

U.S. Fish & Wildlife Service

Wildlife Without Borders- Mexico

Summary Report
2000-2002



The U.S. Fish and Wildlife Service's mission is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. We are the only agency of the U.S. Government with that primary mission. The Service also supports the Department of the Interior's Strategic Plan to involve various partners such as State and local governments, communities, federally recognized Tribes, non-governmental organizations, and private citizens.

The Service's Division of International Conservation and its partners worldwide support these goals through cross-border cooperation to preserve the habitats that sustain migratory and endangered species. The leadership, knowledge, and cooperation of international partners is crucial to ensure the global conservation of these species and their habitats.

Cover:
Malachite (Siproeta stelenes)
Greggory Maggio

Wildlife Without Borders- Mexico

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Illustration from Bat Conservation International's storybook on migratory bats, produced with support from the U.S. Fish and Wildlife Service. See pages 7 and 16.



Mexico and the United States share a border of more than 2,000 miles, which presents many conservation challenges and opportunities. The unique biological diversity in the border region and the stopover and wintering habitats Mexico provides for migratory species makes this partnership one of special importance to the United States (the reforestation site pictured is located in Michoacan, Mexico). In this region, wildlife truly knows no borders.

Ed Rashin

Introduction

In 1994, the U.S. Fish and Wildlife Service (Service) and the Mexican Secretariat for the Environment, Natural Resources and Fisheries created the *Wildlife Without Borders-Mexico* grants program to ensure: capacity building for natural resource management in Mexico; ecosystem management via sustainable resource use; and information transfer to promote informed management and improve understanding of conservation problems. *Wildlife Without Borders-Mexico* grants promote sustainable conservation practices through training and education, information exchange and informed citizen participation in natural resource issues.

Between 2000 and 2002, the *Wildlife Without Borders-Mexico* grants program contributed \$1,522,397.00 in funding for 50 conservation projects in Mexico, which leveraged approximately \$4,104,344.00 in local in-kind and cash contributions. Capacity building, ecosystem management and information transfer were promoted through projects with universities, research centers, non-governmental organizations and on-the-ground activities with rural peasant communities and indigenous people.



Background

Mexico, one of the most important countries in the world in terms of biological richness, covers one percent of the Earth's land area, but contains about 10 percent of all the species known to science. Half of these species can only be found in Mexico. The convergence of Neartic and Neotropical biotic regions, topography, location and climate influence this extraordinary biological diversity. In addition, Mexico harbors an extraordinary richness of ecosystems and ecological diversity, including temperate and tropical forests, arid and semi-arid wild lands, alpine meadows, and wetlands. With 32 major types of vegetation, Mexico has examples of most of the Earth's recognized ecosystems.

Many of these ecosystems play a vital role in providing stopover and wintering habitats for numerous migratory species that breed as far north as Alaska and Canada and migrate south to Mexico's most remote ecosystems. Every autumn, thousands of ducks and geese, thrushes, warblers, raptors and hummingbirds congregate along the Gulf Coast from Texas to Florida in preparation for the nonstop flight across the gulf to the Yucatan Peninsula. Likewise, millions of monarch butterflies from throughout Canada and the United States converge on forests in Mexico's central mountains to winter. Sea turtles, gray whales, marine

fishes and insectivorous bats are part of this biannual migration.

Mexico and the United States share a border of more than 2,000 miles, presenting many conservation challenges and opportunities. The unique biological diversity in the border region and the stopover and wintering habitats Mexico provides for migratory species make this partnership one of special importance to the United States. The conservation of these shared resources can only be accomplished through effective international cooperation that results not only in improved sustainable natural resource practices in partner countries, but in return expands the perspectives, knowledge and skills of Service personnel, exposing them to innovative technologies they can apply to conservation programs in the United States.

To address these challenges, the Service's *Wildlife Without Borders-Mexico* initiative was established on the premise that investment in local training and education of people is the most effective way to foster the development of sound environmental policies and practices. Through *Wildlife Without Borders-Mexico*, the Service seeks to involve people at all levels in wildlife and habitat conservation, from local land owners to senior government administrators.



Capacity Building

United States-Mexico Migratory Bats Conservation and Education Initiative

Each year, during Spring and Summer, an estimated 150 million Mexican free-tailed bats emerge from their maternity colonies in a dozen caves in Texas, New Mexico, Oklahoma and Arizona. These are the populations that migrate back from wintering grounds in Mexico and play a vital role in maintaining critical ecological processes, necessary for total ecosystem health and biological diversity. These migratory bats act as pollinators, seed dispersers, and regulators of insect pests. In the U.S., farmers spend an estimated 500 million dollars annually on pesticides, yet insect pests will still destroy tens of millions of dollars' worth of crops. Without bats, the damage could be even greater: A million bats can devour ten tons of insects nightly. Unfortunately, bats are killed in massive numbers due to lack of understanding of their critical function and services.

Since 1994, Bat Conservation International, through its Program for the Conservation of Migratory Bats (PCMM), has promoted joint bat conservation activities with Mexico through the identification of migratory routes; the conservation of important bat caves; the establishment of environmental education programs in communities near these caves and along critical migratory routes; and the establishment of partnerships with local communities. Between 2000-2002, the Service, in partnership with Mexican authorities, supported the expansion of this bi-national, comprehensive environmental education and conservation program.

