1 NGO financial reports.	
	1.7 150 households in (Paso Caballos, Buen Samaritano y El Mirador) adopt agroforestry techniques.	1.7.1 Reports of annual socio-economic evaluations.	
	1.8 Families in Paso Caballos establish medicinal plant gardens: -- 25 by 1st quarter 2000. -- 40 by last quarter 2001	1.8.1 Reports of annual socio-economic evaluations.	
	1.9 At least 75 households participate in an integrated health and conservation project to include: Medicinal plants, preventative and curative health care, improved nutrition and environmental sanitation.	1.9.1 Reports of annual socio-economic evaluations.	
	1.10 15 community health workers applying and sharing their knowledge with the community members by Dec. 2000	1.10.1 Reports of annual socio-economic evaluations.	
	1.11 The proportion of cultivated land within Community Management Units under improved management practices increases by at least: - 20% by the end of 1999 - 40% by the end of 2000 - 60% by the end of 2001 as compared with a 1998 baseline.	1.11.1 Report of the improvements in cultivated areas. Satellite images. Reports of annual socio-economic evaluations.	
	1.12 Children in Laguna del Tigre have greater access to formal education and environmental education programs.	1.12.1 Reports of annual socio-economic evaluations.	

Narrative Summary		Performance Indicators		Means of Verification		Important Assumptions	
Project Outputs						Output to Purpose	
A	Environmentally sound economic and agricultural alternatives introduced.	A.1	3 economic demonstration projects established in Buen Samaritano, Mirador Chocop, and Paso Caballos by January 2000.	A.1.1	Visual inspection of projects. Reports of socio-economic evaluations.	A	A combination of new information, technical assistance, and enforcement of existing regulations will provide sufficient incentives for community residents to risk adopting new practices, and that even limited short-term benefits will generate sufficient interest to assure continuing changes over the long-term.
		A.2	Evaluation of the tourism potential of Laguna del Tigre, and recommendations for its development, management and promotion submitted by third quarter 1999.	A.2.1	Final Evaluation Report.	A	Socio-economic improvements will encourage the communities to unite forces with Laguna del Tigre administration in assuring that lands no longer needed for agriculture will be managed in a form compatible with Laguna del Tigre protection and use.
		A.3	Pilot tourism enterprise focused on Laguna del Tigre established and functioning by 2nd quarter 2000.	A.3.1	Pilot project proposal, work plan and progress reports.		
		A.4	Tourism enterprise in Paso Caballos legalized and functioning independently by Jan 2000.	A.4.1	Legal constitution document, business patent, sales records, financial statements, business plan.		
B	Community and municipal organizations within Laguna del Tigre strengthened	B.1	3 community organizations formally recognized by the government: -- 2 Jan 2000; -- 1 by Jan 2001	B.1.1	Community registers.	B	Better-organized communities will recognize a common interest with Laguna del Tigre administrators and the municipality.

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
	B.2 Community members and municipal officials trained in variety of environmental themes including: * Fire control and prevention * Community organization * Citizenship, * Local empowerment, * Environmental Education, * Conflict resolution -- 75 during 1999 -- 75 during 2000	B.2.1 Training register	B With a better understanding of the law, communities will be less apt to break the law.
			B A municipality strengthened in environmental matters will play a crucial positive role in co-management of Laguna del Tigre.
			B At least 650 families formalize their land titles in the buffer zone of Laguna del Tigre, and 8 buffer zone communities agree to collaborate with Laguna del Tigre authorities in management activities.
C Environmental education and conservation awareness programs established and operational.	C.1 Environmental education curriculum designed, submitted to Ministry of Education, and approved by Laguna del Tigre administration.	C.1.1 Curriculum document with letter of approval from Laguna del Tigre administration.	C While direct environmental benefits will only be realized over the long-term, an environmentally educated population is needed to support sound land-use decisions and appreciate the value of core zone protection.
	C.2 Community educators trained in environmental education curriculum: -- 10 by 12/1999 -- 5 by 6/2000	C.2.1 Training records of the Ministry of Education and the project.	C Good awareness and positive attitudes among the general public regarding the natural environment provide the essential foundation for on-going conservation efforts.
	C.3 Community educators implement environmental education programs in Paso Caballos, Buen Samaritano and Mirador Chocop, reaching a total of 250 students by Dec. 2000.	C.3.1 School registers, registers of the Ministry of Education, and registers of the Environmental Education program.	
	C.4 Visitor information center constructed and functioning at El Peru Archaeological site by	C.4.1 Project implementation document, work plan and	

