CRITICAL ECOSYSTEM PARTNERSHIP FUND

Ecosystem Profile

Northern Region
Of The
MESOAMERICA BIODIVERSITY HOTSPOT

Belize, Guatemala, Mexico

Final version
January 15, 2004

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INTRODUCTION

The Critical Ecosystem Partnership Fund (CEPF) is designed to safeguard the world's threatened biodiversity hotspots in developing countries. It is a joint initiative of Conservation International (CI), the Global Environment Facility (GEF), the Government of Japan, the MacArthur Foundation and the World Bank. CEPF supports projects in hotspots, areas with more than 60 percent of the Earth's terrestrial species in just 1.4 percent of its land surface. A fundamental purpose of CEPF is to ensure that civil society is engaged in efforts to conserve biodiversity in the hotspots. An additional purpose is to ensure that those efforts complement existing strategies and frameworks established by local, regional and national governments.

CEPF aims to promote working alliances among community groups, nongovernmental organizations (NGOs), governments, academic institutions and the private sector, combining unique capacities and eliminating duplication of efforts for a comprehensive approach to conservation. CEPF is unique among funding mechanisms in that it focuses on biological areas rather than political boundaries and examines conservation threats on a corridor-wide basis to identify and support a regional, rather than a national approach to achieving conservation outcomes.

THE ECOSYSTEM PROFILE

The purpose of the ecosystem profile for Northern Mesoamerica is to define measurable outcomes for conserving species, sites and corridors, to provide a rapid assessment of the threats and underlying causes of biodiversity loss and to identify funding gaps and opportunities for investment. The ecosystem profile recommends strategic funding directions that contribute to the conservation of biodiversity in this globally significant region. Organizations representing civil society propose projects that fit into these strategic directions. The profile does not define the specific activities that prospective implementers may propose, but outlines the conservation strategy that will guide those activities. Applicants for CEPF grants will be required to prepare detailed proposals identifying and describing the interventions and performance indicators that will be used to measure the success of their projects.

This ecosystem profile and five-year investment strategy for the Northern Mesoamerica region was developed based on stakeholder consultation and review of background reports coordinated by CI. Seventy-four experts representing 42 scientific, governmental and nongovernmental organizations from Belize, Guatemala and Mexico participated in the preparation of the profile. Data on biodiversity, socioeconomic factors, institutional context and conservation efforts were compiled and synthesized from more than 330 organizations, representing international donors, NGOs, public agencies, universities, community-based groups and the private sector. A three-week tour of the region in January 2003 permitted field observation and discussion with local communities and park staff, followed in February 2003 with a stakeholder workshop in Guatemala that enabled broad input from the conservation community to formulate the niche and investment strategies proposed for CEPF. Experts in the region then validated the niche and investment strategy in August 2003.

As the region has undertaken several priority-setting exercises in the past, the development of this ecosystem profile aimed to ensure consensus without duplicating efforts in the establishment of priorities. In 2000, the principal international conservation organizations in the region,

including CI, The Nature Conservancy and WWF joined forces with recognized scientific experts, local NGOs and the Mesoamerica Biological Corridor Project to identify priority actions and conservation gaps at the regional level. This process began as an independent effort before CEPF approved the Northern Mesoamerican region as a target for investment. However, CEPF strategically invested in the subsequent process of establishing priorities and the results of this process form an important element in the approach recommended for CEPF investment.

In Northern Mesoamerica, CEPF will direct its funding to influence development policies and investments through civil society and local government action in order to achieve conservation outcomes in the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands conservation corridors. After five years of investment, CEPF is expected to have achieved the following results:

- Fostered civil society participation in regional decisionmaking to promote policies and investments that support the conservation and sustainable development within the two conservation corridors, focusing on agriculture, infrastructure, tourism and forest fires;
- Facilitated and operationalized successful conservation activities, in partnership with other donors, in eight key biodiversity areas;
- Directly supported conservation actions in three priority areas; and
- Contributed to preventing the extinction of Northern Mesoamerica's 106 critically endangered species.

BACKGROUND

Mesoamerica is comprised of the seven countries in Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) and the five states of southeastern Mexico (Campeche, Chiapas, Quintana Roo, Tabasco and Yucatan), with a total area of approximately 760,00 km^2. This ecosystem profile focuses on the northern region of the Mesoamerica hotspot, which includes the areas of northwest Belize, north and central Guatemala and the southern Mexican states of Campeche, Chiapas, Oaxaca, Quintana Roo, Tabasco and Yucatan. The geographical area under study extends from the Zoque Forest in Oaxaca to the Lacandona Forest in Chiapas and from the northern Yucatan in Calakmul and Cozumel Island down to the Maya Biosphere Reserve in Guatemala, stretching to the Montañas Mayas in Belize with the Rio Bravo Reserve, before continuing along the Pacific down the Sierra Madre in Chiapas and El Triunfo as far as the Cuchumatanes and the Sierra de las Minas in Guatemala.

Biological Importance

With less than one half percent of the land of the planet, Mesoamerica possesses between 7 and 10 percent of all known forms of life and 17 percent of all terrestrial species (Table 1). The region is among the most biologically diverse on the planet. Mesoamerica is the second most important of 25 hotspots in the world for species diversity and endemism—only the Tropical Andes hotspot ranks higher. For species diversity, Mesoamerica ranks number one for reptiles, and number two for amphibians, birds, mammals and non-fish vertebrates. Rates of endemism are equally high. Mesoamerica is classified as the highest in the world for mammalian endemism and second highest for amphibian, bird, reptilian and non-fish vertebrate endemism. Furthermore, three of the Western Hemisphere's four migratory bird routes converge in the region.

Table 1. Number of species in Northern Mesoamerica

Country	Mammals	Birds	Reptiles	Amphibians	Plants
Belize	163	571	121	42	3,409
Guatemala	251	738	231	112	8,681
Mexico					
Campeche	79	ND	ND	ND	8,218
Chiapas	171	628	ND	ND	1,257
Quintana Roo	90	340	ND	ND	2,180
Tabasco	88	370	ND	ND	ND
Yucatan	93	343	ND	ND	2,280

ND - No data available. Source: IUCN 2002; CONABIO 1998; CCAD 1999b; CONAMA 1999; NBC 1998; DGB 2001; Obando 2002; OdD-UCR and UNEP 2001; Mendieta and Vinocour 2001.

Several factors are responsible for the region's exceptionally high diversity. Geographically, Mesoamerica serves as a terrestrial bridge between two of the world's great biogeographic realms: the Nearctic of North America and the Neotropic of South and Central America and the Caribbean. Indeed, the great transition zone between the two realms is centered in Oaxaca, which is the most diverse of all Mexican states. Furthermore, Pacific and Caribbean coastal-marine ecosystems and the second largest reef in the world border the region. Inland, extensive mountain chains reach up to 4,211 meters and annual average rainfall varies widely from 500 to 7,000 mm. There are three biomes, 20 life zones and 33 ecoregions, including coastal-marine, rainforests, cloud forests, dry forests and pine forests. The Selva Maya is the largest continuous expanse of tropical rainforest in the Americas after the Amazon.

In addition, the area's broken topography and multiple microclimates has produced the region's own unique species. In Northern Mesoamerica, a series of highlands and mountain chains—including Santa Marta volcanic range near Coatzacoalcos in Mexico and Sierra de las Minas in Guatemala—are considered evolutionary islands. Physically isolated from surrounding valleys and lowlands plains, they are home to many endemic species of plants and animals.

Socioeconomic Context

Mesoamerica's biological diversity is echoed by its demographic diversity. The region is home to 32 distinct ethnic and indigenous groups with a total population of more than 9 million, or about 45 percent of the total population of the region. Most of the area's native inhabitants share a common heritage as descendants of the Mayan civilization. They speak 29 different Mayan languages. Today's Mayans are concentrated in southern Mexico and in the highlands of Guatemala, where as much as 85 percent of the population is indigenous. Together with other native peoples, such as the Zoque, Xinca, and Garifuna, the Maya have a significant presence among the membership and management of NGOs in the region.

In contrast to Mesoamerica's exceptional biological and cultural wealth, however, nearly 50 percent of the region's 45 million people live below the poverty line. In rural areas, more than 70 percent of the population is poor or needy. With an annual growth rate of more than 2 percent, the population is expected to double by 2025. Obstacles to the region's economic development have included civil unrest throughout the 1980s and early 1990s in Guatemala, and to this day in Southern Mexico with the Zapatista movement. Furthermore, natural disasters in the form of floods, hurricanes, volcanic eruptions and earthquakes have continually set back advances made

by the region's economies. Hurricane Mitch in 1998 alone caused more than 11,000 deaths and $5 billion in property damage. The region's poverty and demographic pressures are considered to be driving forces behind the environmental degradation experienced over the last three decades.

The economic base has historically relied on agriculture, and more recently on industry and commerce. In the last decade, however, tourism has been the fastest growing sector. Approximately 1 million visitors travel to the region's protected areas each year, generating billions of dollars and surpassing agriculture as the principal economic sector in several Central American countries.

Progress in Conserving Biodiversity

In the last 20 years, significant strides have been made to put conservation on the agenda. Partnerships between governments, NGOs, universities, the scientific community, indigenous and campesino communities, the private sector and community groups have resulted in a number of institutional frameworks for conservation. Within these frameworks, the Central American System of Protected Areas (SICAP) and Central American Commission on the Environment and Development (CCAD) have occupied a position of importance in both Central American regional and national agendas. One of the environmental tasks that governments have undertaken is an effort to save the forests and protect their biodiversity from the threat of agricultural and urban expansion and uncontrolled logging.

Of particular importance in the last two decades was the establishment of a system of protected areas in each country. Governments have worked closely with NGOs and universities to set aside some 600 protected areas, covering about 20 percent of the region. Thirty-one Ramsar sites and Wetlands of International Importance were declared, as were seven World Heritage sites. In Northern Mesoamerica, 194 areas covering 8.3 million hectares were declared as protected as of 2000 (see Table 2). In spite of the strides in setting aside land for diverse categories of protection, about 60 percent of these sites are less than 10,000 hectares in area, and are considered to be too small for maintaining viable populations of species over the long run. With this limitation, the importance of establishing connectivity through appropriate land uses between protected areas to avoid fragmentation must be underscored.

Table 2. Protected Areas in Northern Mesoamerica, 2000

Country	Number of Protected Areas	Area (ha)	Percent of Territory Protected	Percent of Total Area Protected in Mesoamerica
Belize	59	1,029,110	44.82	6.04
Guatemala	104	2,865,830	26.32	16.83
Mexico	31	4,469,000	18.77	26.24
Campeche	4	1,793,000	31.44	10.53
Chiapas	14	980,000	13.31	5.76
Quintana Roo	9	998,000	25.46	5.86
Tabasco	1	303,000	12.31	1.78
Yucatan	3	395,000	9.06	2.32
Total	194	8,363,000		

Source: CCAD, UNDP, GEF, 2002

In addition to the declaration of these protected areas, CCAD has become one of the most important pillars in the modernization of environmental legislation. By 1995, all Mesoamerican countries established environmental legislation with the objective of ensuring the conservation of forests and biodiversity. They also developed a set of principles and instruments for the protection of the environment and the prevention of pollution. Over the past five years, CCAD has worked toward forming strategic alliances involving technical teams from each member country to address the challenges of conservation, including such issues as international trade in endangered species, biodiversity and protected areas.

More recently, over the last two years, CCAD has set up the Permanent Forum for the Civil Society as a mechanism for coordination with regional NGOs. This mechanism was established as a means for regional dialogue and interaction with the Council of Environment Ministers of Central America and as a point for consultation between the various organizations representing the sectors of Central American civil society.

The Mesoamerica Biological Corridor (MBC), funded by the World Bank through GEF and other partners such as German Technical Cooperation (GTZ), has been another important achievement in conservation in the region. The initiative is one of the most ambitious plans for bringing conservation and sustainable development to the regional agenda. It involves both a political and a programmatic approach and emphasizes the conservation of biodiversity, the consolidation of the regional system of protected areas, community development and communications. Efforts during the first few years have focused on positioning the concept, developing the legal and institutional framework and implementing concrete projects. In the next phase of the MBC, the lessons learned will be examined and a new consolidation phase will begin as a platform for the sustainable development of the region. In Northern Mesoamerica, the MBC recently started its operations in Mexico.

Northern Mesoamerica is a highly complex and dynamic region from an ecological, political and social perspective. To ensure that CEPF funding is channeled toward grants that are strategically positioned to achieve the greatest benefits for conservation, preparation of the ecosystem profile relied on three analytical exercises. A biological assessment defined which species and geographical areas are the most important to conserve. A threats assessment examined the most critical pressures confronting these priority areas that require urgent attention to prevent the loss of biological diversity. And an investment analysis identified funding trends, gaps and opportunities to ensure CEPF investments complement and build synergy with funding from other donors and actors in the region. These three analytical pieces formed the basis for the development of the CEPF investment strategy and niche, and are summarized below.

CONSERVATION OUTCOMES

To ensure CEPF investments are channeled toward the species and locations of the highest priority, the ecosystem profile adopts conservation outcomes—targets against which the success of investments can be measured—as the scientific underpinning for determining CEPF's geographic and thematic focus. These conservation outcomes were defined in cooperation with scientists from CI's Center for Applied Biodiversity Science, and represent the full set of quantitative targets that must be achieved in order to prevent biodiversity loss. The expectation is that CEPF grantees will work in partnership with other donors and key actors to ensure that investments are working toward preventing biodiversity loss and that performance toward

measurable goals will be monitored and evaluated. Outcomes, therefore, do not represent those targets to be achieved exclusively through CEPF funds, but rather through partnerships with other conservation organizations, government, communities and donors.

The conservation outcomes presented in this ecosystem profile span a hierarchical continuum of three ecological scales:

- Species - avoid the extinction of globally threatened species;
- Sites - areas containing species of global importance; and
- Corridors - landscapes that maintain ecological processes.

These three levels are connected geographically through the presence of species that are located in several sites, and beyond, at sites housed within larger landscapes. An ecological connection also exists. If species are to be conserved, then the sites where they reside must be protected and sustainably managed; landscapes must maintain the ecological services on which the sites and the species depend. At the landscape level, the team defined biodiversity conservation corridors (within which sites are nested) to target investments at increasing the amount of habitat with ecological and biodiversity value within these corridors. Given the threats to biodiversity at each of the three levels, the ecosystem profile team set quantifiable targets in terms of extinctions avoided, sites protected and corridors consolidated.

Outcome definition is a fluid process and as data become available, species-level outcomes need to be expanded to include other taxonomic groups that previously had not been assessed. Avoiding extinctions means conserving globally threatened species to make sure that their IUCN Red List status improves or at least stabilizes. This in turn means that data are needed on population trends. For most of the threatened species, however, no such data is currently available.

Species Outcomes

In determining species outcomes, CEPF aims to stabilize and improve the conservation status of species in order to achieve the ultimate goal of avoiding the extinction of globally threatened species. Thus, in preparing the ecosystem profile, CI determined that the obvious targets for conservation in Northern Mesoamerica are globally threatened species that have a high probability of extinction in the medium term. Species outcomes were therefore based on the conservation status of individual species, as compiled in the 2002 IUCN Red List, which provides quantitative, globally applicable criteria under which the probability of extinction is estimated for each species. At the time of this profile's preparation, IUCN had identified 470 species as Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) for Mesoamerica (Table 3). Preventing the extinction of these species forms the first level of quantitative conservation outcomes.

Globally threatened species in Northern Mesoamerica are dominated largely by plants due to the fact that this taxonomic group contains many more species than other taxa, and also by amphibians based on the disproportionate threat that amphibians face in the region. Of these 470 species, 106 species are considered to be Critically Endangered, defined as those species that face an extremely high risk of extinction in the wild. Northern Mesoamerica's Critically Endangered species are listed in Appendix 1.

Table 3: Northern Mesoamerica's Globally Threatened Species

Taxonomic Group	Number of Globally Threatened Species			Country			Total*
	Critically Endangered	Endangered	Vulnerable	Belize	Guatemala	Mexico	
Plants	57	82	145	28	79	189	284
Invertebrates	1	13	3	1	8	12	17
Fish	4	5	3	ND	ND	12	12
Amphibians	33	36	36	3	50	35	105
Reptiles	4	5	3	5	9	10	12
Birds	2	5	7	2	6	11	13
Mammals	5	11	10	5	8	19	25
Total	106	157	207	44	160	288	470

ND- No data available.

* Note that total species reflects the summation of Critically Endangered, Endangered and Vulnerable species in the three countries.

Site Outcomes

Site outcomes aim to identify, document and protect areas that are critical for the conservation of global biodiversity. Most species are best conserved through the protection of sites that they inhabit. Thus, the next level of analysis for the ecosystem profile sought to identify particular site outcomes, also called key biodiversity areas, for each target species. The objective of defining individual sites was to identify areas where investments could be made to create protected areas or special conservation regimes, expand existing protected areas and improve protected area management, all of which help to prevent species extinctions. For the analysis, key biodiversity areas were identified based on two major criteria: vulnerability (contain globally threatened species) and irreplaceability (contain globally important congregations of species). Furthermore, the team defined individual sites as those areas that could be managed as a single unit.