Activities during 2000 focused on the protection of the winter roosts of three species of pollinating bats, including the nectar-feeding Lesser and Greater long-nosed bats, federally listed as endangered

by both Mexico and the United States. Educational programs were presented at numerous schools in the Mexican states of Nuevo Leon, Tamaulipas and Michoacan, in communities near the largest and most important bat roosting caves. In the United States, educational materials were distributed to libraries, radio stations, nature centers and elementary schools throughout the Rio Grande Valley of Texas. In 2001, the program was expanded to the Mexican states of Chiapas, Jalisco, and Morelos, again focusing on communities near important roosting caves, including Cueva Trinitaria, Chiapas, the location of the largest known colony of Mexican free-tailed bats in the state. In 2002 the program concentrated on the protection of the nectar-feeding Lesser and Greater long-nosed bats in Morelos and Zacatecas, as well as research efforts related to the unique Mexican fishing bat, endemic to the islands of the Sea of Cortez.

A wide array of educational outreach material was produced and strategically distributed, including the fourth, fifth and sixth in a series of bilingual children's books and accompanying educational materials. *Seeds from Little Barbara, the Bat* explores the natural history and ecological values of fruit-eating and seed-dispersing bats in sub-tropical and tropical forest ecosystems. *Flowers for Lucia, the Pollinating Bat* highlights the ecological and economic values of pollinating bats. *Olaf and Lorenzo, the Carnivorous Bats* focuses on the fascinating life, history, habitats and conservation needs of carnivorous bats. Other outreach materials produced and distributed include a translated handbook for Mexican mine land managers, a vampire bat handbook and videotape for ranchers on the effective control of the common vampire bat, radio programs, posters, and student activity workbooks.

Left:

Counting fishing bats on an island in the Sea of Cortez, Baja California, Mexico.

Bat Conservation International



National Course for Ecological Reserve Rangers of Mexico

Mexico's nature reserves provide habitat and protection for a large number of endangered species and a vast number of migratory birds. However, no official training programs existed specifically designed to train reserve rangers, who often are the only official presence in these vital areas. These rangers are charged with enforcing regulations, interfacing with local communities and visitors, assisting researchers, and implementing management activities, all with few resources and rarely with any access to training. In 1996 the Service, in partnership with the Mexican government, launched an unprecedented training program for reserve rangers in order to develop their skills. With Service support, the Institute of Natural History of Chiapas implemented the "First Course for Rangers of the state of Chiapas" in 1996, followed by the "First Course for Rangers of Southeastern Mexico" in 1997.

In 2000, again with Service support, the Institute of Natural History expanded their regional programs to implement the "First National Course for Ecological Reserve Rangers of Mexico." Participants included park guards from 20 Mexican reserves, as well as representatives from Argentina, Brazil and El Salvador. Responding to widespread demand for a second course from reserve managers in Mexico, Central and South America, the "Second National Course for Ecological Reserve Rangers of Mexico" was implemented in 2001. Thirty rangers from Mexico's most important ecological reserves and five from Central and South America participated in this training course. Graduates of both courses received diplomas and academic credits. Topics addressed included: selected studies in conservation biology and wildlife management; environmental legislation;

ecological planning; cost-benefit analysis; public outreach; forest fire control; use and maintenance of field equipment; first-aid; ecological services; ecotourism; conflict resolution; strategic planning; environmental education; and sustainable natural resource use.

One of the most important results of these two courses has been the creation of the Mexican Association of Ecological Reserve Rangers, who have begun negotiations with the Mexican Government to institutionalize a national course. Their goal is to incorporate it as part of reserve management plans, with government funds specifically earmarked for rangers' training. These courses also have helped establish a link between Mexico and the International Association of Park Rangers, through which requests for information about the course have been received from countries such as Bolivia and Colombia. Word of this course has spread throughout Latin America and the Caribbean and the level of interest generated has helped demonstrate the need for such a course in other countries.



Left:
Field trip for rangers to El Ocote Biosphere Reserve, Chiapas, Mexico.
Institute of Natural History

Bird monitoring demonstration for course participants, Chiapas, Mexico.
Institute of Natural History

Ecosystem Management

Protecting the Monarch Butterfly Wintering Habitat through Participatory Training in Natural Resource Management

The annual migration cycle of the monarch butterfly (*Danaus plexippus*) has been described as the most spectacular in the insect world, and as a singular biological phenomenon. It is believed that this multi-generational migration may be unique among the estimated 30 million species of insects on earth. Each autumn, hundreds of millions of monarchs east of the Rocky Mountains and Great Plains converge in 10 small sites in central Mexico. Inevitably, short-term economic pressures pose a great threat to these immense masses of butterflies.

In 1986, the Monarch Butterfly Reserve was established in Mexico to protect the monarch's wintering habitat. However, the destruction of this habitat continues at an accelerated rate. Pressures include the demand from wood-related industry, lack of productive alternatives to meet the basic needs of the local communities, deforestation, soil erosion, unsustainable agricultural practices, development, and increasing tourism. The biggest challenge in conserving this habitat is providing local communities, the owners of the reserves' land, economically viable alternatives to deforestation activities.

For the past 8 years, the Service has partnered with Mexican authorities and with ALTERNARE, A.C., to support a participatory training program focused on developing the natural resource

management capabilities of local communities. Training activities include soil and water conservation, reforestation, service-related and income-generating activities such as bee-keeping; application of organic fertilizer to increase crop production; and construction of solar-powered cooking boxes and adobe houses to reduce the need for firewood. The methodology is based on a "peasant-to-peasant" training approach through which local people continue to train others, creating a "multiplier" effect and promoting the long-term conservation of the reserves' grounds. It is also based on the premise that impoverished rural communities can meet their needs while renewing the natural resource upon which they depend through collective natural resource management. Other basic principles include: cost sharing; self-reliance; community decision-making; and community organization.