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
	January 2000.	progress reports.	
	C.5 Information/community education center in El Naranjo completes 2nd. phase of development by January 2000.	C.5.1 Project design & implementation document, work plan and progress reports.	
	C.6 AQUARAP results distributed to decision-makers and general public by March 2000.	C.6.1 Report document	
	C.7 Environmental awareness campaign strategy designed and operational by last quarter of 1999.	C.7.1 Strategy document	
	C.8 Awareness workshops conducted and other Laguna del Tigre information disseminated.	C.8.1 Workshop registers and reports. Copies of informational materials.	
D NGO capacities for Laguna del Tigre co-management strengthened.	D.1 <u>Human resources</u> : staff and board of Cănan K'aax complete training program as follows: -- 1st phase by 1st quarter of 2000 -- 2nd phase by 1st quarter of 2001.	D.1.1 Training records and copies of diplomas.	D NGOs can provide the government of Guatemala with badly needed financial, technical, and political resources to support Laguna del Tigre protection.
	D.2 <u>Finances</u> : financial management plan designed and operational by January 2000.	D.2.1 Management plan approved by board of directors.	D CARE selects and strengthens a local NGO to continue activities initiated with buffer zone and core zone communities.
	D.3 <u>Fundraising</u> : full-time fundraiser hired and trained by January 2000.	D.3.1 Contract and training records.	
	D.4 <u>Fundraising</u> : unrestricted reserve of at least \$100,000 established by January 2000.	D.4.1 Audits and other financial reports.	
	D.5 <u>Project management</u> : Strategic plan completed and first phase executed by January 2000. Second phase of management plan implemented by January 2001.	D.5.1 Project management strategic plan. Results of Laguna del Tigre administration evaluation.	
	D.6 Based on strategic plan, Cănan K'aax is 85% equipped to carry out its Laguna del Tigre management responsibilities by January 2000. 100% equipped by January 2001, including a base within Laguna del Tigre.	D.6.1 Inventory	

Narrative Summary		Performance Indicators	Means of Verification	Important Assumptions			
E	Government Laguna del Tigre management system reinforced.	E.1	Park personnel complete training as follows: - 1st phase of training: Basic training, affecting 100% of park personnel, completed by end of 1999. - 2nd phase of training: Advanced training, focusing on all LTNP technical personnel, completed by end of 2000 - 3rd phase of training: Advanced training, focusing on administrative and management personnel, completed by end of 2001.	E.1.1	Training records and copies of diplomas.	E	Effective Laguna del Tigre administration and management will require a concerted effort to decentralize administrative processes, create sustainable mechanisms for generating and managing finances, build staff capacity, define and execute management programs, and address potentially conflicting stakeholders.
		E.2	Laguna del Tigre administrative and other subsystems strengthened and revised by mid 2001.	E.2.1	Evaluations	E	CONAP encourages the voluntary relocation of at least 250 families living illegally in Laguna del Tigre to areas outside Laguna del Tigre.
		E.3	Long-term financial management plan submitted to CONAP by January 2000.	E.3.1	Financial plan.	E	Government and other actors prevent further invasions of Laguna del Tigre .
		E.4	Long-term fundraising plan for Laguna del Tigre established and approved by CONAP by December 2000.	E.4.1	Fundraising strategy.	E	CONAP provides adequate financial resources and equipment to its administrative personnel.
		E.5	Management plan for the Scarlet Macaw Biological Station (EBG), inside the "zona intangible" on the east side of Laguna del Tigre, established and approved by Laguna del Tigre administration by the end of 1999.	E.5.1	Approved management plan.	E	CONAP carries out an evaluation of the environmental impacts of oil exploration and production in Laguna del Tigre and issues enforceable recommendations to reduce their impact.
		E.6	Laguna del Tigre linked to at least 4 networks and/or organizations dedicated to conservation, research, training, monitoring and development issues in protected areas, by first quarter of 2000.	E.6.1	Memorandum of understanding and registers	E	CECON provides adequate staff and equipment for its biotope inside Laguna del Tigre, in accordance with Laguna del Tigre master plan and annual operating plans.
						E	Oil companies operating in Laguna del Tigre comply with all applicable environmental regulations.