To identify site-level outcomes, the team analyzed the distribution of globally threatened species and mapped out the location. Several sources of data were used. In Mexico, the team used Important Bird Areas (IBAs) as determined by the International Council on the Preservation of Birds (CIPAMEX) and BirdLife International. In Belize and Guatemala, the analysis was based on BirdLife International's Key Areas for Threatened Birds in the Neotropics, which are the precursors of the IBAs. In addition, the analysis included existing protected areas where globally threatened species occur, as well as important habitat for threatened species that currently are not protected but could be managed as a single unit. Several additional factors were considered: habitat for endemic species; sites with large congregations of waterfowl and fish; distribution of amphibian species; and analysis of the geo-referenced localities database contributed by the National Commission for the Knowledge and Use of Biodiversity (CONABIO) in Mexico.

Prioritization of the Key Biodiversity Areas

Based on this methodology, the team initially identified 24 key biodiversity areas covering approximately 14.3 million hectares (see Appendix 2 for a detailed list of the globally threatened

species in each key biodiversity area). These are the highest priority sites for conservation, based on both vulnerability and irreplaceability.

To ensure that CEPF invests in those areas of the highest priority for global conservation, the team prioritized the 24 key biodiversity areas further. The areas were ranked based on two considerations: their importance for the protection of endemic and globally and nationally threatened species and on their potential to conserve habitat of wide-ranging, higher trophic level species (Table 4). Because CEPF is a global initiative, the team gave more weight in the analysis to considerations related to ranking in Critically Endangered species. Therefore, while the conservation potential ranking was considered an important element, the final prioritization reflected more the species-based ranking that emphasizes globally threatened species.

Table 4: Criteria for Prioritization of Key Biodiversity Areas

Biological Importance	Conservation Potential
• Number of species on the IUCN Red List that are present in the area. • Number of species on the national red lists that are present in the area. • Number of endemic species present in the area or whose ranges are thought to extend through the area. • Existence of globally significant congregations of species (i.e. migratory aquatic birds, bat colonies, flamingo nesting grounds, etc.)	• Percentage of the area that is currently in a good state of conservation (i.e. natural vegetation with very light human impact). • Relative status of ecosystem conservation in the key biodiversity areas (i.e. what proportion of the area has intact functioning ecosystems). • Importance of connectivity provided as a conservation corridor between other key biodiversity areas. • Ecological diversity in terms of types of landscape and vegetation included in the area, considering the intermixture of habitat, altitudinal gradients, etc.

The prioritization exercises showed similar rankings for both parameters, with areas that demonstrated high importance for species protection also indicating excellent potential for maintaining habitat (Appendix 3). Based on the analysis, the following eight key biodiversity areas, which harbor 176 Vulnerable, Endangered and Critically Endangered species, were identified as the highest priorities for conservation in Northern Mesoamerica:

1) Selva Zoque, Mexico
2) Reserva de Biosfera Sierra de las Minas, Motagua, Bocas del Polochic, Guatemala
3) Sierra Madre de Chiapas, Mexico
4) Los Cuchumatanes, Guatemala
5) Selva Lacandona y Sierra del Lacandon, Mexico and Guatemala
6) Parque Nacional Laguna del Tigre, Guatemala
7) El Gran Peten, Mexico and Guatemala
8) Chiquibul/Montañas Mayas, Guatemala and Belize

Corridor Outcomes

Identification of corridor outcomes, which represent the highest level of analysis for the profile, aimed to define conservation priorities at the landscape level. The need for identifying such corridors rests on the understanding that existing protected areas and sites are often too small and isolated to maintain ecosystem functions and evolutionary processes. The focus must therefore be on linking major sites and protected areas in a network, or so-called biodiversity conservation corridors, across wide geographic areas in order to maintain these large-scale processes. In addition, corridors are necessary for wide-ranging species and for ecological processes on which key biodiversity areas depend.

Corridors within the Northern Mesoamerica region were identified and delineated based on the following criteria: coverage of key biodiversity areas, existence of large-scale intact biota assemblages, needs of wide-ranging landscape species, connectivity of habitats, and opportunities for maintaining ecological and evolutionary processes. Based on the results, two corridors were identified for CEPF investment: 1) the Selva Maya and 2) the Selva Zoque and Chiapas/Guatemala Highlands corridors. These corridors encompass the majority of site and species outcomes for Northern Mesoamerica. They are large enough to maintain ecosystem processes essential for sustaining biological diversity, while also being anchored by key biodiversity areas that have been determined to be of the highest priority for conserving globally threatened species. These corridor outcomes aim to consolidate the areas that function as corridors for biodiversity, including the conservation of areas that provide connectivity to maintain ecological processes. The two corridors and eight key biodiversity areas are described below in brief, including significant biological features and threatened species and habitats.

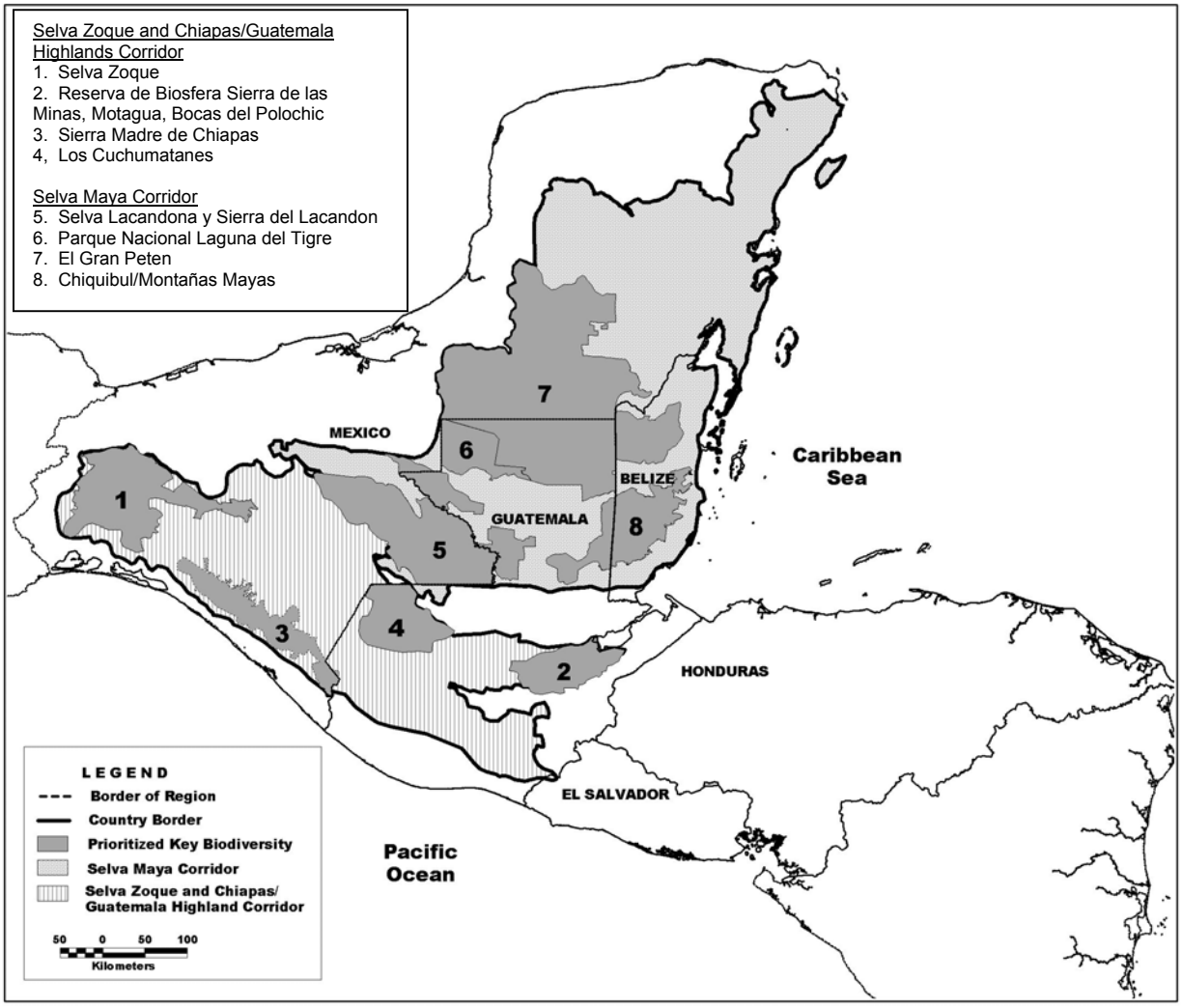
Selva Maya Corridor

The Selva Maya contains the second most extensive mass of continuous tropical rainforest in the Americas after the Amazon Forest. It extends throughout the southeast of Mexico (the states of Chiapas, Tabasco, Campeche, Yucatan and Quintana Roo), over the province of Petén in Guatemala and throughout Belize. The Selva Maya is covered with tropical montane rain forest (Selva Lacandona in Chiapas, and Chiquibul and the Mayan Mountains in southern Belize) as well as tropical lowland rain forest (Marqués de Comillas in Chiapas, Yucatan Peninsula, Peten in Guatemala, northern Belize). The Selva Maya includes the middle and lower parts of the Usumacinta river basin, which, together with the Grijalva river basin, is one of the most important river systems in Mesoamerica. The endemic species of the Selva Maya comprise 11 mammals, including the Yucatan brown brocket deer, 20 birds including the ocellated turkey, 39 reptiles and 11 amphibians. At least 19 species of endemic fishes have also been reported.

Lacandona, Laguna del Tigre and the Gran Peten key biodiversity areas

Lacandona, Laguna del Tigre and the Gran Peten are linked as three of the most important key biodiversity areas in the Selva Maya corridor. Lacandona supports the mammals *Tylomys bullaris* (CR) and *T. Tumbalensis* (CR), along with four species of Endangered insects and four species of Endangered plants. The Gran Peten supports two other species of Endangered plants and two species of Endangered reptiles. These key biodiversity areas are also important because of the presence of the northernmost populations of many Neotropical species, such as Baird's tapir (EN), jaguar, ocelot, white-lipped peccary, howler monkey, spider monkey, scarlet macaw, harpy eagle and the Moreleti crocodile.

Map 1. CEPF Priority Corridors and Key Biodiversity Areas



Chiquibul/Montañas Mayas key biodiversity area

The Chiquibul/Montañas Mayas of Belize and east-central Petén is the fourth key biodiversity area in the Selva Maya corridor. The Montañas Mayas contain several peaks that exceed 1,000 meters, the windward side of which is covered with wet forest and contains a herpetological assemblage with many similarities to that of the adjacent lowlands and the southern portion of the Petén. Broadleaf forest, including riparian forest, occurs in the lowlands. The leeward side of these mountains tends to be much drier and is covered with what has been referred to as pine parkland or palm, and pine savanna. The Upper Raspaculo River shows particularly high dynamism due to regular extreme disturbance from flooding. This damage, along with that from three hurricanes that have passed through the area since 1961, has created a large area of secondary forest in the upper basin. The Montañas Mayas support two globally threatened amphibian species, and riparian areas appear to support a high density of Baird's tapir (EN). While few endemics occur, at least one frog, *Rana juliani,* is limited to these mountains.

Selva Zoque and Chiapas/Guatemala Highlands Corridor

The Selva Zoque and Chiapas/Guatemala Highlands corridor includes the key biodiversity areas of the Selva Zoque in Oaxaca; Chiapas and Veracruz; the Sierra Madre of Chiapas; and Cuchumatanes and the Sierra de las Minas in Guatemala. The corridor is best known for its ecosystem diversity and its high endemism. For example, six endemics are concentrated in a small patch of cloud forest in El Pozo, Chiapas: the salamander *Ixalotriton niger* (CR), the frog *Eleutherodactylus pozo* (CR), the lizards *Anolis parvicirculatus* and *Sceloporus internasalis* and the rats *Ototylomys* sp. nov. and *Tylomys bullaris* (CR).

Selva Zoque key biodiversity area

In addition to its expansive wet tropical forest, the Selva Zoque contains large areas of montane mesophilous forest and pine-oak forests that mingle with tropical montane forests and other communities, thus giving rise to landscapes with a very elevated diversity of flora and fauna. The importance of the Selva Zoque region is outstanding at the bioregional level. Zoque and its immediate surroundings represent the northern or western limit of Central American species such as highland guan, quetzal and the horned guan (EN). Several new species of plants and animals have also been reported as endemic to the area. Zoque also maintains extensive populations of large mammals such as jaguar, river otter, Baird's tapir (EN) and spider monkey, and large birds such as harpy eagle, scarlet macaw and great curassow. The Selva Zoque is considered to be one of the largest areas containing tapir habitat and is currently the northwestern limit of its distribution. Although the Selva Zoque is Mexico's second largest forest, it has no officially protected areas.

Sierra Madre of Southern Chiapas key biodiversity area

The Sierra Madre of southern Chiapas includes a chain of mountains of extraordinary biodiversity. This species diversity is a result of the area's proximity to the Pacific coastline and its altitudinal diversity. The region connects both with Selva Zoque and the Guatemala mountain chain in the south, and covers the greatest expanse of mesophilous montane forest or cloud forest in all of Northern Mesoamerica. This region constitutes the principal habitat in the world for species such as the quetzal and the endemic horned guan (EN). The El Triunfo Biosphere Reserve is perhaps the most important representative of this entire region, including important ecosystems, species, endemic taxa and ecological services. El Triunfo supports one of Mexico's largest fragments of mesophilous montane forest, a vegetation type that constitutes less than one percent of Mexico's territory.

Cuchumatanes key biodiversity area

The Cuchumatanes highlands encompass most of northwestern Guatemala. The Sierra de los Cuchumatanes is the most extensive highland region in Mesoamerica with 1,500 km^2 lying above 3,000 m elevation. Most of Cuchumatanes is covered with pine-oak lower montane and montane humid forest. However, on windswept higher slopes and peaks lower montane wet forest is present and in the extreme northern portion a subtropical pluvial forest covers the Sierra de los Cuchumatanes. The Sierra receives over 6,000 mm of rainfall annually. Cuchumatanes shares much of its fauna with the Chimaltenangan, Cuilcan and Minan areas and supports six endemic amphibians: the salamanders *Bolitoglossa jacksoni* (CR)*, Dendrotriton cuchumatanus* (CR) and *Bradytriton silus* (CR), the frogs *Hyla dendrophantasma* (CR)*, Plectrohyla tecunumani* (CR) and *Hyla perkinsi* (CR).

Sierra de las Minas-Motagua-Bocas del Polochic key biodiversity area
The different altitudes and orientation of the Sierra de las Minas have a profound influence on the climate and ecological conditions in the 242,642-hectare biosphere reserve. Rainfall varies significantly within short distances. Some areas of the upper reaches of the Polochic receive more than 4,000 mm of rainfall annually, while in the Motagua valley annual precipitation is less than 500 mm. The geographical isolation of Sierra de las Minas and its altitudinal variability have given rise to a great diversity of habitats for flora and fauna, which have functioned as islands of genetic evolution. Cloud forest covers 1,300 km^2 of the reserve, which probably represents the largest expanse of this ecosystem in Mesoamerica. The biosphere reserve alone is home to 885 species of mammals, birds and reptiles, which represent 70 percent of all species of Belize and Guatemala. Among the plant species, *Persea schiedeana* (VU), *Quercus purulhana* (VU), *Cornus disciflora* (VU) and *Parathesis vulgata* (EN) risk extinction and 56 species are endemic. Sierra de las Minas supports 21 species of regionally endemic birds, such as horned guan (EN), along with quetzal and probably harpy eagle.

SYNOPSIS OF CURRENT THREATS

Despite Northern Mesoamerica's importance to global biodiversity and the progress achieved over the last two decades in advancing the conservation agenda, the region is under extremely heavy development pressure. Habitat is being lost at an alarming rate. Approximate 400,000 hectares of forest is destroyed every year. If current deforestation rates continue, Mesoamerica's forests will disappear in 12 years, by the year 2015. The rapid loss of habitat makes Mesoamerica one of the most threatened hotspots in the world.

To understand the causes behind the destruction, the CI team consulted with stakeholders, conducted a literature review and made site visits to determine the proximate threats to biodiversity and their root causes. Below is a synopsis of the findings. A detailed threats assessment for all eight key biodiversity areas to receive CEPF support is presented in Appendix 4.

Stakeholders concurred that threats to biodiversity can be attributed to three fundamental root causes. The first of these causes is an economic development model that has thus far failed to lift from poverty more than 40 percent of Guatemalans, more than 30 percent of Belizeans and between 10 and 20 percent of Mexicans. The poor lack access to education, health, credit and property, and have few economic options outside of working on the most marginal lands for agriculture, many of which are in the areas of highest biodiversity. The combination of poverty and lack of health and education have generated consequent problems: a demographic explosion, high mortality and malnutrition rates, and lack of capacity to use strategies for rational resource management. For the future, with high population growth, these pressures will only continue unless more sustainable land management practices are adopted.