Between 2000-2002, 300 additional local peasant farmers benefitted from this training, resulting in more than 800 people trained. In addition, a core group of 12 trainers has been consolidated and is expanding training to five new communities in the reserve. Two more "beginners" groups of trainers received specialized training. A training center for local peasant farmers is being built in the reserve with donated labor and material from the communities, as well as other local donors, and will be fully operational in the spring of 2003. It will serve as training and outreach center, project headquarters, and demonstration-projects site.

PROBEA uses innovative methodology to introduce environmental themes and activities promoting an earth stewardship ethic. Level 1 is an introduction to environmental education and Level 2 adds practical tools in field ecology for primary and older students. Level 3, water quality, testing and monitoring, serves the science programs in upper middle school and high school. Level 4 explains the biological diversity of the Sea of Cortés (considered one of the richest marine ecosystems in the world). This last educational module expands the previous scope of techniques by using videos as a teaching tool. The video features "Ocean Oasis", a spectacular documentary and winner of the Wildscreen film Festival's Panda Award. It also introduces the use of a teacher's guide and teaching kit, which together provide all necessary materials that guarantee the learning success of the hands-on activities. PROBEA's collaborators have been involved in environmental education collectively for more than 60 years. Together their specialties include innovative teaching techniques and higher order thinking skills, communication skills, and environmental education with an emphasis on ecology.



Students participate in the Tijuana Estuary field trip to expand their understanding of plants, birds, and animals in the ecosystem.

San Diego Natural History Museum/Baja California, Mexico



Probea ecology field trip to Las Piedras Nature Center gives teachers hands-on experience with using practical tools for earth stewardship.

San Diego Natural History Museum/Baja California, Mexico

Information Transfer

Bi-national Environmental Education Project (PROBEA)

The Tijuana River watershed provides key habitat in both the United States and Mexico for several endangered species, as well as critical water supply to the area. Likewise, the diverse ecosystems of the Baja California peninsula provide critical habitat for many endangered and threatened species of plants and animals. However, increased development and economic activity severely threaten these vital natural resources shared by the United States and Mexico. For the past 8 years the Service, in partnership with Mexican authorities and the San Diego Natural History Museum, has supported the Museum's community-based, bi-national project, PROBEA, an environmental education program for teachers and community service volunteers that promotes the joint protection of these important resources. The goal is to inspire and empower citizens along the United States-Mexico border to protect their natural resources through individual and collective community action, through the training of teachers in environmental education, and through the creation and strengthening of the networks of environmental educators and concerned citizens across the Baja California peninsula.

In 2000, PROBEA responded to a request from non-governmental organizations to bring its environmental education program to the communities of La Paz, Loreto and Mulegé in the Baja California peninsula. The project successfully identified key regional environmental education collaborators, brought them together to discuss common interests, concerns and capabilities in order to build an environmental education model for the region; established a planning process; helped build the community's capacity to design and implement environmental education. In 2001, the State Educational System of Baja California requested workshops to identify sustainable solutions

to some of the region's many environmental issues, and to address the lack of environmental awareness in the educational community and the general population. The project succeeded in distributing training materials to some 200 Mexican teachers and 250 community stakeholders. It conducted bio-regional field trips to refuges in the Tijuana River Watershed region for teachers and students, created a special workshop for 180 community service volunteers, and continued delivering Levels 1, 2, 3 and 4 teacher training activities throughout the region. The project also began collaborating with local organizations in Tijuana to create a multi-agency management team to deliver all of the PROBEA programs at one site, with the goal of producing a model environmental education center for the region. In 2002, PROBEA trained 100 teachers on watershed and resource conservation, implemented teacher/classroom community action projects benefiting local neighborhoods, implemented seven Level 4 workshops for 230 educators in the Baja California peninsula, and continued working to create a regional environmental education center facility in Tijuana.



Community workshop participants learning a method of creating compost.

San Diego Natural History Museum/Baja California, Mexico

Superficie total:
528,147 ha.

Fecha de decreto:
20 de enero, 1986

*Tipos de vegetación y
habitats naturales:*

- Arrecifes de coral
- Playas
- Bahías
- Lagunas interiores
- Lagunas costeras
- Cenotes
- Petenes
- Dunas costeras
- Manglares
- Pantanos
- Pastizales
- Selvas bajas
- Selvas medianas

...ro:
1,200 especies

...rias de

... de aves
... d de



Creating Linkages between Biodiversity and Sustainable Tourism: A Model Tourism Conservation Strategy for World Heritage Sites

More than ever, outdoor enthusiasts travel around the world to enjoy and explore magnificent natural areas. The money they spend can contribute to preserving these places, either directly, or through supporting local economies. As competition for open spaces and natural resources intensifies, ecotourism can provide the economic rationale to preserve rather than destroy nature's bounty. A framework for developing environmentally beneficial ecotourism is needed to provide guidelines on how to undertake a cost-benefit analysis of a potential ecotourism site, insight on how to market an ecotourism destination, and mechanisms to ensure local participation in the process.

To address these issues, in 2001, RARE Center, in partnership with the Service, Sian Ka'an Biosphere Reserve (Quintana Roo, Mexico), the UNESCO World Heritage Centre, and the United Nations Environmental Programme, launched a 4-year project to create an integrated approach to tourism planning, financial planning, community capacity-building, and infrastructure development. While Sian Ka'an was one of the first parks in Latin America to develop a tourism use plan, it was not immediately implemented.