Narrative Summary		Performance Indicators		Means of Verification		Important Assumptions	
F	Changes in ecosystem health and socioeconomic conditions in Laguna del Tigre documented and disseminated to Laguna del Tigre managers.	F.1	Evaluation of forest cover change in Laguna del Tigre, and recommended strategies for controlling the advance of the agricultural frontier, submitted by end of 1999.	F.1.1	Report document	F	Park managers will make timely and appropriate adjustments to Laguna del Tigre's management based on monitoring results.
		F.2	Annual reports on the status of biodiversity conservation in Laguna del Tigre submitted to CONAP and CONAMA during the first quarter of 2000, and again during the last quarter of 2001.	F.2.1	Report document	F	Accurate information on the impacts of Laguna del Tigre management and other activities in the hands of decision-makers will help to create sound conservation policies and practices.
		F.3	Analysis of changes in vegetation composition and structure in the Recuperation Zone, and recommendations for a program to control and prevent fires, and its integration of the intangible zone submitted by the first quarter of 2000.	F.3.1	Report document		
		F.4	Analysis of edge effects and human activities in the Special and Transitional Use Zones (using monitoring of indicator species), and recommendations relating to the management of the Community Management Units, submitted by the last quarter of 2000.	F.4.1	Report document		
		F.5	Annual water quality analysis in Laguna del Tigre completed by the first quarter of 2000 and again in the first quarter of 2001.	F.5.1	Report document		
		F.6	Laguna del Tigre socioeconomic monitoring and evaluation program designed and operational by end of 1999.	F.6.1	Report document		
		F.7	Annual reports of Laguna del Tigre socioeconomic conditions produced by January 2000 and January 2001.	F.7.1	Report document		
		F.8	Rapid ecological evaluation, with an emphasis on wetland ecosystems (AQUARAP), completed and sent with recommendations to CONAP and CONAMA by January 2000.	F.8.1	Report document		
Project M&E	Project Management and Evaluation System Established	Project M&E	First evaluation of Laguna del Tigre administrative system, including NGO comanager(s), completed by January 2000. Second evaluation completed by January 2001.	Project M&E	Evaluation reports.	Project	Project managers make timely and appropriate adjustments to project administration, in accordance with the results of monitoring information.

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
	First socio-economic review in communities completed by January 2000. Second review completed by January 2001.	Evaluation reports	

Narrative Summary		Performance Indicators		Means of Verification		Important Assumptions	
Project Activities		Inputs				Activity to Output	
		<i>See budget in section VIII. of project brief for this information.</i>		Internal budgetary and administrative records.		Details on assumptions and risks at the activity level will be provided in annual work plans developed by the teams responsible for achieving the stated outputs.	
A.1	Assist communities in the design and execution of forest management plans for their management units.						
A.2	Train technicians in plant production techniques.						
A.3	Establish agroforestry demonstration plots in communities.						
A.4	Introduce new, high-yield crops.						
A.5	Study the feasibility of non-traditional economic activities.						
A.6	Conduct market research and analysis of new and existing Laguna del Tigre products. Develop and implement promotion strategies based on marketing results and other information.						
A.7	Study and develop promising tourism products in Laguna del Tigre.						
A.8	Identify and train community groups to run small businesses.						
A.9	Help community groups establish legal structures for their businesses.						
B.1	Provide training and other forms of institutional support to the Environmental Commission of the municipality of San Andrés.						
B.2	Help the Environmental Commission and CONAP establish co-management agreements with Laguna del Tigre communities.						
B.3	Identify, organize, and train community groups responsible for managing the Community						

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
Management Units.			
C.1 Design environmental education curriculum and obtain approval from local education authorities for its use.			
C.2 Design and implement training program for environmental education teachers.			
C.3 Implement environmental education program in Laguna del Tigre communities.			
C.4 Design a campaign to increase public awareness of Laguna del Tigre and build respect for core zone laws and regulations. Focus the campaign on influencing key decision makers.			
C.5 Identify communication mechanisms (information centers, print media, TV, radio, etc.).			
C.6 Implement awareness campaign.			
C.7 Communicate results of Aquarap, environmental studies, and annual evaluations to the general public.			
C.8 Establish information/visitor center in El Peru. Upgrade information center in El Naranjo.			
D.1 Design a strategic Laguna del Tigre co-management plan for the local NGO Cănan K'aax.			
D.2 Establish management and administration systems for Cănan K'aax.			
D.3 Design and implement a fundraising plan for the NGO, with an emphasis on ensuring the long-term viability of the organization.			
D.4 Encourage the Government of Guatemala to authorize an NGO comanagement role in Laguna del Tigre for Cănan K'aax.			
D.5 Design and implement training programs for NGO staff.			