The second root cause is a development paradigm and political vision that has been based on short-term resource extraction and that has failed to appropriately value biodiversity and the environment in terms of their contributions to the sustainable development and welfare of current and future generations. Indeed, many contradictory policies have been implemented. On the one hand, extensive areas have been set aside for protection and conservation, while on the other hand, development policies have promoted the extraction of natural resources such as extensive

agriculture, logging and oil development. Agriculture has moved into protected areas. Such policy failures remain widespread throughout the region, and therefore require that civil society engage at the national and regional levels if it is to effect a change on behalf of conserving habitat and species.

The third root cause can be attributed to weak institutional structures and legal frameworks required to develop and enforce environmental policies and laws. A lack of coherence exists within the legal structure. Use of soil, water and biodiversity, for example, is covered by a series of legal instruments of different character and legal hierarchy. This legal confusion not only leaves regulatory gaps, but it also makes the application of a particular policy or law difficult. As mentioned previously, significant advances have been made in passing environmental laws in Mesoamerica, but the accompanying technological and financial instruments, such as the use of economic incentives, have yet to be developed to encourage environmentally sustainable economic development.

Laws protecting biodiversity are hampered by the lack of precision and legal implementation frameworks as well as by a shortage of human and financial resources assigned to legal institutions responsible for enforcement. As a result, even unambiguous environmental laws are difficult to enforce. Furthermore, while there has been a push toward decentralization in Northern Mesoamerica, in which more responsibility for resource management is placed on local governments, little has been done to date to ensure that local governments have the capacity to assume additional resource management responsibilities. Funding from central to local government has typically supported public infrastructure works and municipal debt servicing. As a result, local governments lack the technical expertise and resources needed to promote an integrated approach to rural development and to enforce environmental laws. Little support exists for land tenure laws or forest fire prevention and control at the local level.

Fortunately, these legal hurdles are well recognized and are beginning to be addressed through a joint CCAD – U.S. Environmental Protection Agency initiative called PROLEGIS, which is funded through USAID's PROARCA project. The initiative has four goals that, once instituted, should contribute to addressing this root cause: harmonize environmental standards and regulations; increase capacity to enforce and comply with environmental legislation; apply key international agreements; and develop a harmonized regional system for environmental audits, and compliance registry and certification.

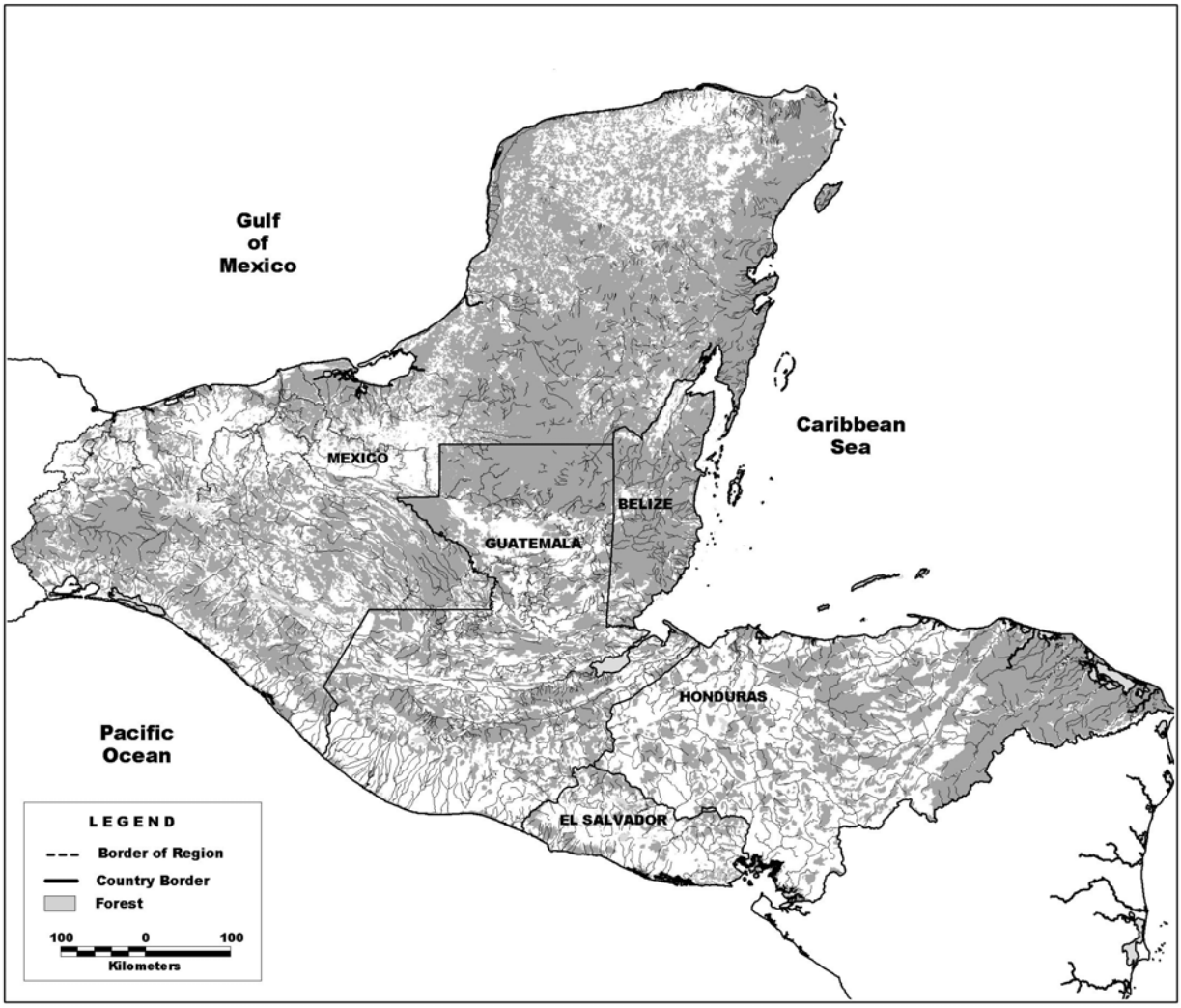
While there are diverse manifestations of these root causes, their impact is similar: a direct loss of biodiversity. Stakeholders agreed that the most important proximate threats to biodiversity, which are described in more detail below, are deforestation due to agricultural encroachment, forest fires, illegal logging and fuel wood harvesting; infrastructure development; and poaching and illegal wildlife trade. These threats lead to habitat degradation, decline of species populations and disruption of ecological processes—all contributing to overall loss of biodiversity.

Deforestation

In spite of the rich biodiversity of the region, a territory once covered entirely by forest today maintains less than half of its original cover. It is estimated that on average 45 hectares of forest are lost every hour, which adds up to approximately 400,000 hectares every year. The expansion

of the road network, logging, agricultural encroachment and livestock production and the use of wood for cooking by more than 60 percent of households have been the principal causes of this deforestation. Deforestation has wider impacts than the forest itself. Many hydrographic basins are suffering from the removal of their vegetative cover, leading to erosion, disturbed hydrological cycles and heavy sedimentation in rivers and coasts, thus exacerbating the impact of extreme climatic events. Several factors contribute to the rapid deforestation.

Map 2. Forest Cover in Northern Mesoamerica, 2000



Source: 2000 National Forest Inventory of Mexico, SEMARNA; 2001 Central American Ecosystem Map, CCAD and World Bank.

Forest Fires

Farmers in Northern Mesoamerica have long used fire to clear their land for development and to regenerate grassland pasture. More than 500,000 hectares of forest were burned between 1990 and 1995. In 1998, with the aggravating circumstance of the drought brought about by El Niño, poorly controlled fire destroyed more than 2.5 million hectares in Central America and a further nearly 850,000 hectares in Mexico (Table 5).

Table 5. Incidence of Forest Fires

Country	Number of Forest Fires per Year						Total Number, 1996-2001	Area affected in 1998 (ha)
	1996	1997	1998	1999	2000	2001		
Belize	138	651	611	683	404	715	3.202	<50,000
Guatemala	695	5,027	7,943	5,520	6,049	3,143	28.377	650,000
Mexico	ND	ND	ND	ND	ND	ND	ND	848,911

Source: Cochrane 2002; CCAD 2001. ND – no data available

The Historical Atlas of Forest Fires in Central America, produced by the Program for Sustainable Development in Agricultural Frontier Areas in Central America, states that a number of protected areas have "a high recurrence of forest fires, which constitutes a threat to conservation of biodiversity and of forest cover, a threat which also extends to the integrity of the MBC, of which these areas form the backbone." These fires affect several critical protected areas and represent a serious threat to the integrity and connectivity of the Mesoamerican Corridor itself, particularly in Mexico and Guatemala. Protected areas affected by recurring forest fires in Guatemala include the Laguna del Tigre National Park, the Sierra de Lacandón Park, Machaquila and the Montañas Mayas, with a total area of 5,100km^2. Stakeholders report that forest fires have not received the attention they deserve and that greater consideration needs to be paid to this threat. They acknowledge that advances have been made in recent years in the governmental and international response to fires, however, fire-prevention and fire-fighting capacity at the local level remains weak.

Agricultural Encroachment

In the last 20 years, an additional 200,000 hectares of land per year has come under agriculture throughout Mesoamerica (Table 6). The advance of the agricultural frontier has rarely occurred in a sustainable manner. Many soils have rapidly lost productivity, forcing farmers to move to more fertile lands, those that are forested and even protected.

Table 6. Area Under Agriculture, 1980 to 1999

Country/State	1980 (ha)		1990 (ha)		1999 (ha)		Area change, 1980-1999 (ha)
	Area	Percent	Area	Percent	Area	Percent	
Belize	96,000	4.2	117,000	5.1	139,000	6.0	2,300,000
Guatemala	3,050,000	28.0	4,285,000	39.4	4,507,000	41.4	76,700,000
Mexico	ND		ND		6,644,000	27.9	430,000,000
Campeche	ND		ND		914,000	16.0	
Chiapas	ND		ND		2,423,000	32.9	
Quintana Roo	ND		ND		182,000	4.6	
Tabasco	ND		ND		1,697,000	69.0	
Yucatán	ND		ND		1,428,000	32.8	
Total					28,769,000	37.4	

Source: FLACSO and UCR 2002; OdD-UCR and PNUMA 2001, 2002; Mendieta and Vinocour 2000:67. ND – no data available

Poverty has generated strong pressure for development in the form of forest conversion into areas of more intensive land use, such as agriculture and livestock farming. Public rural development programs have promoted land-use change. In Guatemala, for example, the government encouraged forest conversion for agriculture up until 1995. Agriculture tends to be

highly unproductive in the region. Even today in Guatemala, agriculture and forestry account for 60 percent of land use. Agriculture employs 50 percent of the population. However, the sector is highly unproductive, and only 10 percent of national investment goes for agriculture, reflecting a high degree of neglect and unsustainable extractive practices. The Government of Mexico invests annually around $60 million in traditional development programs in rural municipalities such as those surrounding the key biodiversity areas. Many of these investments are targeted toward development projects that encourage land-use change, and few taken into account environmental sustainability.

Insecure land tenure and title creates a major disincentive for sustainable agriculture and resource use secure title would anchor farmers in one area rather than requiring them to continuously extend their range into new, forested areas. Many farmers, especially those in politically sensitive areas such as Laguna del Tigre and the Peten, do not have legal title to their land, and therefore have little incentive to invest in resource management or in expelling outsiders who enter to exploit the forest. In the last eight years, more than 30 invasions have occurred in the Lacandona Forest Reserve. Invasions have also begun in other protected areas, including the Sierra de Lacandón and Laguna del Tigre national parks. Local governments often lack the capacity to provide title to legitimate landholders, which is a contributing factor to unsustainable land practices.

Unsustainable Forest Management

Unsustainable forest management practices and policies in Northern Mesoamerica have been a major contributor to the large-scale deforestation. Several factors shed light on the problem. Financially, returns from sustainable forest management have traditionally been much longer in duration than from agriculture. Furthermore, landowners and communities have generally lacked knowledge about alternative, biodiversity-friendly uses of intact forest. While attention has been paid to the potential for non-consumptive forest-based activities, most rural communities lack information about forest management practices that promote sustainability. Alternatives to logging, such as shade grown coffee, sustainable ecotourism, and sustainable timber harvesting and forest management, have been attempted with varying degrees of success throughout the region. However, stakeholders report that information and the lessons learned about the strengths and weaknesses of such interventions have not been systematically collected, analyzed and disseminated. As a result, capacity to implement sustainable development options for forests remains limited.

Another factor underlying deforestation has been that basic ecosystem services derived from maintaining forest cover, such as soil conservation, watershed management, biodiversity conservation, and carbon sequestration, have been undervalued. Failure to monetize these services has meant that landowners and communities have not received direct income from intact forest. Few, if any, formal and well-publicized mechanisms have been developed by which communities and landowners can negotiate payments for environmental services from a position of knowledge and strength. These factors have hampered discussions and negotiations that could lead to better conservation, with international NGOs for conservation easements or concessions, with local industry, municipal governments or other communities for watershed services, or with the private sector for a sustainable ecotourism concession. Potential market-oriented mechanisms for the creation of private and municipal reserves need to be more widely disseminated, and greater incentives need be developed to encourage such actions.

Infrastructure Development

In the coming years, significant funding is expected to flow into Northern Mesoamerica for major development initiatives. These investments hold great promise in terms of introducing new opportunities for economic development for the people of Northern Mesoamerica and to address the poverty that is a root cause of environmental degradation. At the same time, however, large infrastructure projects could well fuel wide scale habitat destruction if not designed and implemented with adequate protection. Several large projects currently on the drawing board are of particular concern to stakeholders.

Plan Puebla-Panama (PPP). This ambitious $20 billion, 25-year development program launched in 2000 by the Government of Mexico runs from Puebla in southern Mexico to Panama with the goal of promoting economic development and integration of the region. The PPP could present important opportunities for conservation by investing large sums of money for economic development; however, it also could introduce serious new threats. Planned infrastructure is massive: 5,565 miles of new or improved highways, 1,130 miles of electrical lines to distribute energy from gas and dams and six development zones for industrial facilities. Clearly, the environmental and social impacts could be commensurately harmful without adequate measures. Indeed, widespread opposition exists against the PPP. Hundreds of groups have denounced the plan. In addition to concerns about the environmental impacts, these groups denounced the PPP for its failure to engage in genuine consultation with indigenous peoples and campesinos; the potential negative impacts on the land tenure and livelihoods of indigenous and rural people; and unequal distribution of the economic benefits toward large businesses and governments rather than to local communities.

To address concerns over the negative impacts on the environment, several NGOs have met with officials of the PPP to explore potential collaboration for addressing the potential environmental impacts and promote innovative models for conservation through the sustainable use of natural resources. Furthermore, governments of the eight countries supporting the PPP have adopted the Mesoamerican Sustainable Development Initiative. This initiative supports three primary strategies to ensure the environmental sustainability of PPP projects: the Mesoamerican Biological Corridor initiative, modernization of the regional environmental management project (PROSIGA) and the Mesoamerican Program for Sustainable Natural Resource Development. These activities represent important opportunities by which NGOs, through CEPF support, can influence the development of this large-scale development project in a way that truly achieves the ecologically sustainable and socially equitable development sought by the governments and people of the region.

Mundo Maya Sustainable Tourism Program. The Mundo Maya Program is a $120-million initiative of the Inter-American Development Bank designed to promote social and economic development in the countries of the Selva Maya through large-scale tourism. The program calls for building a circuit linking cultural, ecological and adventure tourism based on the preservation of cultural and environmental sites of interest. While NGOs recognize that tourism is the fastest growing economic sector in Mesoamerica, generating billions of dollars in foreign exchange and representing an important source of potential revenue for conservation and rural poverty alleviation, several concerns about Mundo Maya and tourism growth in general persist. Mundo Maya proposes improvements to a number of roads, including one from the archaeological sites

of Tikal to Uaxactun in the Peten, which would facilitate access into the Maya Biosphere Reserve. Tourism projects promote large infrastructure works and attracted visitors that surpass the carrying capacity of fragile areas. Fortunately, through projects as the Mesoamerican Biological Corridor, efforts are underway to work with communities to conduct land-use planning in which the carrying capacity of protected areas is considered.

Central America Free Trade Agreement (CAFTA). The proposed free trade agreement for Central America will commit Mesoamerica to greater openness, deepen the roots of democracy and the rule of law and reinforce market reforms. These reforms, coupled with increased trade and investment, will promote growth and achieve stronger environmental protection and improved working conditions. The World Bank's CAFTA support strategy includes loans and analytical support as well as grant funds. The North American Free Trade Agreement continues to encourage extensive investment in infrastructure and communications. However, with free trade, civil society is concerned that the environmental consequences could be significant, as new land is converted for cash crops and industrialization results in more pollution.