Prior to implementation, three key elements were needed to ensure long-term sustainability: 1) a comprehensive business and commercial use plan to ensure sufficient revenue for covering impact mitigation and operating expenses; 2) a more comprehensive monitoring program that addresses all reserve visitation within the enhanced public use plan, avoiding tourism's negative impact on the reserve's biodiversity and proving that a positive link can be created between tourism and

biodiversity in Sian Ka'an; and 3) a long-term strategy to build the capacity for reserve staff and local community cooperatives so that local people benefit from economic alternatives generated by ecotourism.

In 2001, efforts focused on gathering baseline data and mapping threats, factors, and possible activities that could aid in addressing the threats to the reserve's biodiversity, and designing a comprehensive work plan for the project, with an overall goal, specific objectives, and a series of activities to guide the project's 4-year span. Following the initial assessment and planning phase, the project produced several accomplishments. To transfer public use planning skills to Sian Ka'an staff, RARE produced a draft public use training manual and developed the first training course. A reserve staff member was hired as Sian Ka'an public use coordinator, and attended the training course with representatives from three other Latin American World Heritage sites. Following the training course, the coordinator began developing a work plan for revising the site's current public use plan.

These activities laid the foundation for subsequent focus on community training and education, including: an ecotourism promotor course designed to train local people in basic skills such as product development, enterprise management, and impact mitigation; a nature guide training course that will prepare individuals to work as interpretive nature guides, park rangers and ecotourism service providers; and an educational campaign to raise local awareness of the importance of preserving Sian Ka'an as a world heritage site.

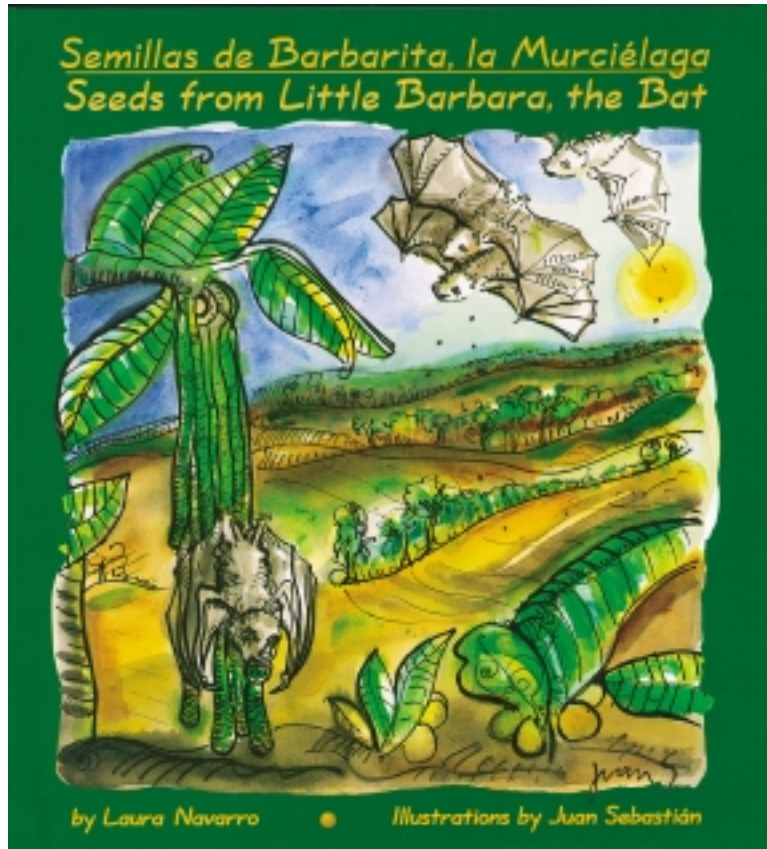
Left:
Sian Ka'an Biosphere Reserve was one of the first parks in Latin America to implement a tourism use plan for conservation.

Rare Center

Projects Funded by Program Area

Fiscal Years 2000 - 2002

Key: *Project Name*; Partner Organization; Project Location. U.S. Fish & Wildlife Service Funds; **Matching Funds**; (Grant ID number)



Cover of a storybook, produced with support from the Wildlife Without Borders Program, on fruit eating and seed dispersing bats.

Bat Conversation International

Capacity Building

U.S.-Mexico Migratory Bats Conservation & Education Initiative; Bat Conservation International, Inc.; Nuevo Leon, Tamaulipas & Michoacan, Mexico. \$20,000 + **\$184,000** (0-G539), \$20,000 + **\$167,500** (1-G980), and \$20,000 + **\$168,800** (2-G206)—This initiative, designed to protect the winter roosts of migratory bats, including the endangered nectar feeding lesser and greater long-nosed bats, through conservation action and environmental education, focuses on the importance of bats in maintaining critical ecological processes, necessary for ecosystem health and biological diversity.

Master's Degree Program in Wildlife and Conservation Management and the International Course on Wildlife Conservation & Management; Colegio de Posgraduados; San Luis Potosi, Mexico. \$35,000 + **\$320,800** (0-G617) and \$30,000 + **\$45,800** (1-G840)—These two projects supported six scholarships for students in CP's Master's Degree Program in Wildlife Conservation and Management, and provided partial support for the 7th and 8th International Course on Wildlife Conservation and Management.

Assistance to Mexican Agencies in Wetland Conservation and Management; Colegio de Posgraduados; Mexico City, Mexico. \$16,790 + **\$30,208** (1-G065)—This project supplemented the procurement of professional services from a Mexican expert on wetlands to assist Mexico in implementing the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR) in Mexico. Mexico has been a signatory of the RAMSAR Convention since 1986 and represents the North American region in the Convention's Standing Committee.