Narrative Summary	Performance Indicators	Means of Verification	Important Assumptions
E.1 Provide technical assistance to strengthen the following Laguna del Tigre management subsystems: financial systems, park protection, law enforcement, research and monitoring, and public use programs.			
E.2 Design and implement a fundraising program for Laguna del Tigre.			
E.3 Devise and implement 3-phase training program for park guards, technicians, and management personnel.			
E.4 Design and execute a management plan for the Scarlet Macaw Biological Station (EBG) and its area of influence in the eastern section of Laguna del Tigre.			
E.5 Link Laguna del Tigre with international research and conservation networks.			
E.6 Work with key economic stakeholders (oil and tourism especially) to define and adopt best management practices in Laguna del Tigre.			
F.1 Design socioeconomic and ecological monitoring and evaluation programs for Laguna del Tigre. Help Laguna del Tigre managers carry out the program.			
F.2 Conduct study on the use and quality of habitats in selected areas and their relation to other areas within the reserve (include recommendations for the management of Scarlet Macaws, Parrots, and other threatened species)			
F.3 Design and carry out a study of water quality, edge effects, habitat quality, and human impacts in the "Special" and "Transitional" Use zones.			

Narrative Summary		Performance Indicators		Means of Verification		Important Assumptions	
F.4	Disseminate results of Aquarap, environmental studies, and annual evaluations to decision-makers.						
F.5	Design and implement socio-economic and ecological evaluations in CI (Paso Caballos, Buen Samaritano, Mirador-Chocop) Laguna del Tigre communities.						
Project M&E	Design and implement annual project evaluations. Coordinate with other socio-economic and ecological evaluations being conducted by other donors and organizations.						
	Design and conduct evaluation of the Laguna del Tigre administrative system.						
	Adapt and modify project design based on monitoring and evaluation results.						
	Project coordination and management						

ANNEX 2: DETAIL OF ACTIVITIES AND FINANCIAL INPUTS NEEDED TO ENABLE CHANGES

	Outcome/Activity	GEF	Other Sources	Total
A.1	Assist communities in the design and execution of forest management plans for their management units.	\$25,850	\$21,863	\$47,713
A.2	Train technicians in plant production techniques.	\$0	\$23,100	\$23,100
A.3	Establish agroforestry demonstration plots in communities.	\$0	\$24,063	\$24,063
A.4	Introduce new, high-yield crops.	\$0	\$29,700	\$29,700
A.5	Study the feasibility of non-traditional economic activities (crocodile ranching, beekeeping, etc.).	\$0	\$19,250	\$19,250
A.6	Conduct market research and analysis of new and existing Laguna del Tigre products. Develop and implement promotion strategies based on marketing results and other information.	\$0	\$9,488	\$9,488
A.7	Study and develop promising tourism products in LTNP.	\$0	\$23,650	\$23,650
A.8	Identify and train community groups to run small businesses.	\$0	\$35,063	\$35,063
A.9	Help community groups establish legal structures for their businesses.	\$0	\$6,325	\$6,325
	Total Outcome A	\$25,850	\$192,500	\$218,350
B.1	Provide training and support to the environmental commission of the municipality of San Andres to integrate the management of LTNP in the city hall priorities.	\$44,000	\$20,625	\$64,625
B.2	Help the Environmental Commission and CONAP establish Laguna del Tigre co-management agreements with Laguna del Tigre communities.	\$6,600	\$12,375	\$18,975
B.3	Identify, organize, and train community groups responsible for managing the Community Management Units.	\$6,325	\$18,975	\$25,300
	Total Outcome B	\$56,925	\$51,975	\$108,900
C.1	Design environmental education curriculum and obtain approval from local education authorities for its use.	\$5,500	\$5,500	\$11,000
C.2	Design and implement training program for environmental education teachers.	\$6,875	\$12,100	\$18,975
C.3	Implement environmental education program in Laguna del Tigre communities.	\$12,650	\$25,300	\$37,950
C.4	Design a campaign to increase public awareness of the Laguna del Tigre and build respect for laws and regulations. Focus the campaign on influencing key decision makers.	\$0	\$24,750	\$24,750
C.5	Identify communication mechanisms (information centers, print media, TV, radio, etc.).	\$0	\$12,650	\$12,650
C.6	Implement awareness campaign strategy.	\$17,600	\$35,475	\$53,075
C.7	Communicate results of Aquarap, environmental studies, and annual evaluations to the general public.	\$0	\$13,750	\$13,750
C.8	Establish information/visitor center in El Peru. Upgrade information center in El Naranjo.	\$18,700	\$18,700	\$37,400
	Total Outcome C	\$61,325	\$148,225	\$209,550
D.1	Design a strategic Laguna del Tigre comanagement plan for Canankax.	\$3,850	\$5,500	\$9,350
D.2	Establish management and administration systems for the	\$7,700	\$12,513	\$20,213