Dam and reservoir construction. Several dams and reservoirs are slated throughout the region. Development agencies continue to propose hydroelectric dams that would flood parts of the lower Usumacinta River basin in Selva Lacondona, even though it is likely that a more cost-effective way of increasing capacity would be to improve efficiency in existing facilities. Furthermore, the damming of Belize's pristine Macal River has been temporarily halted by legal action, but the planned project has not been cancelled.

Petroleum development. There has historically been a lack of coherence between petroleum infrastructure investments and the application of laws. Conflicts between economic development and the defense of the environment have continuously occurred. This question is particularly critical in the Maya Biosphere Reserve, Laguna del Tigre and in Chiapas and Tabasco, where petroleum activity is intense and investment in exploration and exploitation have grown over recent years.

Illegal Traffic in Timber and Fauna

Despite appropriate laws and regulations, illegal timber and wildlife harvesting inside protected areas is widespread throughout the region. Weak law enforcement allows illegal and unsustainable hunting and trafficking of fauna, despite the fact that Belize, Guatemala and Mexico each have laws that prohibit the hunting or collection of endangered or threatened species, that outlaw hunting inside a protected area and its buffer zone, and that regulate in other areas through strict permits capture rates and closed seasons and areas. Subsistence and trophy hunting not only kill individual animals, but also can affect biodiversity in the rest of the forest through the loss of potentially important ecosystem processes.

Civil Society Response

To date, civil society's response to these threats can be characterized as having a mixed record. On the one hand, NGOs have made significant strides within individual sites and in helping to establish environmental institutions and legislation. NGOs have been at the forefront of advocating for the establishment of new protected areas and environmental legislation. Management plans for protected areas have been prepared. Environmental education programs have heightened awareness about the importance of conservation. Local communities have been

engaged in the full gamut of environmentally sustainable development activities conceived and promoted by NGO. NGOs remain an important source of information and expertise on various conservation issues. More recently, several NGOs have become involved in conservation decisionmaking in fora such as the CCAD, although open access to such venues is not the norm for most NGOs. In short, NGOs have served as the principal advocates for and practitioners of biodiversity conservation in Northern Mesoamerica over the past two decades.

Despite these important contributions, a wide gap still exists between the threats facing the region and the ability of civil society to respond to them effectively. Part of the problem is that the environmental community in Northern Mesoamerica only began to take shape about 20 years ago and is still nascent in comparison with other civil society groups in such areas as health or agriculture. In most cases, individual NGOs were established to conserve a particular site or in reaction to a particular issue, such as a proposed dam. As a result, members of the NGO community have tended to focus on their individual sites and issues, rather than on the broader threats at hand. This single-site and -issue orientation has resulted in a fractionalized and dispersed environmental community, where collaboration is weak and where the broader and integrated vision required to tackle such complicated and pernicious issues as agricultural encroachment or colonization at the policy level has yet to be fully realized.

Another part of the problem that has hampered collaboration among civil society groups with similar agendas is the lack of the funding and opportunities to discuss and cooperate on issues of common interest. Little funding has historically existed to support the development of collaborative alliances comprised of individual groups working to achieve common goals. One result of this weak coordination has been that the NGO community has yet to scale up beyond what are many innovative and promising initiatives to the degree required to address large-scale threats. Rather, NGO initiatives have often developed in isolation of one another with little cross-fertilization of ideas, lessons learned and synergy achieved in working together. Therefore, NGOs working in ecotourism, conservation coffee or protected areas management, for example, have had little opportunity to learn from each other or to work cooperatively on activities that are mutually beneficial.

Another impediment within the NGO community has been the lack of technical knowledge required to engage in and influence decisionmaking on such topics as agricultural policy or infrastructure development. Civil society groups, especially those representing indigenous peoples and others in the poorest sectors of the region, lack access to information, and have difficulty tracking and analyzing complex technical information. They lack the technical background in areas such as economic analysis or environmental impact assessment in order to interpret the data using the latest analytical tools.

These limitations have resulted in a NGO community that is reticent and even ill-equipped to engage constructively in decisionmaking on the critical broader issues impacting biodiversity. The need to strengthen dialogue and collaboration has been underscored repeatedly in the region. For example, during the Conference of the Mesoamerican Society for Biology and Conservation held in San Jose in Costa Rica in September 2002, representatives of leading NGOs and regional projects met to present conservation priorities. The results of this meeting reflected the importance of establishing mechanisms for communication and coordination at regional, national

and local levels. Among the points agreed on was the need to strengthen regional collaboration between NGOs and CCAD.

In the future, as billions of dollars of government and donor funds are invested in Northern Mesoamerica for development and conservation, the impact of these weaknesses within the NGO community will potentially have greater consequences. As the principal advocates and practitioners of conservation, civil society will need to develop the capacity to work collaboratively to serve as influential, technically solid promoters of conservation which can engage in policy discussions to address current and future threats. For CEPF, therefore, a high priority must be to help the NGO community to evolve and mature to a new, broader level of action. The challenge will be to build networks of NGOs that have the technical capacity and organizational wherewithal to help develop and implement strategies and policies that tackle the most critical threats to biodiversity.

SYNOPSIS OF CURRENT INVESTMENTS

Given Northern Mesoamerica's importance for global conservation, the international donor community has progressively channeled more resources toward conservation and environmentally sustainable development to the region. During the early days of conservation in the 1980s, funding for biodiversity and sustainable development was scant. Universities and research institutions promoted most conservation initiatives. Indeed, many reserves and parks owe their establishment to prominent scientists or academic institutions with access to decisionmakers. By the early 1990s, several high profile events, such as the Earth Summit in Rio de Janeiro, galvanized interest in conservation at higher political levels. National and regional agencies were established to support the environment, particularly biodiversity, and appropriate legal frameworks were developed.

By the mid-to-late 1990s, international NGOs developed strong conservation programs in conjunction with newly established national and regional counterparts with funding from bilateral and multilateral donors and private foundations. Community-based organizations built capacity to take advantage of the new environmental movement. Significant conservation investment and progress occurred: new protected areas were established, biosphere reserves and national parks were staffed, management plans were developed and implemented through participatory planning with the local communities and best practices in ecotourism, agroforestry and non-timber products were developed at the pilot project scale. Since the 1990s, governments have invested increasingly in regional biodiversity conservation, culminating in the development of the Mesoamerican Biological Corridor, financed by the World Bank, GEF and other partners such as the GTZ.

Funding Trends

On a regional scale, several funding trends emerge. Between 1993 and 2003, the Northern Mesoamerica region received $82 million for conservation and environmentally sustainable development from a variety of donors. Over the last six years, from 1997 to 2003, local and international NGOs received $29 million for activities that include the introduction of best practices, technical assistance, protected areas management and conflict management. During this time, investments implemented by community-based organizations were low.

Funding for 2004 to 2008 is expected to grow significantly, reaching nearly $125 million. In total, for the period spanning 1993 to 2008, about $182 million will have been invested for conservation and environment projects for the eight key biodiversity areas selected by CEPF for support (Table 7). This figure excludes general development investments such as Plan Puebla-Panama and the Mundo Maya Sustainable Tourism Program, although they may support sustainable development components as well.

Table 7. Major Conservation and Sustainable Development Donors in Northern Mesoamerica, 1993 to 2008

Donor	Amount (millions)
Government of Mexico	58.5
GEF	35.3
World Bank	32.6
USAID	17.8
Government of Guatemala	12.8
DANIDA-GTZ	8.6
PULSAR	5.4
Mexican Protected Areas Fund	3.8
GEF-UNDP Small Grants Program	3.1
Ford Foundation	1.2
GTZ	1.2
Inter-American Development Bank	0.5
Packard Foundation	0.3
Sharp Foundation	0.2
Total	**181.9**

Overall, several funding trends emerge in the eight key biodiversity areas of interest to CEPF (Table 8). Most notably, investments in Cuchumatanes will experience significant growth, from $0.6 million over the last 10 years t o $50.6 million from 2004 to 2008. Likewise, investments in the Selva Zoque will increase from $1.5 million to $11.6 million. These large sums present an unprecedented opportunity for civil society to engage in conserving these critical areas. Funding for the Sierra Madre de Chiapas and the Gran Peten is expected to increase as well. Support for the Lacandona key biodiversity area will decrease. Meanwhile, though biologically important, no investment data was available for Laguna del Tigre, Chiquibul and Sierra de las Minas for the next four years.

Table 8. Investments in Eight Key Biodiversity Areas, 1993 – 2008

Key Biodiversity Area	Investments 1993 - 2003 (Millions)	Investments 2004 to 2008 (Millions)
Chiquibul	**Total Amount: $0.07** • Protected Area Management ($0.03) • Environmental Education ($0.04)	**Total Amount: No investment data available**
Cuchumatanes	**Total Amount: $0.6** • Protected Area Management	**Total Amount: $50.6** • Capacity building ($11.4) • Resource Management ($9.7) • Sustainable Development ($9.7) • Species Conservation ($9.7)
Gran Peten	**Total Amount: $11.7** • Project Management ($2.5) • Protected Area Management ($2.25) • Economic Alternatives ($1.7) • Policy ($1.4)	**Total Amount: $29.2** • Planning/Mainstreaming ($26.0) • Sustainable Development ($1.7) • Planning/Monitoring ($0.8)
Lacandona	**Total Amount: $13.7** • Project Management ($3.2) • Protected Area Management ($3.0) • Planning/Mainstreaming ($2.3) • Economic Alternatives ($1.0) • Monitoring ($0.7)	**Total Amount: $7.6** • Planning/ Mainstreaming ($4.6) • Economic Alternatives ($0.6) • Land-Use Planning ($0.4)
Laguna del Tigre	**Total Amount: $2.9** • Protected Area Management ($1.3) • Natural Resource Management ($0.5) • Monitoring ($0.2)	**Total Amount: $0.08** • Forest Fires ($0.05) • Planning ($0.03)
Selva Zoque	**Total Amount: $ 1.5** • Sustainable development ($0.4) • Forest fires ($0.2) • Capacity building ($0.2) • Restoration ($0.2)	**Total Amount: $ 11.6** • Planning ($10.2) • Sustainable development ($0.7) • Forest fires ($0.3) • Economic Alternatives ($0.3)
Sierra de las Minas	**Total Amount: $ 0.7** • Economic Alternatives ($0.4) • Forest fires ($0.4)	**Total Amount: No investment data available**
Sierra Madre	**Total Amount: $3.9** • Protected Area Management ($1.84) • Sustainable development ($0.5) • Forest fires ($0.5) • Capacity building ($0.4)	**Total Amount: $22.7** • Planning/ Mainstreaming ($19.8) • Sustainable Development ($1.3) • Economic Alternatives ($0.4)

Note: The CEPF profile team collected information through interviews and searches of donors' Internet sites, including those of the World Bank, GEF, UNDP Small Grants Program, USAID, Fondo Mexicano, FOGUAMA, FCG, ASDI, DANIDA, CIDA, BID, BCIE, CONABIO, MacArthur Foundation and the Ford Foundation. Categorization of projects was based primarily on the classification system used by the UNDP's Small Grants Program, although further categorization was conducted using donors' own descriptions and terminology (see Appendix 6 for full list of categories).

One important characteristic of these new investments is that they will be channeled through government to strengthen the management of specific sites, unlike in earlier years when funding went primarily to NGOs. As a result of this new funding pattern, most investments to NGOs and CBOs will in all likelihood be channeled through government rather than received directly from donors. In addition, the current funding scenario indicates that certain key biodiversity sites will be well funded, while others will remain woefully underfunded. Indeed, no or little funding has

been identified for Laguna del Tigre, Chiquibul and Sierra de las Minas, although they rank very high in maintaining populations of globally endangered species.

Furthermore, funding will continue to be scant for the kinds of policy reforms that are critically needed in order to address key threats to the region. The current investment scenario does not envision support at a policy level to confront some of the most destructive threats to biodiversity: agricultural encroachment, forest fires, infrastructure development and destructive tourism development. CEPF can therefore help to fill this gap by supporting NGO efforts to advocate for the kinds of policy reform that promotes sustainable development in the two corridors.

Two projects account for a large share of new investment in the region. The World Bank and GEF will invest $40.8 million in the Western Altiplano Natural Resource Management Project (MIRNA), which will cover the Los Cuchumatanes key biodiversity area in Guatemala. The Government of Guatemala will provide $8.6 million for the project. MIRNA supports three main components: (i) Improving the welfare of the rural poor through the sustainable use and conservation of natural resources, targeting 54 municipalities and 760 small-scale, grassroots production and conservation projects; (ii) biodiversity conservation to support the protection of sites of global importance, environmental education, and monitoring and evaluation; and (iii) an environmental services market as part of a long-term strategy to promote the sustainable use of resources in the region.

Similarly, the World Bank and GEF have allocated $19 million and the Government of Mexico has committed $67 million to support the Mesoamerica Biological Corridor in five corridors located throughout Southern Mexico. The project aims to promote the conservation and sustainable use of biological resources biological corridors that link existing protected areas with productive landscapes. More specifically, the project supports the design and monitoring of the corridors, corridor integration into development programs, and the sustainable use of biological resources. Two of the MBC's five sites—Selva Zoque and Sierra Madre de Chiapas—coincide with CEPF's key biodiversity areas.

Both these projects place a high premium on ensuring active participation by civil society and local NGOs to guarantee their success. Indeed, MBC designers state in the project appraisal document that robust stakeholder and civil society engagement must underpin the initiative in order to ensure sustainability: "Stakeholders' interest and participation, demonstrated through the project's preparation phase, reflects the demand that exists for locally adapted programs for sustainable use of natural resources. This, together with institutional and political commitment, technical soundness and financial viability, is likely to ensure the long-term sustainability of the project. The specific combination of community participation, political will, civil society engagement, and financial arrangements required to promote sustainability of biodiversity conservation after the project is likely to vary across the various corridors."

The CEPF profile team envisions a strong synergy and complementarity with these two projects. Civil society has worked successfully for many years in certain sites and communities, often under difficult conditions, where these projects are located. This breath of experience will be important to these two projects. Furthermore, CEPF provides a platform to support civil society and local governments through opportunities to enhance coordination, share lessons learned and build capacity in ways that allow for their meaningfully participation in these two projects. At

the same time, the MBC and the MIRNA provide local NGOs and governments with unprecedented opportunities to engage in conservation and sustainable development initiatives in three of the eight key biodiversity areas.

Bilateral and Multilateral Donors

To ensure that the CEPF strategy fully considers the landscape of investments from bilateral and multilateral donors, private foundations and governments, the profile team identified the full panorama of projects and programs currently in implementation or expected to be executed in the near future. The major donors of conservation and sustainable development initiatives in Mesoamerica are described briefly below.

Global Environment Facility. The GEF has been the largest international donor of biodiversity conservation in Mesoamerica. Since 1993, the GEF has invested approximately $35 million in Northern Mesoamerica. Approximately $18 million supports the Mesoamerican Biological Corridor, while $3 million has supported community-based organizations and NGOs through the UNDP's Small Grants Program. The GEF has also supported the preparation of the national biodiversity conservation strategies and action plans and is providing $16.5 million to the Protected Areas Fund in Mexico (FMCN), targeted at 10 priority protected areas, three of which are within CEPF's key biodiversity areas. In the future, the expectation is that the GEF will direct 80 percent of its future investments through governments in four areas: in-situ conservation (protected areas, strengthening the national protected areas system), natural resource management, sectoral integration (tourism, trade, finance, agriculture) and communication of lessons learned.

The World Bank. The Bank's 2001-2006 strategy supports public sector initiatives in the sustainable management of natural resources, development of frameworks for environmental management and support in the search for equitable solutions for other regional challenges. In Mexico, the Bank has assisted the Secretariat for the Environment and Natural Resources - Mexico (SEMARNAP) to develop policy instruments consistent with the country's biodiversity strategy, including improving conservation through the national system of protected areas (SINAP); promoting sustainable use of plant and animal species with improved management and market access; and mainstreaming both conservation and sustainable use into territorial development by means of integrated land-use planning. The Bank's future investments in the region will total approximately $30 million, and will concentrate on the sustainable development of the Cuchumatanes through the Western Altiplano Natural Resource Management Project.

United States Agency for International Development (USAID). USAID investments are channeled through NGOs to support the conservation of critical ecosystems and improve natural resource management. USAID-Guatemala has supported natural resource management in priority biodiversity areas—principally the Maya Biosphere Reserve—while offering viable options for sustainable income-producing alternatives. USAID also funds PROARCA, a regional environmental program, which aims to improve environmental management in the Biological Corridor. In addition, there are three Parks in Peril sites in the area—Sierra de Las Minas/Bocas del Polochic in Guatemala, and Calakmul and El Triunfo biosphere reserves in Mexico. Another priority for USAID is improved river basin and water management, as integrating themes that help prioritize activities and also reduce vulnerability to climate change.