Reinforcement of Inspection and Monitoring of Ports, Airports and Border Posts; CONABIO; Mexico, D.F. \$44,000 + **\$35,050** (2-G202)—This project supported the development and implementation of a specially tailored short-term course designed to strengthen the capacity of Mexican seaport, airport and border inspectors to stop illegal wildlife trade. The intention is for this course to be offered annually to inspectors.

Master's Degree Program in Wildlife Conservation and Management; Instituto de Ecología, A.C; Veracruz, Mexico. \$23,194 + **\$75,000** (0-G567) and \$30,000 + **\$90,000** (1-G819)—Since 1996, the Instituto de Ecología has partnered with the Service to develop their Master's Degree Program in Wildlife Management, designed to develop Mexican expertise in that area. These two

projects supported 4 full-time student scholarships and the purchase of equipment for the student computer laboratory.

National Course for Ecological Reserve Rangers of Mexico; Instituto de Historia Natural; Chiapas, Mexico. \$26,800 + **\$17,770** (0-G568) and \$31,380 + **\$17,790** (1-G826)—Building upon its three successful previous regional courses, IHN conducted the first and second national courses specifically designed to develop the management skills of Mexico's ecological reserve rangers.

Course in Social Participation and Sustainable Development for Natural Resource Managers; Pronatura Chiapas, A.C.; Chiapas, Mexico. \$50,027 + **\$54,875** (2-G445)—This grant supported a project for the development and implementation of a 4-week course in conservation outreach for individuals involved in the management of protected areas in southeastern Mexico. The course modules addressed participatory methodologies; planning; communication and training skills; outreach; and conflict resolution techniques, among others.

Training in Wildlife Management at the Calakmul Biosphere Reserve; Puck-Xic-Kan, A.C.; Quintana Roo, Mexico. \$24,000 + **\$60,000** (0-G618)—Training in natural resource management and biodiversity conservation was provided to members of the ejido El Refugio, made up of local people living in and around the Reserve. Activities included four workshops where the distribution of educational material emphasizing the importance of the Reserve's natural resources was distributed to local communities.

Conservation Through Pride Campaign at the El Triunfo Biosphere Reserve; RARE Center for Tropical Conservation; Chiapas, Mexico. \$35,920 + **\$49,237** (0-G538)—This project focused on incorporating local residents into the Reserve's wildlife conservation and protection program through the creation of community pride for their surrounding natural resources. Upon consultation with the local people, RARE selected the quetzal as the campaign's flagship species, which was then integrated into educational activities designed to raise awareness and local involvement.

Conservation Through Pride Campaign at the Rio Lagartos and Ria Celestun Reserves; RARE Center for Tropical Conservation; Yucatan, Mexico. \$25,000 + **\$75,784** (2-G211)—This project focused on incorporating local residents of the Ria

Lagartos and Ria Celestun Biosphere Reserves into the Reserves' wildlife conservation and protection program through the creation of community pride for their surrounding natural resources. Residents participated in educational activities designed to raise awareness and local involvement.

Training Workshop for Natural Resource Managers of Oaxaca; SERBO, A.C.; Oaxaca, Mexico. \$10,000 + **\$57,000** (2-G203)—This grant supported a two-day training workshop for at least 50 local groups in project development, implementation, monitoring and evaluation, organizational skills, and fund-raising, in order to increase their capacity to conserve the natural resources of Oaxaca.

Building State Capacities For Environmental Education; Sociedad de Historia Natural; Baja California Sur, Mexico. \$26,700 + **\$30,000** (1-G979)—In order to implement recent modifications to state legislation calling for the introduction of environmental education in the state's official curricula, this project aimed to help develop of the new curricula, provide training to local teachers in areas adjacent to the region's protected areas, and to produce corresponding educational and outreach materials.

Training Program In Natural Resource Management; UCIZONI, A.C. ; Oaxaca, Mexico. \$39,000 + **\$33,300** (0-G556)—This training program was designed for members of UCIZONI, a local organization of indigenous people who manage critical forest habitat in the Uxpanapa- Chimalapas region. Training focused on promoting sustainable natural resource use, thus promoting the conservation of this critical area.

Wildlife Management Training for Government Officials; Unidos para la Conservacion, A.C. ; Nationwide, Mexico. \$78,000 + **\$230,000** (0-G554)—This was the second in a series of short-term training courses in wildlife management principles and practices, this course aimed to strengthen the wildlife management capacity of Mexican government officials. It focused on management of Mexico's southern tropical ecosystems, and provided training for state-level wildlife agency representatives.

Master's Degree Program in Ecosystem Management; Universidad Autonoma de Baja California; Baja California, Mexico. \$30,000 + **\$124,470** (1-G822)—This Master's degree program is based on a practical, applied approach focusing on the ecosystem as the fundamental

Projects Funded by Program Area

FY 2000 - 2002
(continued)



Project leaders for seabird colonies protection project Pacific Islands, Mexico.
Island Conservation and Ecology Group



A demonstration on vegetable gardening conducted during a community workshop in natural resource management at the Monarch Reserve, Michoacan, Mexico.

Alternare, A.C.
20

conservation unit. Its orientation is defined by issues rather than by disciplines, therefore promoting the effective integration of multi-disciplinary strategies with ecosystem management. This project provided six scholarships for graduate student thesis research, addressing topics relevant to the management of arid ecosystems and wildlife.