	Outcome/Activity	GEF	Other Sources	Total
	NGO.			
D.3	Design and implement a fundraising plan for the NGO, with an emphasis on ensuring the long-term viability of the organization.	\$22,000	\$60,500	\$82,500
D.4	Encourage the Government of Guatemala to authorize an NGO comanagement role in LTNP for Canankax.	\$6,325	\$6,325	\$12,650
D.5	Design and implement training programs for Canankax staff.	\$0	\$32,038	\$32,038
	Total Outcome D	\$39,875	\$116,875	\$156,750
E.1	Provide technical support to strengthen the following Laguna del Tigre management subsystems: financial systems, park protection, law enforcement, research and monitoring, and public use programs.	\$67,650	\$49,500	\$117,150
E.2	Design and implement a fundraising program for LTNP.	\$67,100	\$22,000	\$89,100
E.3	Devise and implement 3-phase training program for Laguna del Tigre guards, technicians, and management personnel in the Peten.	\$44,000	\$33,000	\$77,000
E.4	Design and execute a management plan for the Scarlet Macaw Biological Station (EBG) and its area of influence in the eastern section of LTNP.	\$31,350	\$31,350	\$62,700
E.5	Link LTNP with international research and conservation networks.	\$16,500	\$0	\$16,500
E.6	Work with key economic stakeholders (oil and tourism interests especially) to define and adopt best management practices in the Laguna del Tigre.	\$11,000	\$5,500	\$16,500
	Total Outcome E	\$237,600	\$141,350	\$378,950
F.1	Design socioeconomic and ecological monitoring and evaluation programs for LTNP. Help LTNP managers carry out the program.	\$27,500	\$38,500	\$66,000
F.2	Conduct study on the use and quality of habitats in selected areas and their relation to other areas within the reserve (include recommendations for the management of Scarlet Macaws, Parrots, and other threatened species).	\$19,800	\$0	\$19,800
F.3	Design and carry out a study of water quality, edge effects, habitat quality, and human impacts in the "Special" and "Transitional" Use zones.	\$69,025	\$0	\$69,025
F.4	Disseminate results of Aquarap, environmental studies, and annual evaluations to decision-makers.	\$14,300	\$0	\$14,300
F.5	Design and implement socio-economic and ecological impact evaluations in CI (Paso Caballos, Buen Samaritano, Mirador-Chocop) Laguna del Tigre communities.	\$21,450	\$25,025	\$46,475
	Total Outcome F	\$152,075	\$63,525	\$215,600

	Outcome/Activity	GEF	Other Sources	Total
Proj t M&E	Design and implement annual project evaluations. Coordinate with other socio-economic and ecological evaluations being conducted by other donors and organizations.	\$43,725	\$43,725	\$87,450
	Design and conduct evaluation of the LTNP administrative system.	\$11,000	\$0	\$11,000
	Adapt and modify project design based on monitoring and evaluation results.	included in project M&E	included in project M&E	included in project M&E
	Project Coordination and Management	\$94,256	\$181,962	\$276,218
	Total Project Management and Evaluation	\$148,981	\$225,687	\$374,668
	Total Project Implementation Cost	\$722,631	\$940,137	\$1,662,768
	Project Development Funds (PDF Block A)	\$25,000		
	GRAND GEF TOTAL	\$747,631		

ANNEX 3

Laguna del Tigre National Park and Biotope in the National Context