The Government of Germany (GTZ and other agencies). The Government of Germany is a major donor in Mesoamerica, supporting balanced economic and social development. In collaboration with DANIDA on many initiatives, the German government provides support for various regional projects including the Mesoamerican Biological Corridor through support for the CCAD. Other regional programs include an ecotourism project; support for the Center for Research and Training in Tropical Agriculture, offering assistance to small agro-industries in the use of non-chemical alternatives to pesticides; and a project to improve the environmental management of small and medium enterprises in Central America.

Inter-American Development Bank (IDB). The IDB has less than $500,000 for conservation and sustainable development in the region. However, within the Plan Puebla Panama, the Mesoamerican Initiative for Sustainable Development will promote sustainable natural resource management, and develop environmental management at national and regional levels. This initiative will also promote mechanisms for local community participation.

United Nations Development Program (UNDP). UNDP has invested around $40 million in support of the MBC at a regional level. It also has provided $3 million through the GEF-UNDP small grants program, working toward the strengthening of the protected areas.

Private Foundations. The Packard, Kellogg, Sharp and Ford foundations all fund programs in the Maya Forest. For the MacArthur Foundation, investments have targeted rapid population growth and the demand for resources, even though the region is not one of the Foundation's geographic priority areas.

SUMMARY OF KEY FINDINGS AND OPPORTUNITIES FOR CEPF

Several conclusions emerge from the biological, threats and investment analyses conducted for the ecosystem profile to serve as guiding posts for developing the CEPF investment strategy:

- Perhaps most fundamentally, from a biological perspective, Mesoamerica ranks among the top hotspots in the world for diversity of species and endemism. From an investment efficiency perspective, CEPF support to Northern Mesoamerica will go far, proportionally speaking, to conserve species, sites and landscapes of global import. Eight key biodiversity areas that fall within two larger corridors emerge as the highest priorities for conservation due to the presence of globally threatened and endangered species.

- Although impressive strides have been made to conserve the region's biodiversity through collaborative efforts between governments, NGOs and donors, Mesoamerica also ranks among the most threatened hotspots in the world. Indeed, if current deforestation rates continue unabated, little forest cover will exist by 2015, and biodiversity will be lost. Urgent action is therefore needed to change this ominous trend.

- Although biodiversity is concentrated in specific sites, the causes of the most pernicious threats and obstacles to conservation are more systemic, political and regional in nature. For CEPF, the threats analysis suggests that reducing threats to biodiversity in Northern

Mesoamerica will require a different investment strategy than that grounded solely in site-based conservation. As a result, actions to ameliorate threats to biodiversity must be targeted at a regional and political level, focusing on the most important threats: agricultural encroachment, forest fires, infrastructure development and large-scale tourism development.

- Interdependency exists between civil society and the large investments planned in the next few years. On the one hand, virtually all future investments will in one way or another depend on vibrant civil society participation to ensure their success. It is well recognized that civil society best reflects the needs and perspectives of local stakeholders, and that NGOs bring to bear unique expertise and experience gained from practicing conservation and the sustainable use of resources over the last two decades. Equally important, civil society will look to these new investments as providing the financial wherewithal to address the root causes and proximate threats to biodiversity loss.

- While civil society has contributed significantly to advancing conservation over the last two decades, efforts now need to evolve further toward strengthening and unifying civil society in more strategic and collaborative ways in order to confront priority threats at a policy level and to engage in strong partnerships with implementers of large investments. CEPF therefore provides a platform in which civil society can develop the capacity and knowledge required to ensure that they fulfill their vital role for the future.

CEPF NICHE FOR INVESTMENT

Through CEPF, civil society and local governments will play an instrumental role in helping to ensure that the most important development and conservation initiatives and policies in Northern Mesoamerica have a long-term, positive impact on the region's most biologically rich areas. These new initiatives, such as the Plan Puebla-Panama, Central America Free Trade Agreement, the Mundo Maya initiative and the Western Altiplano Natural Resource Management Project, put regional decisionmakers at a crossroads. If planned and implemented thoughtfully with meaningful participation of civil society and local communities, these initiatives promise to help attack the root causes and proximate threats of biodiversity loss. If, on the other hand, these schemes are implemented with little consideration for their environmental and social impacts, they risk perpetuating the root causes of resource degradation, exacerbating biodiversity loss and fueling the cycle of poverty. Given this reality, the recognition exists that these development schemes themselves must rely heavily on constructive engagement with civil society to achieve their own economic, social and environmental sustainability and success.

With this imperative in mind, the CEPF niche is designed to promote win-win solutions to achieve the critical regional goals of poverty alleviation and conservation by influencing select development investments and policies in the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors. More formally, the CEPF niche aims to

> *Influence select development policies and investments to achieve biodiversity conservation outcomes in the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors through increased knowledge, capacity and coordination of civil society and local government*.

The CEPF niche is designed with the understanding that a unique window of opportunity exists over the next five years for conserving the biological heritage of Northern Mesoamerica. If civil society has the strategic vision, appropriate capacity and desire to work collectively toward common goals, it will have the opportunity to influence the design and implementation of the $122 million of conservation related investments. Equally important, civil society will be able to proactively engage in the preparation of tens of billions of dollars to be invested through the Plan Puebla-Panama and related development initiatives in order to ensure that they have a long-term positive effect on biodiversity.

Through the adoption of four strategic directions, CEPF will take a multi-pronged approach to achieve this goal. First, CEPF will work at a corridor-level to encourage biodiversity friendly policies and investments within the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors. The aim will be to ensure that civil society develops the capacity to participate in the decision-making process related to high priority investments and policies. The second strategic direction is designed to complement the first strategic direction by serving as the field component of the policy and investment strategies pursued. It will target the eight most biologically important key biodiversity areas in the region to ensure that these priority sites achieve their conservation objectives through CEPF and partner funding. CEPF will work to help coordinate and build capacity of civil society and local governments in ways that allow them to successfully support conservation in the field. The third strategic direction funds priority actions in the three key biodiversity areas where basic conservation needs are likely to be underfunded in the next five years. The fourth strategic direction supports conservation activities that focus on saving the region's critically endangered species from extinction.

Guiding principles that underpin this strategy rest on the need for CEPF to focus on those investments and policies that have the greatest impact on conservation in Northern Mesoamerica. CEPF will fund activities that support viable alternatives to resource degradation and that mitigate potential threats, such as the case for infrastructure projects. Furthermore, the strategy will consider actions where civil society and local governments, independently and jointly, have a meaningful and often unique role to play.

CEPF Strategic Directions	CEPF Investment Priorities
1. Foster civil society participation in regional decisionmaking on select policies and investments to promote the conservation and sustainable development of the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors	1.1. Promote policy reforms that integrate biodiversity conservation in agriculture, infrastructure development, forest fires and tourism 1.2. Develop and strengthen collaborative networks that enable civil society to influence investments with corridor-wide impacts (such as Mundo Maya, PPP, CAFTA) and to foster coordination of current activities 1.3. Build and support action-oriented associations focused on conservation-based enterprises to identify and share lessons learned and to facilitate their growth 1.4. Promote the introduction and use of new sustainable conservation financing mechanisms, focusing on payments for environmental services. *CEPF will not provide funding for the actual payments, but will fund analysis and promotion of different models 1.5. Support corridor-level biological and environmental management monitoring relevant for understanding the state of biodiversity conservation for decisionmaking
2. Collaborate with other donor-funded projects to facilitate and operationalize successful conservation activities in Northern Mesoamerica's eight most important key biodiversity areas	2.1. Increase coordination of key stakeholder groups to plan and implement initiatives in the eight priority key biodiversity areas 2.2. Increase local government and NGO capacity for forest fire prevention and control, enforcement of land tenure laws and the prevention of illegal hunting and timber harvesting 2.3. Build civil society capacity to support the mitigation of impacts of proposed infrastructure projects on biodiversity, focusing on roads and dams 2.4. Assess the adequacy of coverage of protected areas, and lay the groundwork for declaration of new private and public reserves
3. Support priority conservation actions in three priority key biodiversity areas	3.1. Strengthen management of Sierra de las Minas in areas such as facilitating payments for watershed services, stakeholder coordination and reduction in timber harvesting 3.2. Strengthen management of Laguna del Tigre in areas such as fire management, conflict resolution and economic alternatives to deforestation 3.3. Strengthen management of Chiquibul/Montañas Mayas in areas such as xate harvesting and the protection of the Macal River valley
4. Support efforts to prevent the extinction of Northern Mesoamerica's 106 Critically Endangered species	4.1. Improve protection of Critically Endangered species through enhanced knowledge of their conservation needs, increased local capacity to conserve these species and investments in field conservation and protection projects 4.2. Increase coordination of efforts to improve the protection of Critically Endangered species through the exchange and consolidation of data and information

CEPF INVESTMENT STRATEGY AND PROGRAM FOCUS

Foster civil society participation in regional decisionmaking on select policies and investments to promote the conservation and sustainable development of the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors

Government investment in conservation and development in the Selva Maya and the Selva Zoque and Chiapas/Guatemala Highlands corridors will grow significantly in the coming years. New investments aim to promote economic development and increase income for the rural poor. If designed and implemented well, they hold real potential for helping arrest land and forest degradation. Conversely, some projects will fund major infrastructure—roads, deepwater ports, power transmission lines and hydroelectric dams—which could well introduce new threats to the region. At the same time, the continuing process of decentralized financial decisionmaking will give state and municipal governments control over hundreds of millions of dollars.

Given this dynamic, civil society engagement in decisionmaking processes is critical to ensure that development proceeds democratically, in a way that incorporates the needs of all stakeholders and the environment. Civil society, particularly environmental NGOs, occupy an important and unique position as the principal advocates for the interest of the environment and biodiversity. Given these needs, CEPF will invest in empowering civil society to engage in high-level decisionmaking processes for priority investments and policies through five linked and mutually reinforcing investment priorities.

1.1 CEPF will support the promotion of policy reforms related to the most critical issues for conservation where civil society can make a difference: agriculture, infrastructure development, forest fires and tourism development. These four issues together have the strongest influence on the welfare of biodiversity in the two corridors. CEPF will initially identify appropriate NGOs that are interested in working collectively, through strategic alliances that are designed to be proactive. To ensure that these alliances have a firm analytical basis to develop their positions and strategies, CEPF will initially fund assessments to gain better understanding of each issue and to identify priorities and opportunities for action. Based on this analytical work, the alliances will develop and implement strategies whereby the NGO community can work collaboratively on high priority actions that will achieve the greatest benefits for conservation. CEPF will fund capacity building exercises and technical assistance where necessary to ensure that civil society has the wherewithal to effectively influence policy change and development investments.

1.2 CEPF will support civil society participation in policy-making fora and collaborative networks at the highest levels, including the CCAD, the Central American System of Protected Areas (SICAP), the Mesoamerican Biological Corridor, the Mesoamerican Initiative for Sustainable Development and national governments. Civil society will play an active and advocacy role in the consultation process to ensure that biodiversity considerations are integrated into the future development plans of the two corridors.

1.3 CEPF will aim to support conservation-based enterprises that show promise of generating environmentally sustainable sources of income for communities that otherwise could be agents of deforestation and environmental degradation, focusing on ecotourism and conservation coffee. In the region, a multitude of initiatives have been undertaken, however, dialogue and collaboration between the operators of these enterprises has been virtually non-existent. Furthermore, little attention has been paid to scaling these initiatives up to the extent required to play a meaning role in threats amelioration. To address these shortcomings, CEPF will support the creation of associations of conservation-based enterprises for ecotourism and conservation coffee with a view toward supporting their success and scaling up their operations. CEPF will support the identification and sharing of share lessons learned and best practices, evaluate their potential to address critical threats at the appropriate scale, promote greater collaboration in areas such as marketing to build synergies and strengthen capacity to improve their operations so that they can reach levels needed to play a larger role in mitigating threats.

1.4 CEPF will support the introduction and use of innovative conservation financing tools into the region, such as payments for environmental services, and incentive payments. Collaboration will be sought with the Western Altiplano Natural Resource Management Project, which works on building environmental service markets. Several potential opportunities exist for promoting market-based incentives for sustainable conservation financing. CEPF will support the identification of viable opportunities in the corridor for promoting such projects, including technical assistance and capacity building to develop potential projects and policy instruments.

1.5 To ensure that accurate information is generated about the state of biodiversity and the trends, CEPF will support corridor-level monitoring of trends and parameters considered important in biodiversity conservation in partnership with other organizations working in this arena, including the MBC. CEPF will support partner efforts in the collection and analysis of relevant data with a view toward promoting information sharing. CEPF will fund efforts to disseminate findings to key decision makers and donors. CEPF investment in monitoring will complement similar efforts planned for Southern Mesoamerica.

Collaborate with other donor-funded projects to facilitate and operationalize successful conservation activities in Northern Mesoamerica's eight most important key biodiversity areas

CEPF has identified the eight most important areas for conservation in Northern Mesoamerica. If these sites can be secured, a considerable share of the Mesoamerica hotspot's biological diversity will be conserved. The challenge, however, is two-fold. As noted in the profile, five key biodiversity areas—Selva Zoque, Sierra Madre de Chiapas, Lacandona, the Gran Peten and Cuchumatanes—are expected to receive significant new investments over the next five years. However, these new investments will not address several critical threats, such as planned infrastructure projects. In addition, although the three remaining key biodiversity areas—Sierra de las Minas, Laguna del Tigre, and Chiquibul/ Montañas Mayas—will also be affected by development policies and investments, they are projected to receive negligible funding. Despite these dramatic differences in funding levels, civil society and local governments have a critical role to play in conserving all eight key biodiversity areas.

Through this strategic direction, CEPF will allow the high-level policy work conducted under the first strategic direction to trickle down to the field, and conversely, allow the lessons learned in the field to trickle up to the policy level through networks that are vertical in nature. CEPF will support four investment priorities:

2.1 CEPF will support a network of key stakeholders within each corridor that represent the conservation interests of the eight key biodiversity areas. This network will help ensure that members develop and work toward common objectives of consolidating key biodiversity areas that key programs are well coordinated, and that lessons can be shared with the ultimate goal of strengthening the corridor. This investment priority will be focused at a more operational level and include as members local NGOs and community groups, governments and park services, among others. Furthermore, these corridor-level networks will interact with the policy-level networks in the first strategic direction to ensure that these two levels of action are working to maximize synergy and communications.

2.2 Bottlenecks to ameliorating threats not only occur at the policy level, but also at the local level. Thus, CEPF will help build local government and NGO capacity, as appropriate, in three areas where municipalities play a critical role in threat amelioration: forest fire prevention and control, enforcement of land tenure laws and titling, and prevention of illegal hunting and timber harvesting. CEPF may build this capacity through training, procurement of equipment, land titling surveys and improved enforcement.

2.3 CEPF will fund activities to ensure that infrastructure projects are designed to incorporate biodiversity and community interests. Targeted projects will be identified, training courses in economic and environmental impact analysis will be delivered, an economic and environmental impact analysis of each target project conducted and the results will be communicated to decisionmakers and the public. Special attention will be paid to roads and dams, which present the most immediate threats in the corridors.

2.4 Protected areas coverage remains inadequate in some key biodiversity areas, such as the Selva Zoque. CEPF will support analysis to identify the location of priority sites for increased protection, and assist in laying the groundwork for declaration of new private and public protected areas and municipal reserves. CEPF will then provide support to identify sources of funding to manage these areas.

Support priority conservation actions in three priority key biodiversity areas

Management of three priority key biodiversity areas—Sierra de las Minas, Laguna del Tigre and Chiquibul/Montañas Mayas—currently lacks funding to meet the most minimal of needs, despite the areas' high biological value. CEPF will concentrate funding in these areas through a limited number of high priority actions to ensure adequate management presence and capacity for conservation. CEPF will support activities that provide a stronger foundation and justification for future conservation investments. These core set of interventions include three investment priorities:

3.1 In Sierra de las Minas, developing a system for payments for watershed services, enhancing conservation stakeholder coordination and reducing timber harvesting.

3.2 In Laguna del Tigre, investing in fire management, conflict resolution and economic alternatives to deforestation.

3.3 In Chiquibul/Montañas Mayas, introducing alternatives to and enhancing sustainability of xate harvesting and improving protection of the Macal River valley.

Support efforts to prevent the extinction of Northern Mesoamerica's 106 Critically Endangered Species

While conservation of habitat has been an important investment theme in Northern Mesoamerica in the last 10 years, species conservation has received minimal funding. Moreover, species-specific funding has focused on large umbrella species such as jaguar and the scarlet macaw, species that although regionally threatened, are not globally threatened. Less well known Critically Endangered species, such as the six amphibians supported in Cuchumatanes and the two rodents in Lacandona, have received no conservation investments and remain in critical danger. Regional, or even site-specific conservation actions are rarely enough to protect such small, often locally endemic species. CEPF will invest in efforts to prevent the extinction of Northern Mesoamerica's 106 Critically Endangered species throughout the region (including in El Salvador and Honduras) through two investment priorities:

4.1 CEPF will provide small grants to increase knowledge and understanding of the 106 Critically Endangered species and their management needs, including distributions, resource requirements and conservation status. Investments will build capacity for their management through targeted training in their conservation, development of conservation strategies and direct field conservation and protection projects.