*Training in Natural Resource Management for Regional Organizations of Peasant Farmers; UNORCA, A.C.; Nationwide, Mexico. \$57,414 + \$37,380 (1-G824) and \$30,000 + \$35,000 (2-G198)—*The 2001 grant for this project was the third in a series of training programs in sustainable natural resource management that benefits UNORCA's 200,000 members from associations in 20 of Mexico's 32 states. Training was provided to 120 promoters and was intended to build upon the empirical knowledge of peasant farmer groups while developing their skills in sustainable resource use. The 2002 project supported the creation of UNORCA's National Peasant Biodiversity Council, that will provide guidance to members on sustainable natural resource use and receive member input regarding conservation needs and priorities.

Ecosystem Management

*Protecting the Monarch Butterfly Wintering Habitat through Participatory Training in Natural Resource Management; ALTERNARE, A.C., Michoacan, Mexico. \$75,000 + \$190,667 (0-G555), \$98,770 + \$287,188 (1-G823), and \$49,500 + 218,694 (2-G196)—*This on-going training program was designed to develop the capacity of local communities in and around the Special Biosphere Reserve of the Monarch Butterfly to sustainably manage and conserve the wintering and breeding habitat of the Monarch butterfly. Training focuses on providing economically and environmentally viable alternatives to activities that result in deforestation.

*Conservation of the Tropical Rainforest of Northeast Chimalapas; CADEPI, A.C.; Oaxaca, Mexico. \$35,000 + \$44,563 (2-G195)—*This project supported a short training course in natural resource management for the local indigenous communities residing in the tropical rainforest of the Uxpanapa-Chimilapas region.

*Surveys of Baird's tapir, white-lipped peccary and collared peccary in the Montes Azules Biosphere Reserve; Colegio de la Frontera Sur (ECOSUR), Chiapas, Mexico. \$8,800 + \$27,750 (0-G553)—*This research project was designed to determine distribution, abundance, home range and movement

patterns of the peccary populations in Montes Azules B.R. Results of research were used to produce a recovery plan, presented to Mexican authorities and used as a basis for further conservation measures and education efforts for local communities.

Evaluation of a No-take Areas Pilot Program in the Bahia De Loreto National Park; Comunidad y Biodiversidad A.C.; Sonora, Mexico. \$15,000 + **\$83,075** (2-G204)—This grant supported a project to gather data to design a no-take area network for use as a management tool to ecosystem recovery in the Loreto Marine Park, and as a model to protect marine biodiversity in other areas of Mexico.

Population and Feeding Ecology of Seabirds in the Gulf of California; Conservacion del Territorio Insular, A.C.; Baja California Sur, Mexico. \$25,000 + **\$63,200** (2-G194)—This was a project to protect the endangered bird species on the islands of the Gulf of California through monitoring population and feeding ecology. Data was used to predict the catch per unit effort of the Pacific sardine fishing fleet, in order to design a management plan for these endangered birds.

Short Course on Wildlife Management of Grasslands in Northern Mexico; Instituto de Ecologia, A.C.; Durango, Mexico. \$16,086 + **\$18,100** (0-G621)—Training provided by this project focused on northern Mexico's extensive grasslands by promoting wildlife management practices among ranchers in that region, whose lands provide important endangered wildlife habitat. Thirty individuals, including students, rural peasant producers, ranchers' associations, private land owners and representatives from Mexico's wildlife management and enforcement agencies, participated in this 2-week course.

Conservation of the American crocodile (Crocodylus acutus) at Sumidero Canyon National Park; Instituto de Historia Natural; Chiapas, Mexico. \$5,045 + **\$60,000** (0-G619)—Threats to this endangered species (CITES, Appendix I) include hunting, habitat loss, incidental take and ecotourism-related disturbances to habitat. Results of this project, focused on the conservation and protection of this species, included a protection plan for the park population, training for park guards, educational outreach activities at local schools and the rescue and incubation of eggs for eventual release.

Pacific Island Reserves; Island Conservation and Ecology Group; Pacific Islands, Mexico. \$22,055 + **\$85,550**

(2-G212)—This project focused on the protection of the seabird colonies of the islands of northwest Mexico, including 36 species and subspecies of migratory seabirds, through the development of a management plan to serve as the basis for proposing these islands as a protected area.

The Monarch Overwintering Area Reforestation Project at the Special Biosphere Reserve of the Monarch Butterfly; Michoacan Reforestation Fund; Michoacan, Mexico. \$30,000 + **\$71,847** (1-G978)—This project is part of an ongoing reforestation project to provide for the long-term protection of the threatened Oyamel forest ecosystem and by extension, the overwintering habitat of the Monarch butterfly. Training in reforestation techniques was provided to peasant farmers living in the reserve and a sustainable forest products industry, managed by the local communities, has been established.

The Rio Laja Wetlands Protection Project; Salvemos al Rio Laja, A.C.; Guanajuato, Mexico. \$27,560 + **\$163,957** (1-G066)—In order to protect a vital migratory bird habitat in Central Mexico, this project was designed to restore the Rio Laja watershed through the introduction of riparian restoration methods to local residents, and by training Mexican professionals in watershed restoration techniques.

Environmental Education in the Hualtepec Region of Hidalgo; Sendero Verde, A.C.; Hidalgo, Mexico. \$10,000 + **\$11,200** (2-G201)—This grant supported an environmental education and outreach project for Mesquital Valley communities to raise local awareness, and to involve them in the conservation and restoration of the Valley's temperate forest and its biodiversity.

Indigenous Community Wildlife Management in the Proposed Protected Area of Pino Gordo; Sierra Madre Alliance; Chihuahua, Mexico. \$42,500 + **\$75,400** (2-G193)—This training program for local indigenous Tarahumara communities in natural resource management was based upon traditional use and values. This project also resulted in the development of a management plan for a proposed nature reserve in Pino Gordo, Chihuahua.

Monitoring the Gray Whale in Mexico; Universidad Autonoma de Baja California; Baja California Sur, Mexico. \$30,000 + **\$66,000** (2-G200)—This research project to gather data on the gray whale provided Mexican managers sound information on

Projects Funded by Program Area

FY 2000 - 2002
(continued)

which to base management decisions for the protection of this endangered species.

Sustainable Use of Herpetofauna in 6 Municipalities of Tlaxcala; Universidad Autonoma de Tlaxcala; Tlaxcala, Mexico. \$9,000 + **\$12,070** (2-G197)—This survey of the resources of the state of Tlaxcala resulted in the production of an inventory of amphibians and reptiles to be used in the development of a conservation and management plan for these species.

Information Transfer

Bio-regional Strategic Planning Meeting for Neotropical Cat Protection and Recovery; Cat Action Treasury; United States. \$15,000 + **\$16,000** (2-G213)—This grant supported a three-day strategic planning meeting in northern Mexico with the participation of national and state resource agencies, NGOs, academic institutions and local organization from the United States and Mexico. The meeting resulted in the development of conservation initiatives to protect endangered Neotropical cats and their habitats in the United States-Mexico border region.

Training for Environmental Extension Workers in the Sustainable Use of Natural Resources; Centro Campesino para el Desarrollo; Tlaxcala, Mexico. \$31,000 + **\$31,805** (2-G205)—This on-going training providing specialized training in natural resource management to rural peasant groups in Mexico is continually expanding to provide “peasant-to-peasant” training methodology to new sites in Mexico. This project was designed to increase organizational skills by providing specialized training to extension leaders.

Participation of Border State Agencies in Service-Related Activities in Mexico; International Association of Fish & Wildlife Agencies; United States and Chiapas, Mexico \$10,000 + **\$5,600** (0-G705)—This project was designed to help border state agencies attend the Canada/Mexico/United States Trilateral Committee Meeting, giving states an opportunity to participate in discussion and coordination of Service projects in their region. Also provided for participation of state representatives in monitoring current Service projects in Mexico.

Short Course (diplomado) on Geographic Information Systems; Instituto para el Desarrollo Sustentable en Mesoamerica, A.C.; Chiapas, Mexico. \$25,000 + **\$24,600** (1-G064)—Through this grant training was provided for Mexican state and federal government officials and natural resource managers in the use of GIS and its applications as a valuable planning tool for natural resource conservation and management activities. The diplomas for the course were certified and issued by the state of Chiapas.

Monarch Population Dynamics Meeting and Data Synthesis on Population Biology for Researchers; Monarch Watch, c/o University of Kansas; United States \$21,352 + **\$56,966** (1-G844)—This meeting focused on monarch butterfly biology and ecology in order to identify research priorities on which to base conservation actions. Seventy-five researchers from Canada, Mexico and the United States participated in the meeting and associated workshop.

Decision-Makers Course: Mexico and the U.S. Sharing Wildlife and Collaborating to Conserve It; Pronatura Noreste, A.C.; Nuevo Leon, Mexico. \$20,000 + **\$4,300** (0-G707)—This project developed a course curriculum for Mexican and United States decision-makers and conducted a test run of the course. The course was designed to provide information on the importance of the shared natural resources and on the framework of implementing conservation in Mexico.

Creating Linkages between Biodiversity and Sustainable Tourism in Sian Ka'an Biosphere Reserve; RARE Center for Tropical Conservation; Quintana Roo, Mexico. \$35,000 + **\$83,300** (1-G825)—RARE, in coordination with Sian Ka'an's staff and local NGO Amigos de Sian Ka'an, conducted a project to link tourism and conservation by creating an integrated approach to public use planning that ensures mitigation of tourism impacts, creation of local economic opportunities and the generation of income for reserve management activities.

PROBEA Bi-national Environmental Education Project; San Diego Natural History Museum; Baja California South

and North, Mexico. \$24,720 + **\$39,370** (0-G543), \$49,000 + **\$49,000** (1-G999), and \$40,000 + **\$164,068** (2-G208)—This community-based bi-national environmental education collaboration focused on empowering citizens of the United States-Mexico border region to alleviate non-point source pollution through individual and community action. The program used an innovative methodology of advanced teaching techniques to introduce environmental themes and activities, including a K-12 watershed-based curriculum for schools, a training program for teachers, forums for public policy discussions and a program on community sustainability.

Community-based Monitoring and Riparian Restoration in the Santa Cruz River; Sonoran Institute; Sonora, Mexico \$30,000 + **\$57,435** (2-G207)—This grant supported a project to monitor and restore riparian corridors along the Santa Cruz River, and to implement education and conservation activities with schoolchildren living in the watershed.