4.2 CEPF will increase coordination of species-protection efforts through the exchange and consolidation of data and information.

SUSTAINABILITY

Over the next five years, more than $122 million will be invested in conservation and sustainable development in five of the eight most important key biodiversity areas. CEPF funds will be only a fraction of these investments. CEPF will be unable to support the breadth of projects that need to be implemented or the total number of organizations that require funding. CEPF will therefore invest, at a regional and local level, in a niche that other donors are not filling. This niche is to enhance civil society's ability—through the building of knowledge, capacity and coordination—to engage in the decisionmaking processes that determine how Mesoamerica's natural and financial resources will be used.

After a successful five years of investment, CEPF will have increased civil society's capacity to influence the decisions that ensure the sustainable management of Mesoamerica's natural resources. NGOs, community groups and local government officials across the region will have increased knowledge about the threats to biodiversity, the role of their governments and regional actors in increasing or diminishing these threats, their potential solutions and the likelihood that

such activities geared toward mitigating threats will work. Civil society groups will also demonstrate an increased capacity, both individually and in coordination with others, to take decisions about how to manage these threats and opportunities. CEPF's legacy for natural resource management in Northern Mesoamerica will not only be in specific projects, but in the development and strengthening of a civil society-based decisionmaking process that is more knowledgeable, more democratic, more effective and, ultimately, more sustainable.

CONCLUSION

Northern Mesoamerica is at a crossroads. The level of environmental consciousness and the perceived importance of biodiversity conservation have increased rapidly in recent years. Governments have led the way, creating the Mesoamerican Biological Corridor and the Central American Commission on the Environment and Development. Many donors have followed, investing millions of dollars in sustainable development, and promising to invest exponentially more in the next five years. However, a few investors have not yet responded to the new Mesoamerican consciousness. Projects that destroy rather than protect natural resources continue to be proposed such as road improvements that cut into the region's most important biodiversity areas and dams that will flood pristine, globally unique forests. Moreover, significant segments of Mesoamerican civil society have not yet been able to influence the decisionmaking process that determines which investments and which policies will be implemented. The disconnect remains wide between the top down planning that governments are able to provide, and the transparency and decentralization that civil society needs.

CEPF will invest in bridging this gap. Five years of investments in knowledge, capacity and coordination will enable civil society to better engage in the making of decisions that improve conservation and will ensure that other, bigger development investments have had a net positive impact on biodiversity conservation. Mesoamericans deserve a significant role in natural resource management decisionmaking: CEPF investments will help prepare them for this role.

LIST OF SYMBOLS AND ABBREVIATIONS

CCAD	Central American Commission on the Environment and Development
CEPF	Critical Ecosystem Partnership Fund
CI	Conservation International
CONABIO	National Commission for the Knowledge and Use of Biodiversity - Mexico
CONANP	National Commission for Protected Nature Areas - Mexico
CONAP	National Commission for Protected Areas - Guatemala
FCG	Trusteeship for the Conservation of Guatemala
GEF	Global Environment Facility
GTZ	German Technical Cooperation
IADB	Inter-American Development Bank
IUCN	International Union for the Conservation of Nature
MBC	Mesoamerican Biological Corridor
NGO	Nongovernmental organization
PPP	Plan Puebla Panama
PROARCA	Resource Evaluation Program for Central America
PROLEGIS	Environmental Legislation Program of the CCAD
SEMARNAT	Secretariat for the Environment and Natural Resources - Mexico
SICAP	Central American System of Protected Areas
TNC	The Nature Conservancy
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
USAID	US Agency for International Development
WWF	World Wide Fund for Nature

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APPENDICES

Appendix 1: Northern Mesoamerica's Globally Critically Endangered Species

Class	Family	Scientific Name	Common Name(s)	Countries of Occurrence in N. Mesoamerica				
				Belize	El Salvador	Guatemala	Honduras	Mexico
ACTINOPTERYGII	CYPRINIDAE	Notropis moralesi	Sardinita de Tepelmene					1
	CYPRINODONTIDAE	Cyprinodon verecundus	Cachorrito de Dorsal Larga					1
	POECILIIDAE	Gambusia eurystoma	Guayacon Bocon					1
		Poecilia sulphuraria	Molly del Teapa					1
AMPHIBIA	Centrolenidae	Hyalinobatrachium crybetes					1	
	Hylidae	Duellmanohyla salvavida					1	
		Hyla dendrophasma				1		
		Hyla insolita					1	
		Hyla perkinsi	Perkins' Treefrog			1		
		Hyla salvaje				1	1	
		Hyla valancifer	Lichenose Fringe-limbed Treefrog	1				1
		Plectrohyla chrysopleura					1	
		Plectrohyla dasypus					1	
		Plectrohyla pycnochila	Thicklip Spikethumb Frog					1
		Plectrohyla tecunumani	Cave Spikethumb Frog			1		
	Leptodactylidae	Eleutherodactylus anciano					1	
		Eleutherodactylus coffeus					1	
		Eleutherodactylus cruzi					1	
		Eleutherodactylus fecundus					1	
		Eleutherodactylus merendonensis					1	
		Eleutherodactylus olanchano					1	
		Eleutherodactylus pozo						1
		Eleutherodactylus saltuarius					1	
	Plethodontidae	Bolitoglossa carri	Cloud Forest Salamander				1	

		Bolitoglossa decora					1	
		Bolitoglossa diaphora					1	
		Bolitoglossa jacksoni	Jackson's Mushroomtongue Salamander			1		
		Bolitoglossa longissima					1	
		Bolitoglossa synoria			1		1	
		Bradytriton silus	Finca Chiblac Salamander			1		
		Cryptotriton monzoni				1		
		Cryptotriton nasalis	Cortes Salamander				1	
		Dendrotriton cuchumatanus	Forest Bromeliad Salamander			1		
		Ixalotriton niger						1
		Ixalotriton parvus						1
		Nototriton lignicola					1	
		Pseudoeurycea exspectata	Jalpa False Brook Salamander			1		
AVES	MIMIDAE	Toxostoma guttatum	Cozumel Thrasher					1
	TROCHILIDAE	Amazilia luciae	Amazilia Hondureña				1	
			Esmeralda Hondurena				1	
			Honduran Emerald				1	
CRUSTACEA	HIPPOLYTIDAE	Somersiella sterreri						1
MAGNOLIOPSIDA	ANNONACEAE	Desmopsis dolichopetala					1	
		Malmea leiophylla					1	
	AQUIFOLIACEAE	Ilex williamsii					1	
	ARALIACEAE	Dendropanax hondurensis					1	1
		Oreopanax lempiranus					1	
	BIGNONIACEAE	Chodanthus montecillensis					1	
	BOMBACACEAE	Quararibea yunckeri					1	
	BORAGINACEAE	Cordia urticacea					1	1
	CACTACEAE	Coryphantha vogtherriana						1
		Echinocactus grusonii						1
		Escobaria aguirreana						1
		Mammillaria berkiana						1
		Mammillaria brachytrichion						1
		Mammillaria guelzowiana						1
		Opuntia chaffeyi						1
		Turbinicarpus booleanus						1
		Turbinicarpus						1

		hoferi						
		Turbinicarpus jauernigii						1
		Turbinicarpus rioverdensis						1
		Turbinicarpus swobodae						1
	CAPRIFOLIACEAE	Viburnum hondurense					1	
		Viburnum molinae					1	
		Viburnum subpubescens					1	
	CELASTRACEAE	Maytenus williamsii					1	
		Tontelea hondurensis				1	1	
	CONNARACEAE	Connarus popenoei					1	
	ELAEOCARPACEAE	Sloanea shankii					1	
	FAGACEAE	Quercus hinckleyi	Hinckley's oak					1
		Quercus hintonii						1
	FLACOURTIACEAE	Casearia williamsiana					1	
	HAMAMELIDACEAE	Molinadendron hondurense					1	
	LAURACEAE	Pleurothyrium roberto-andinoi					1	
	LEGUMINOSAE	Bauhinia paradisi					1	
		Dalbergia intibucana					1	
		Lonchocarpus molinae					1	
		Lonchocarpus phaseolifolius			1	1	1	
		Lonchocarpus sanctuarii					1	
		Lonchocarpus trifolius					1	
		Lonchocarpus yoroensis					1	1
		Platymiscium albertinae					1	
		Terua vallicola					1	
	MONIMIACEAE	Mollinedia butleriana					1	
		Mollinedia ruae					1	
	MYRSINACEAE	Gentlea molinae					1	
	MYRTACEAE	Eugenia coyolensis					1	
		Eugenia lancetillae					1	
	OLEACEAE	Forestiera hondurensis					1	
		Fraxinus hondurensis					1	
	POLYGONACEAE	Coccoloba cholutecensis					1	
		Coccoloba lindaviana					1	
	RHAMNACEAE	Colubrina hondurensis					1	
	RUTACEAE	Decazyx esparzae					1	1
	SAPOTACEAE	Sideroxylon retinerve					1	
	SYMPLOCACEAE	Symplocos molinae					1	
	THEACEAE	Ternstroemia					1	

		landae						
	VIOLACEAE	Gloeospermum boreale					1	
	VOCHYSIACEAE	Vochysia aurifera					1	
MAMMALIA	GEOMYIDAE	Orthogeomys cuniculus						1
	HETEROMYIDAE	Heteromys nelsoni						1
	MURIDAE	Tylomys bullaris						1
		Tylomys tumbalensis						1
	VESPERTILIONIDAE	Myotis cobanensis				1		
REPTILIA	ANGUIDAE	Abronia montecristoi			1			
	DERMOCHELYIDAE	Dermochelys coriacea	Canal		1	1	1	1
			Cardon					
			Leatherback					
			Tinglada					
			Tinglar					
			Tortuga laud					
	CHELONIIDAE	Eretmochelys imbricata	Hawksbill Turtle	1	1	1	1	1
			Tortuga carey					
			Cotorra					
		Lepidochelys kempi	Kemp's Ridley					1
			Tortuga iora					
			Tortuga marina bastarda					

Appendix 2: Key Biodiversity Areas and the Threatened Species they Support

Area	Class	Species	Status
Alta Verapaz	Amphibia	Eleutherodactylus sartori	EN
		Bolitoglossa mulleri	VU
		Bolitoglossa odonnelli	VU
		Eleutherodactylus bocourti	VU
		Eleutherodactylus rivulus	VU
		Nyctanolis pernix	VU
		Plectrohyla quecchi	VU
		Rana macroglossa	VU
Bosques Mesofilos del Norte de Chiapas	Amphibia	Plectrohyla pycnochila	CR
		Cryptotriton alvarezdeltoroi	EN
		Eleutherodactylus glaucus	EN
		Plectrohyla acanthodes	EN
		Bolitoglossa rostrata	VU
		Duellmanohyla chamulae	VU
		Duellmanohyla schmidtorum	VU
		Hyla chaneque	VU
		Plectrohyla guatemalensis	VU
		Ptychohyla macrotympanum	VU
	Aves	Dendroica chrysoparia	EN
		Ergaticus versicolor	VU
	Coniferopsida	Juniperus gamboana	VU
	Magnoliopsida	Maytenus matudai	VU
		Oreopanax sanderianus	VU
	Mammalia	Heteromys nelsoni	CR
		Tylomys bullaris	CR
		Tylomys tumbalensis	CR
		Sorex sclateri	EN
		Sorex stizodon	EN
		Peromyscus zarhynchus	VU
Chiquibul Montañas Mayas	Amphibia	Eleutherodactylus sabrinus	VU
		Eleutherodactylus sandersoni	VU
	Aves	Electron carinatum	VU
	Mammalia	Tapirus bairdii	EN
		Antrozous dubiaquercus	VU
Complejo Sierra de Las Minas, Motagua, Biotopo Quetzal	Amphibia	Eleutherodactylus daryi	EN
		Ptychohyla panchoi	EN
		Bolitoglossa meliana	VU
		Bolitoglossa odonnelli	VU
		Cryptotriton veraepacis	VU
		Eleutherodactylus aphanus	VU
		Eleutherodactylus bocourti	VU
		Eleutherodactylus sabrinus	VU
		Eleutherodactylus sandersoni	VU
		Plectrohyla hartwegi	VU

		Plectrohyla pokomchi	VU
		Plectrohyla quecchi	VU
Corredor Sian Ka'an Calakmul	Mammalia	Tapirus bairdii	EN
		Antrozous dubiaquercus	VU
		Caluromys derbianus	VU
	Reptilia	Lepidochelys kempi	CR
Corredor Vallarta Punta Laguna	Magnoliopsida	Tontelea hondurensis	CR
Costa Norte de la Peninsula de Yucatan	Actinopterygii	Ophisternon infernale	EN
		Ogilbia pearsei	VU
	Aves	Charadrius melodus	VU
	Mammalia	Caluromys derbianus	VU
	Reptilia	Dermochelys coriacea	CR
		Eretmochelys imbricata	CR
		Caretta caretta	EN
		Chelonia mydas	EN
		Crocodylus acutus	VU
Cozumel	Aves	Toxostoma guttatum	CR
	Mammalia	Nasua nelsoni	EN
		Procyon pygmaeus	EN
		Reithrodontomys spectabilis	EN
	Reptilia	Crocodylus acutus	VU
Cuchumatanes	Amphibia	Bolitoglossa jacksoni	CR
		Bradytriton silus	CR
		Dendrotriton cuchumatanus	CR
		Hyla dendrophasma	CR
		Hyla perkinsi	CR
		Plectrohyla tecunumani	CR
		Dendrotriton rabbi	EN
		Plectrohyla glandulosa	EN
		Bolitoglossa mulleri	VU
		Bolitoglossa rostrata	VU
		Eleutherodactylus rivulus	VU
		Nyctanolis pernix	VU
		Plectrohyla guatemalensis	VU
		Plectrohyla hartwegi	VU
		Plectrohyla quecchi	VU
		Ptychohyla macrotympanum	VU
		Rana macroglossa	VU
The Grand Peten	Amphibia	Bolitoglossa mulleri	VU
		Eleutherodactylus rostralis	VU
	Aves	Electron carinatum	VU
	Magnoliopsida	Cymbopetalum mayanum	EN
		Wimmeria montana	EN
		Aegiphila monstrosa	VU
		Aegiphila panamensis	VU
		Aegiphila skutchii	VU
	Mammalia	Tylomys tumbalensis	CR
		Tapirus bairdii	EN

		Antrozous dubiaquercus	VU
		Caluromys derbianus	VU
		Trichechus manatus	VU
	Reptilia	Dermochelys coriacea	CR
		Eretmochelys imbricata	CR
		Caretta caretta	EN
		Chelonia mydas	EN
		Crocodylus acutus	VU
Humedales Costeros de Chiapas	Aves	Amazona oratrix	EN
	Coniferopsida	Pinus tecunumanii	VU
	Magnoliopsida	Pistacia mexicana	VU
	Reptilia	Dermochelys coriacea	CR
		Lepidochelys olivacea	EN
		Crocodylus acutus	VU
		Heloderma horridum	VU
		Rhinoclemmys rubida	VU
Izabal Caribe	Amphibia	Eleutherodactylus charadra	EN
		Ptychohyla panchoi	EN
		Bolitoglossa mulleri	VU
		Eleutherodactylus rostralis	VU
		Eleutherodactylus sabrinus	VU
		Eleutherodactylus sandersoni	VU
Lacandona	Amphibia	Bolitoglossa mulleri	VU
		Bufo tutelarius	VU
		Duellmanohyla schmidtorum	VU
		Hyla chimalapa	VU
		Plectrohyla sagorum	VU
		Ptychohyla macrotympanum	VU
	Insecta	Amphipteryx agrioides	EN
		Epigomphus paulsoni	EN
		Hetaerina rudis	EN
		Heteragrion tricellulare	EN
	Liliopsida	Brahea nitida	VU
		Gaussia maya	VU
	Magnoliopsida	Malmea gaumeri	EN
		Vitex cooperi	EN
		Vitex kuylenii	EN
		Wimmeria chiapensis	EN
		Cedrela odorata	VU
		Lonchocarpus santarosanus	VU
		Magnolia yoroconte	VU
		Pouteria amygdalina	VU
		Saurauia leucocarpa	VU
		Saurauia villosa	VU
		Sideroxylon durifolium	VU
		Swietenia humilis	VU
		Ticodendron incognitum	VU
	Mammalia	Tylomys bullaris	CR
		Tylomys tumbalensis	CR