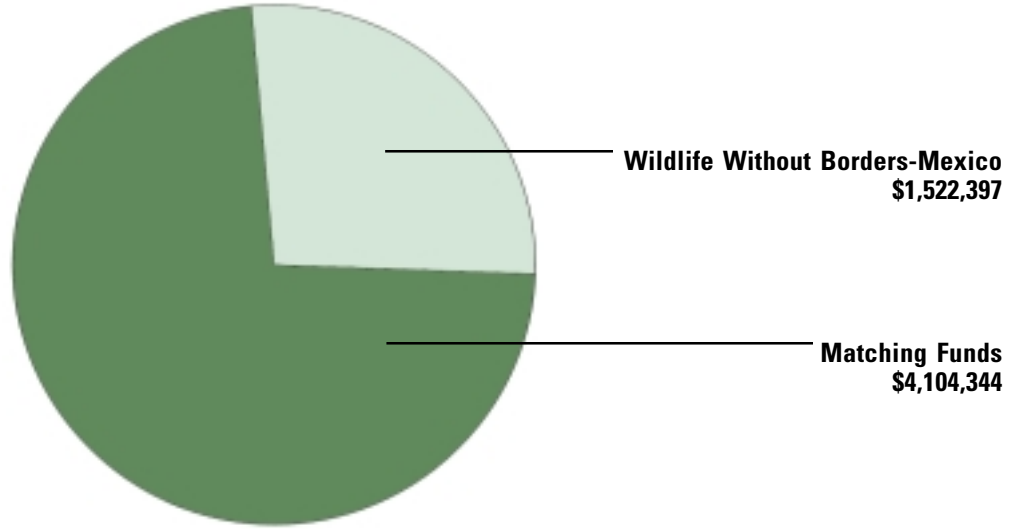
United States.-Mexico Collaboration to Raise Public Awareness of Conserving Shared Wildlife; Unidos para la Conservacion, A.C.; United States and Mexico. \$13,000 + **\$95,000** (0-G620)—This project resulted in the production and distribution of a bilingual report on joint conservation and management efforts between the Service and the Mexican Ministry of the Environment (SEMARNAT) between 1994-1999. Report was distributed to more than 1,500 resource managers, researchers, decision-makers and educators in the United States and Mexico.

GIS Training Program for Personnel of the Sian Ka'an Biosphere Reserve; University of Florida; Quintana Roo, Mexico. \$15,000 + **\$27,875** (2-G210)—This project was designed to assist in the creation of an integrated hydrological/ecological monitoring program for the Sian Ka'an Biosphere Reserve through the training of Mexican resource managers and scientists in Geographic Information and Global Positioning Systems.

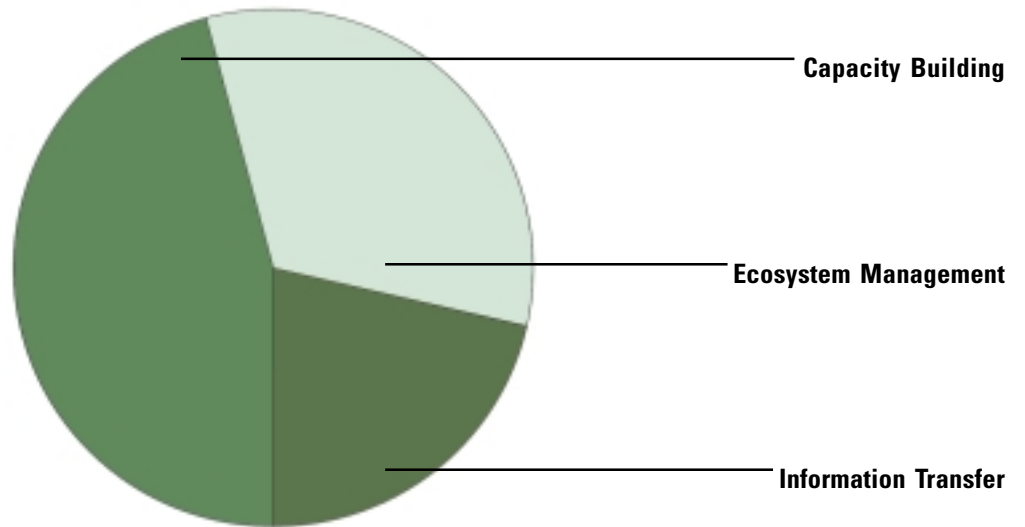
Distribution of Funds

FY 2000 - 2002

Grant and Matching Funds



Program Areas



Wildlife without Borders-Mexico Partners

FY 2000 - 2002

Baja California North

San Diego Natural History Museum
Universidad Autonoma de Baja California

Baja California South

Conservacion del Territorio Insular Mexicano, A.C.
San Diego Natural History Museum
Sociedad de Historia Natural
Universidad Autonoma de Baja California

Chiapas

Colegio de la Frontera Sur
Instituto de Historia Natural
Instituto para el Desarrollo Sustentable en Mesoamerica, A.C.
International Association of Fish and Wildlife Agencies
Pronatura Chiapas, A.C.
RARE Center for Tropical Conservation

Chihuahua

Sierra Madre Alliance

Durango

Instituto de Ecologia, A.C.

Guanajuato

Salvemos al Rio Laja, A.C.

Hidalgo

Sendero Verde, A.C.

Michoacan

ALTERNARE, A.C.
Michoacan Reforestation Fund
Bat Conservation International

Nationwide, Mexico

Colegio de Posgraduados
CONABIO
Unidos para la Conservacion, A.C.
UNORCA, A.C.

Nuevo Leon

Pronatura Noreste, A.C.
Bat Conservation International

Oaxaca

CAPEDEI, A.C.
SERBO, A.C.
UCIZONI, A.C.

Pacific Islands

Island Conservation and Ecology Group

Quintana Roo

Puck-Xic-Kan, A.C.
RARE Center For Tropical Conservation
University of Florida

San Luis Potosi

Colegio de Posgraduados

Sonora

Comunidad y Biodiversidad, A.C.
Sonoran Institute

Tamaulipas

Bat Conservation International

Tlaxcala

Centro Campesino para el Desarrollo Sustentable, A.C.
Universidad Autonoma de Tlaxcala

Veracruz

Instituto de Ecologia, A.C.

Yucatan

RARE Center for Tropical Conservation



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Summer 2003