		Tapirus bairdii	EN
		Antrozous dubiaquercus	VU
		Caluromys derbianus	VU
	Reptilia	Dermatemys mawii	EN
		Crocodylus acutus	VU
Laguna del Tigre	Mammalia	Tapirus bairdii	EN
	Reptilia	Dermatemys mawii	EN
Montebello	Amphibia	Bolitoglossa stuarti	EN
		Nyctanolis pernix	VU
	Aves	Dendroica chrysoparia	EN
	Coniferopsida	Pinus tecunumanii	VU
	Mammalia	Peromyscus zarhynchus	VU
Pantanos de Centla / Laguna de Terminos	Aves	Amazona oratrix	EN
		Dendroica chrysoparia	EN
	Reptilia	Caretta caretta	EN
Rio Hondo	Reptilia	Dermatemys mawii	EN
Selva Zoque	Amphibia	Eleutherodactylus pozo	CR
		Ixalotriton niger	CR
		Bolitoglossa mulleri	VU
		Bufo tutelarius	VU
		Duellmanohyla schmidtorum	VU
		Eleutherodactylus rostralis	VU
		Hyla chaneque	VU
		Hyla chimalapa	VU
		Plectrohyla guatemalensis	VU
		Plectrohyla sagorum	VU
		Ptychohyla macrotympanum	VU
	Aves	Dendroica chrysoparia	EN
		Electron carinatum	VU
		Hylorchilus navai	VU
	Magnoliopsida	Albizia plurijuga	EN
		Chiangiodendron mexicanum	EN
		Elaeagia uxpanapensis	EN
		Eugenia uxpanapensis	EN
		Oreomunnea pterocarpa	EN
		Parathesis vulgata	EN
		Erythrina tuxtlana	VU
		Eschweilera mexicana	VU
		Ocotea uxpanapana	VU
		Quercus purulhana	VU
		Quercus skinneri	VU
	Mammalia	Orthogeomys cuniculus	CR
		Tylomys tumbalensis	CR
		Lepus flavigularis	EN
		Tapirus bairdii	EN
		Leptonycteris curasoae	VU
		Peromyscus zarhynchus	VU
	Reptilia	Crocodylus acutus	VU

		Heloderma horridum	VU
Selvas de Tabasco	Actinopterygii	Gambusia eurystoma	CR
		Poecilia sulphuraria	CR
	Amphibia	Duellmanohyla chamulae	VU
	Mammalia	Caluromys derbianus	VU
Sian Ka'an	Actinopterygii	Cyprinodon verecundus	CR
		Cyprinodon beltrani	EN
		Cyprinodon labiosus	EN
		Cyprinodon maya	EN
		Cyprinodon simus	EN
		Ophisternon infernale	EN
		Hippocampus erectus	VU
		Ogilbia pearsei	VU
	Mammalia	Procyon pygmaeus	EN
		Reithrodontomys spectabilis	EN
		Tapirus bairdii	EN
		Antrozous dubiaquercus	VU
		Caluromys derbianus	VU
		Trichechus manatus	VU
	Reptilia	Dermochelys coriacea	CR
		Eretmochelys imbricata	CR
		Caretta caretta	EN
		Chelonia mydas	EN
		Crocodylus acutus	VU
Sierra de Ticul - Punto PUT	Actinopterygii	Cyprinodon verecundus	CR
		Cyprinodon beltrani	EN
		Cyprinodon labiosus	EN
		Cyprinodon maya	EN
		Cyprinodon simus	EN
		Ophisternon infernale	EN
		Ogilbia pearsei	VU
Sierra Madre de Chiapas	Amphibia	Ixalotriton parvus	CR
		Bolitoglossa engelhardti	EN
		Bolitoglossa flavimembris	EN
		Bolitoglossa franklini	EN
		Bufo tacanensis	EN
		Eleutherodactylus greggi	EN
		Eleutherodactylus sartori	EN
		Plectrohyla acanthodes	EN
		Plectrohyla lacertosa	EN
		Pseudoeurycea brunnata	EN
		Bufo tutelarius	VU
		Dendrotriton megarhinus	VU
		Dendrotriton xolocalcae	VU
		Duellmanohyla schmidtorum	VU
		Eleutherodactylus matudai	VU
		Hyla chimalapa	VU
		Plectrohyla avia	VU
		Plectrohyla guatemalensis	VU

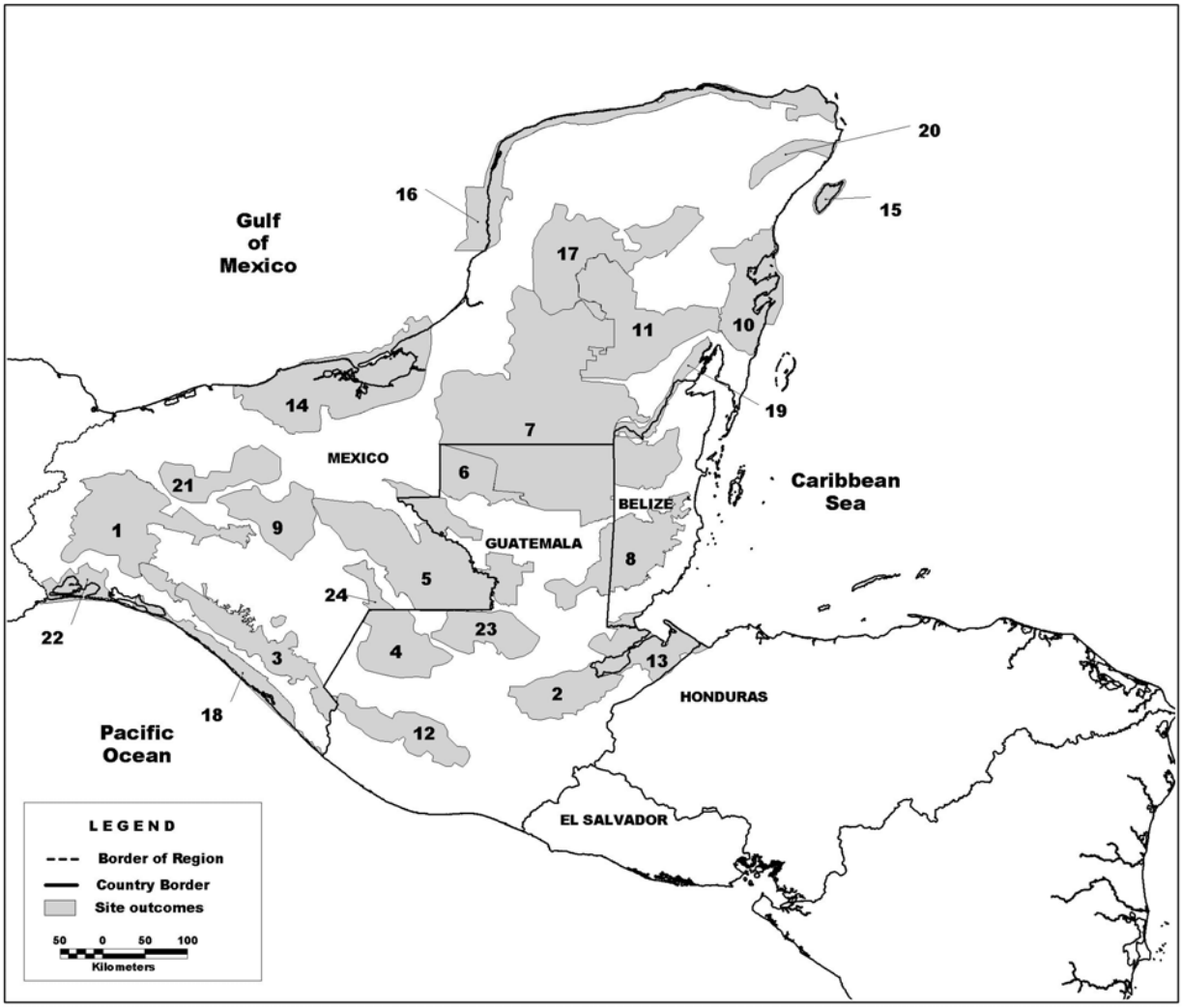
		Plectrohyla hartwegi	VU
		Plectrohyla sagorum	VU
		Pseudoeurycea goebeli	VU
		Ptychohyla macrotympanum	VU
	Aves	Dendroica chrysoparia	EN
		Oreophasis derbianus	EN
		Tangara cabanisi	EN
		Ergaticus versicolor	VU
	Magnoliopsida	Matudaea trinervia	VU
		Symplocos tacanensis	VU
	Mammalia	Heteromys nelsoni	CR
		Tylomys bullaris	CR
		Tylomys tumbalensis	CR
		Sorex stizodon	EN
		Tapirus bairdii	EN
		Peromyscus zarhynchus	VU
Volcanes Occidentales	Amphibia	Bolitoglossa engelhardti	EN
		Bolitoglossa flavimembris	EN
		Bolitoglossa franklini	EN
		Bufo tacanensis	EN
		Dendrotriton bromeliacius	EN
		Eleutherodactylus greggi	EN
		Oedipina stenopodia	EN
		Plectrohyla glandulosa	EN
		Pseudoeurycea brunnata	EN
		Bolitoglossa rostrata	VU
		Bufo tutelarius	VU
		Duellmanohyla schmidtorum	VU
		Eleutherodactylus matudai	VU
		Eleutherodactylus sabrinus	VU
		Plectrohyla avia	VU
		Plectrohyla guatemalensis	VU
		Plectrohyla hartwegi	VU
		Plectrohyla sagorum	VU
		Pseudoeurycea goebeli	VU
		Ptychohyla macrotympanum	VU
		Rana macroglossa	VU
	Aves	Oreophasis derbianus	EN
	Coniferopsida	Juniperus standleyi	EN
Zona Huave	Amphibia	Eleutherodactylus silvicola	EN
	Aves	Amazona oratrix	EN
	Mammalia	Orthogeomys cuniculus	CR
		Lepus flavigularis	EN
	Reptilia	Eretmochelys imbricata	CR
		Crocodylus acutus	VU
		Heloderma horridum	VU
		Rhinoclemmys rubida	VU

Appendix 3. Prioritization of Key Biodiversity Areas

Country	Key Biodiversity Area	Biological Importance				Conservation Status				
		Globally Threatened	Nationally Threatened	Endemic	**Total**	Extent Of Conservation	State Of Conservation	Connectivity	Ecological Diversity	**Total**
Mexico	Selva Zoque	3	3	3	**9**	3	3	3	3	**12**
Guatemala	Complejo Sierra de las Minas, Motagua, Biotopo	3	3	3	**9**	2	3	3	3	**11**
Mexico	Sierra Madre de Chiapas	3	3	3	**9**	2	3	3	3	**11**
Guatemala	Cuchumatanes	3	3	3	**9**	2	2	0	3	**7**
Mexico	Lacandona	3	3	1	**7**	3	3	3	2	**11**
Guatemala	Laguna del Tigre	1	3	3	**7**	3	2	3	2	**10**
Mexico/ Guatemala	The Grand Peten	3	3	1	**7**	3	3	3	1	**10**
Belize	Chiquibul/Montañas Mayas	3	3	1	**7**	3	3	1	2	**9**
Mexico	Bosque Mesofilos del Norte de Chiapas	3	1	3	**7**	1	1	0	1	**3**
Mexico	Sian Ka'an	3	2	1	**6**	3	3	3	2	**11**
Mexico	Corredor Sian Kaán Calakmul	2	3	1	**6**	2	1	3	1	**7**
Guatemala	Volcanes Occidentales		3	3	**6**	1	2	0	2	**5**
Guatemala	Izabal Caribe		3	2	**5**	1	2	2	2	**7**
Mexico	Pantanos de Centla / Laguna de Terminos	2	2	1	**5**	3	2	0	1	**6**
Mexico	Cozumel	1	1	3	**5**	3	2	0	1	**6**
Mexico	Costa Norte de la Peninsula de Yucatan	1	1	1	**3**	1	1	2	2	**6**
Mexico	Sierra de Ticul - Punto PUT		1	1	**2**	2	2	2	1	**7**
Mexico	Humedales Costeros de Chiapas	0	2	1	**3**	1	1	2	1	**5**
Mexico / Belize	Rio Hondo	1	1	0	**2**	1	1	3	1	**6**
Mexico	Corredor Vallarta Punta Laguna	1	0	1	**2**	1	2	2	1	**6**
Mexico	Selvas de Tabasco	1	1	1	**3**	1	1	0	1	**3**
Mexico	Zona Huave	1	1	1	**3**	1	1	0	1	**3**
Guatemala	Alta Verapaz				**0**	1	1	2	1	**5**
Mexico	Montebello				**0**					**0**

Note: Qualitative Rank (3 = highest; 1 = lowest)

Map 3. Key Biodiversity Areas in Northern Mesoamerica



Key Biodiversity Areas

1. Selva Zoque
2. Complejo Sierra de las Minas, Motagua, Biotopo
3. Sierra Madre de Chiapas
4. Cuchumatanes
5. Lacandona
6. Laguna del Tigre
7. The Grand Peten
8. Chiquibul/Montañas Mayas
9. Bosque Mesofilos del Norte de Chiapas
10. Sian Ka'an
11. Corredor Sian Kaán Calakmul
12. Volcanes Occidentales
13. Izabal Caribe
14. Pantanos de Centla / Laguna de Terminos
15. Cozumel
16. Costa Norte de la Peninsula de Yucatan
17. Sierra de Ticul - Punto PUT
18. Humedales Costeros de Chiapas
19. Rio Hondo
20. Corredor Vallarta Punta Laguna
21. Selvas de Tabasco
22. Zona Huave
23. Alta Verapaz
24. Montebello

Appendix 4: Priority Key Biodiversity Areas, Priority Sites, Threats, Investments and Potential Interventions

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
Selva Zoque PRIORITY 1	• Media Luna. Selva mediana subperennifolia y Selva alta perennifolia en Veracruz. • Cerro de Chapultepec. Selva alta perennifolia y Selva mediana subperennifolia en Veracruz • Sierra de la Garganta. Selva alta perennifolia en Veracruz • La gringa (Oaxaca) • Espinazo del Diablo. Selva alta perennifolia, Selva mediana • Sierra de Tres Picos (Oaxaca, Veracruz). • Cuenca Alta del Corte: Selva alta perennifolia, Selva mediana subperennifolia, Bosque mesófilo de montaña, y de pino-encino, Selva baja caducifolia.	• La Selva Zoque se considera la región con mayor cantidad de especies de orquídeas en México. A la fecha se han registrado alrededor de 300 especies de orquídeas que constituyen el 27% de las especies y el 60% de los géneros registrados en todo el territorio nacional (Salazar 1997). • Potencialmente puede llegar a haber hasta 5000 especies de plantas vasculares (Martínez, com. pers). Se proponen alrededor de 900 especies de mariposas que constituyen el 45% del total de especies mexicanas (De la Maza 1997). Se han registrado 320 especies de aves (Townsend 1997) y el número de especies de mamíferos ha sido estimado en alrededor de 140 especies (Medellín 1997). De hecho, la Zoque se encuentra en el área con mayor diversidad de especies de mamíferos en el país (Arita y León Paniagua 1993, CONABIO 1998). • En la Selva Zoque se encuentran tres areas endémicas para aves (EBAS): Los Tuxtlas and Uxpanapa (013), Isthmus de Tehuantepec (014) and Northern Central American Highlands (018). Esta última EBA es la que mayor número de especies endémicas tiene en México y Centro América (Stattersfield et al. 2000). • La región ha sido designada en la categoría de “sobresaliente a nivel biorregional” en la evaluación del Banco Mundial y la WWF (Dinerstein et al. 1995). La región conocida como bosques húmedos de Tehuantepec es considerada como nivel 1 de máxima prioridad regional.	• Fragmentacion de unidad de Zoque • ingobernabilidad • Proyectos de infraestructura • Colonización silvestre en la zona de amortiguamiento de la zona de protección forestal y faunísitica ilegal • Extracción ilegal de madera • Tráfico de fauna • Pérdida de sistemas de uso tradicional • Indefinición en la tenencia de la tierra de Bienes Comunales • Expansión de la frontera agropecuaria • Apertura de caminos • Incendios forestales • Contaminación por agroquímicos	• Media inversión • FMCN: Proyecto piloto de uso sustentable y diversificado de flora y fauna silvestre • Pronatura: Plan Regional para la conservación. • Centro de Estudios para el Manejo Sustentable de los Recursos Naturales, S.C.: Prevención y control de incendios forestales • WWF: Proyecto Bosques de los Chimalapas; Educación ambiental y agroecología • Fundación Packard: varios • SEMARNAT-CONANP: Control y Vigilancia • CONABIO Conservación y Desarrollo Sustentable en El Ocote • FMCN: Conservación y Monitoreo de Aves en El Ocote • Depto. de Desarrollo Internacional de la Gran Bretaña: Reserva ecológica Campesina en los Chimalapas • CONABIO/ Fundación Ford: Tejiendo con Pita en el sureste de México • FMCN / Gobierno del Estado de Chiapas: Conservación de Áreas Naturales Protegidas mediante Estrategias de Monitoreo	• Diseñar una estrategia de gestión ambiental para establecer compromisos y acuerdos con los actores sociales locales, así como con las instancias del gobierno federal y estatal involucradas en la Selva Zoque. • Fortalecimiento del marco jurídico y de la observancia de la ley. • Diseñar una estrategia variada y amplia de mecanismos de conservación y protección de la Selva Zoque que incluya diferentes opciones y herramientas de manejo adecuado como: decretos de ANP (Uxpanapa), establecimiento de Reservas Comunales, UMAS, Programas de Manejo Forestal, etc. • Desarrollar ordenamientos territoriales, zonificación para áreas protegidas comunales y para áreas de manejo forestal, y sistemas agroforestales • Diversificar alternativas productivas incluyendo ecoturismo comunitario.

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
	• Sierra Cerro Azul (Oaxaca) • El Tolostoque. Selvas bajas caducifolias en el extremo suroeste de la región de interés (Oaxaca). • Selva del Ocote. El Ocote y su conexión de Chimalapas. Contiene selva alta perennifolia, bosque de pino oocarpa • El Retén				• Diseñar y operar un Programa Regional de Prevención y Combate de Incendios en la Selva Zoque que integre esfuerzos y recursos. • Promover un Programa Regional para la Inspección y Vigilancia de la Selva Zoque, que involucre Profepa, los gobiernos de los estados, los ONGs y las comunidades. • Fortalecer y apoyar los esfuerzos subregionales de gestión y desarrollo sustentable emprendidos por las diversas instituciones. • Atención a problemas agrarios en el área entre la porción nororiente de Santa María Chimalapa y los núcleos agrarios chiapanecos pertenecientes a Cintalapa. • Ayudar al dialogo entre las comunidades en conflicto • Evaluación y mitigación de impactos por infraestructura. Mecanismos de compensación por impactos. • Fortalecimiento de sistemas tradicionales sustentables

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
					• Fomento a mecanismos de retribución por captura de carbono. Subsidios por mantenimiento de bosques • Evaluación y Retribución por servicios ambientales. Mecanismos de conservación de tierras
Complejo Sierra de las Minas PRIORITY 2	• Sistema Sierra de las Minas-Motagua • Área de conectividad entre Sierra de las Minas y el Biotopo del Quetzal	• Incluye al monte espinoso seco de Motagua, el cual es una ecosistema único en Meso América. Abarca todo un paisaje con un gradiente altitudinal que vá de los 6 msnm hasta 3,015 msnm. El CBM no está invirtiendo en este sistema. • No ha habido fondos para el establecimiento de nuevas ANP que proteja parte de esta bioregión. • Es la fabrica de agua en Guatemala por la dimensión de la captación de agua. • En Motagua hay epífitas (Thillandsia spp.) Endémicas. • Posible centro de origen de coníferas y otras especies. • Tiene poblaciones importantes de spp. en peligro de extinción. • Zona esencial para las migraciones locales de los quetzales de Sierra de las Minas	• En el sistema Polochic la indefinición de la tenencia de la tierra ha promovido las invasiones. • Mucha presión por cambio de uso del suelo. Contaminación. • Hay minería en Sierra Santa Cruz, hay problemas por extracción petrolera en el futuro.	• Media inversión • Fundación Defensores De la Naturaleza: Administración del Distrito Motagua de la Reserva de Biosfera Sierra de las Minas.	
Sierra Madre de Chiapas PRIORITY 3	• Bosques mesófilos • Corredor Paxtal-Pico del Loro • Cerro 3 Picos. • Volcán Tacaná • El Triunfo	• Area de mayor importancia para aves migratorias. • Alta concentración Micro-endemismos. • Grandes poblaciones de Pavón, quetzal. • Mayor extensión de Bosque Mesófilo	• Expansión Frontera Agropecuaria. • Incendios forestales. • Aprovechamientos forestales no sustentables • Construcción de dos	• Media inversión • TNC: Sitio plataforma cuencas costeras de Chiapas • FMCN: Propagación de Palma Camedor Chamaedorea quezalteca • Banco Mundial: Conservación de	• Prevención y control de incendios • Evaluación de sistemas agroforestales para conservacion de biodiversidad • Diseño e implementación

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
		en México.	carreteras y caminos rurales. • Carretera Montecristo Mapastepec	Biodiversidad en la Reserva de la Biosfera El Tri unfo • FMCN / CONABIO: Conservación de Palmas y Cycadas • SEMARNAT: Brigadistas para la prevención de incendios en la Reserva El Triunfo. • Estrategia de aprovechamiento sustentable, diversificación productiva y conservación de recursos naturales en áreas comunales • Universidad Autónoma de Chapingo: La reconversión productiva en los bienes comunales • GEF, Fondo para el medio ambiente, The David and Lucile Packard Foundation, Banco Nacional de fomento exterior: Mejoramiento del hábitat en paisajes productivos y producción y comercialización de café sustentable • Campesinos Ecológicos: Reforestación	de Estrategias Regionales de Corredores de Conservación. • Evaluación y mitigación de impactos por infraestructura. • Retribución por servicios ambientales.
Cuchum-atanes PRIORITY 4	• Norte de Huehuetenango (Incluye a Cuchumatanes y Laguna Yolnabaj)	• Incluye parte de la cuenca donde nace el río Lacantún, Bosques de niebla. La biodiversidad de la región podría ser de las mas importantes en Guatemala por estar en transición entre las Selva Maya y las tierras altas. Hay poblaciones importantes de • Abies guatemalensis	• Cambios acelerados de uso del suelo por reacomodos. Incendios forestales. • Ha estado abandonada por los esfuerzos de conservación (Prácticamente no ha habido inversiones de conservación)	• Media inversión • Banco Mundial, GEF, Gobierno de Guatemala:Producción Sostenible, Conservación de la Biodiversidad, Servicios Ambientales, Administración y Gestión	

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
Selva Lacandona, Complejos I y II, Lacondonia PRIORITY 5	• Corredor Hidrológico del Lacantún (Cañadas-Sto-Domingo. Conexión con Usumacinta) • Corredor Hidrológico del Usumacinta Chiapas-Tabasco • Lagos Ocotal-Suspiro-Ojos Azules. • Sierra Cojolita • Montes Azules • Complejos I y II (Incluye las ANP San Román, Aguateca Dos Pilas, El Pucté, El Rosario, Ceibal, Petexbatún) • Parque Nacional Sierra del Lacandón	• Mayores poblaciones en Chiapas de algunas spp. amenazadas y en peligro (vertebrados). • Unico hábitat de Ara macao. • Corredor de conexión con resto de Selva Maya. • Poblaciones importantes de spp. en peligro de extinción incluyendo guacamaya roja. • Poblaciones importantes de spp. en peligro de extinción incluyendo guacamaya roja.	• Presas proyectadas: Boca del Cerro. • Invasiones en ANPs. • Incendios forestales • Conflicto social. • Indefinición en la tenencia de la tierra en periferia de Bienes Comunales. • Cambios en uso del suelo. • Pérdida de sistemas de uso tradicional. • Invasiones. • Ausencia institucional • Extracción ilegal de madera. • Avance de la frontera agrícola. • Asentamientos irregulares. • Incendios forestales. • Presas hidroeléctricas en estudio.	• Alta inversión • UNAM: Conservación y valor utilitario de Especies arbóreas; Estrategia de Producción Agropecuaria Sustentable, y conservación de los recursos • BID: Impulso a la Apicultura; Conservación de La Selva a Través del Uso y Manejo de Mariposas • U.S.AID-CI: actividades de protección, monitoreo, investigación y recreación; Fortalecimiento de la participación social en la conservación; Fortalecimiento de la educación ambiental; Establecimiento de un sistema de áreas protegidas comunitarias; Estudio de factibilidad para el desarrollo de una empresa artesanal para mujeres; Restauración ecológica y conservación; Diagnóstico de la calidad del agua; Estrategia para la integración de la red de Turismo responsable; Monitoreo. • USAID: Ecoturismo en el Usumacinta; Conservación del parque Nacional Laguna Lachúa; Conservación de la Guacamaya; Continuación del monitoreo de áreas críticas; Continuidad a la integración de la Estrategia de conservación; Capacitación en manejo de Áreas Naturales Protegidas por la Universidad Estatal de Colorado; Uso y tráfico de vida silvestre. • INI: Estudio de factibilidad del potencial turístico y Manifiesto de impacto ambiental.	• Solución del conflicto agrario. • Manejo sustentable de recursos. • Programa Forestal Eficiente • Mecanismos innovadores y eficientes de concienciación pública en el ámbito no formal. • Observancia de la ley. • Reforzar vigilancia.

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
				• Grupo Jaguares: Apoyo a la campaña de prevención de incendios, artesanías lacandonas y frijol abono. • Fundación Packard: Población y ambiente • FMCM: Campaña de difusión para la prevención de incendios • UAC: Operación de la Estación Chapul; Ordenamiento de las actividades ecoturísticas en el Monumento Natural Bonampak • TNC:Manejo del Parque Nacional Sierra del Lacandón	
Gran Peten PRIORITY 6	• Biotopo El Zotz • Complejo Mirador-Rio Azul-Dos Lagunas (Cuadrante Nor-noreste del Petén) • Zona de Uaxactún -El Zotz, Tikal • Franja Fronteriza Guatemala-Belice (Incluye El Pilar) Triangulo Nakum-Yaxhá-Naranjo **Rio Bravo, Aguas Turbias, al Norte de**	• Buen estado de conservación pero cerca de la frontera de cambio de uso del suelo. • Importante colonia de murciélagos. • Está en excelente estado de conservación (Inversión preventiva) • Impactos negativos por turismo. • El Monumento Natural y Cultural El Pilar promueve la cooperación binacional entre Guatemala y Belice. • Contiguidad con Mexico y Guatemala	• Apertura de accesos. • Carretera que gestionan Quintana Roo y Melchor de Mencos. • Sobrecaceria por xateros • Saqueo de recursos • Amenazas que tiene que ver con su situación fronteriza con Belice. • Caminos potenciales Caceria, extracion de madera ilegal, agricultura	• Alta inversión • FMCM: Agricultura orgánica; Apicultura comunitaria; Prevención de incendios con alternativas de uso de suelo; Rescate y cría de venado cola blanca • Pronatura: Proyecto Calakmul • USAID-CI : Planta de acopio de miel Yax Balam; Los viveros como una alternativa para el desarrollo sustentable; Parcelas escolares • MacArthur: Criterios e indicadores de Manejo Forestal; Participación de la Comunidad en la Conservación • CONABIO: Conservación y manejo de Cérvidos Tropicales • TNC: Educación Ambiental, capacitación y difusión; Zonificación ecológica para la Reserva de Calakmul • WWF: Proyecto Forestal Calakmul • BID: Programa de Desarrollo Sostenible del Petén • Banco Mundial: Areas Protegidas de la Comunidad Bio-Itza • KFW: legalización de tierras, el	• Urgen alternativas productivas para que la población local no deteriore estas selvas. • Parar los caminos truncal, educacion, promocion del manejo sustenible del bosque, incentivos por

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
	Rio Bravo, y el matrice alrededor Yalbac y Gallon Jug Crooked Tree • Calakmul: Corredor Conhuás-Xpuhil • Corredor Xpuhil-Arroyo Negro. • Balamkú Conhuás	Recarga de acuíferos • Selva de Guayacán.		manejo de los bosques, la promoción comunitaria y la educación ambiental. • Centro Maya: agricultura orgánica, concesiones forestales y proyectos apícolas • PROBOTEN: Manejo forestal, educación, extensión y el desarrollo de la mujer • FEDECOAG, IEPADES: Asistencia técnica agrícola, pecuaria, forestal y organización comunitaria • ACOFOP: Manejo Forestal • Cooperación española: Saneamiento Ambiental • GTZ: Proyecto Manejo Sostenible de los Recursos Naturales • UE: Legalización de Tierras • CANANKAX: Conservación y Manejo Participativo de las áreas protegidas; Manejo del Monumento El Pilar: Sistema de Monitoreo Ambiental. • CATIE: Manejo Forestal Sostenible en la RBM • CEDES: educación ambiental • ALIANZA VERDE: Fomento del turismo responsable • CI: Manejo etnobotánico, conservación y desarrollo sostenible. • FOGUAMA:Temas de la Agenda 21 • FUNDEBASE: Asistencia técnica con énfasis agrícola orgánica. • ACODES: Manejo forestal • FCG: Instalación y Monitoreo de la Plantación de Xate • FORD FOUNDATION: Forging an Integrative Management for El Pilar Archeological Reserve • Program for Belize: Protección	conservacion privada • Prevención de incendios forestales. • Supervisión de manejo de UMAs • Monitoreo de flora y fauna básica • Fortalecimiento de áreas protegidas

Area	Sitios estratégicos	Argumento o justificación	Amenazas principales	Inversiones actuales	Inversiones recomendadas (Enfoque programático)
				de los Recursos del Río Bravo; Apoyo a la Comunidad y a los Pequeños Tomadores de Decisiones en el Mantenimiento de la Conectividad Biológica; y varios mas. • Gobierno del Estado, Reserva Balam'ku	
Laguna del Tigre PRIORITY 7	Laguna del Tigre (Incluye al Parque Nacional y al Biotopo).	• Es el humedal de mayor importancia en todo Guatemala. • Hábitat importante para spp. en peligro de extinción, incluyendo guacamaya roja, jaguar, pecarí de labios blancos, cocodrilos y tapir	• Extracción petrolera. • Avance de la frontera agrícola. • Asentamientos irregulares. • Incendios forestales	• Alta inversión • Banco Mundial/PROPETEN: Manejo y Protección del Parque • FCG: La Guacamaya Roja y las Aves Migratorias como herramientas para la conservación • CONAP: Valoración Económica del Parque Nacional	
Chiquibul-Montanas Maya PRIORITY 8	**Belize** Chiquibul NP, Chiquibul NR, Mountain Pine Ridge, Vaca. Colombia Cockscomb **Guatemala** Complejos III y IV (Incluye las ANP Machaquilá, Xutilhá, Montañas Mayas)	• Integridad, los areas más biodiversas de Belice • Muchas especies amenazadas • Conserva remanentes de Bosques de Poptún (Pinus caribea). • Contiguidad con Belice (Chiquibul).	• Represa • Invasiones, agricultura, xateros	• Baja inversión • KFW: legalización de tierras, el manejo de los bosques, la promoción comunitaria y la educación ambiental. • Centro Maya: agricultura orgánica, forestales y proyectos apícolas • PROBOTEN: Manejo forestal, educación, extensión y el desarrollo de la mujer • FEDECOAG, IEPADES: Asistencia técnica agrícola, pecuaria, forestal y organización comunitaria • ACOFOP: Manejo Forestal • Vision Youth Cooperative Society: Realization of an environmental camp at the Cockscomb Basin Wildlife Sanctuary	• Parar la represa

Appendix 5: Definitions of Funding Categories Used in Investment Analysis

Best Practices. Agroecology projects, demonstration projects of silvopastoral systems, etc.
Capacity Building. Activities that enhance capacity for project implementation through training courses, experience exchange, etc.
Communication. Information diffusion to different publics
Conflict Resolution. Actions that try to mediate between different parties in a conflict to identify a consensus solution
Economic Alternatives. Implementation of productive projects of economic activities not previously used by local populations, including ecotourism, butterfly collection and edible mushroom collection, etc.
Economic Incentives. Mechanisms for protection of private lands, ecological easements, etc.
Environmental Education. Diffusion of information about biodiversity to enhance knowledge and consciousness of local populations
Environmental Services. Projects that initiate mechanisms of payments for environmental services
Financial Mechanisms. Implementation of long term funding or trust funds, focused on protected area operation or revolving microcredit loans
Forest Fires. Implementation of actions that mitigate fires, difusion of fire management techniques, financing and organizing fire brigades etc.
Land-use Planning. Projects that order and delimit productive activities in geographically defined areas.
Monitoring. The collection of biological, socioeconomic and environental impact information and the processing and diffusion of data
Natural Resource Management. Management of natural resources, for example, forestry concessions
PA Management. Activities directed at Protected Area Management through governments, NGOs or community based organizations: includes management programs, enforcement, public consultations, investments in visitor centers etc.
Planning. Activities of ordering and prioritization of actions linked with the definition of new protected areas
Planning/Mainstreaming. Actions that encourage the inclusuon of the main issues of natural reseource conservation into conventional development agendas and projects
Planning/Monitoring. Actions of follow up and supervision of projects implemented within an institutional planning framework
Policy. Projects that enhance knowledge of laws and policies, or promote changes or strengthening of the application of such laws or policies
Population. Activities that promote family planning
Project Management. Administrative costs and the indirect costs of funds and project management
Research. Investigative projects that inrease knowledge of biodiversity
Restoration. Projects of ecological restoration environmental clean up in degraded or contaminated areas
Species Conservation. Concrete actions directed to the protection of a species
Sustainable Development. Actions that implement projects for the sustainable use of non-timber forest products such as pita, xate, etc.
Technical Advisory Council. Costs of the participation of society in techncial advisory committees
Technical Assistance. Projects that extend technical services to community groups