Dear Friend of the Environment:

Preserving Belize’s lush tropical forests by supporting unique research on mahogany regeneration…helping more than 1,132 small-scale Mexican farmers pursue best-conservation coffee practices…saving cloud forests and protecting such critically endangered species as the quetzal, ocelot, and jaguar…and ensuring farmers and their families a fair living wage for their hard-earned labor.

These are just some of the conservation blessings made possible by the support of Arbor Day Foundation members and friends. Since 1992, the Foundation’s Rain Forest Rescue® program has helped preserve the vital region sometimes called “the lungs of the planet.” Rain forests are home to countless unique wild species, and to a beauty found nowhere else on earth…to plants with cancer-fighting properties, and to many others with proven pharmaceutical powers…to vast stores of freshwater…to exotic fruits, and woods of rare beauty. Many of our other daily comforts come from the rain forest as well. Even the coffee and cola we drink are gifts of the rain forest.

But in the quest for prized food, wood, and other resources, nearly 100,000 acres of tropical forest are destroyed every day. This leads to the loss of many species and the depletion of the region’s thin soil, which depends on dense vegetation for nutrients and erodes quickly once the trees are cleared.

With Arbor Day Foundation member support, Rain Forest Rescue is helping people across America have a positive impact on these irreplaceable lands. Since its founding, Rain Forest Rescue has preserved nearly two billion square feet of land and offered an alternative to short-term gain at the expense of long-term devastation.

This report brings you current, detailed information about our work in saving the world’s rain forests—from the mahogany forests of Belize, to Mexico’s understory coffee plantations and protected ecosystems, to the palm tree forests of Peru, and the vast freshwater wetlands of Brazil. Thank you for your interest in Rain Forest Rescue.

Sincerely,

John Rosenow, President
The National Arbor Day Foundation
Introduction
The National Arbor Day Foundation supports The Nature Conservancy and its partner Programme for Belize in protecting and maintaining the integrity of the Rio Bravo Conservation and Management Area. This is accomplished through direct site protection, ongoing research, and the application of agroforestry in promoting alternative land use practices in buffer communities.

Project Activities

Mahogany Research and Forest Management
With Foundation support, work continues on research in mahogany regeneration. While mahogany is a crucial forest product in Belize, little research has been done on regeneration, making the Rio Bravo long-term research site even more important. Foundation support made possible increased staffing, especially of the Programme for Belize forester and several interns. Starting out on its tenth consecutive year, Programme for Belize conducted timber extraction in 2004, based on data collected from the Foundation. To obtain this data, 410 hectares and seven commercial species were harvested to maintain the viability of the biological diversity. A recent audit also determined that Programme is fulfilling the conditions of a Forest Certification.

Site Protection
Key to the survival of Rio Bravo is community education, outreach, and training. The Arbor Day Foundation also funds vital protection activities by the Ranger Force, a group charged with patrolling the region and enforcing environmental management regulations. Over the past year, the ranger force demarcated and cleaned property boundaries and placed boundary-marking signage. They also participated in joint patrols with other regional forces and pursued additional education in skills related to their protection work, including fire detection and suppression.

Agroforestry and Nursery Projects
Agroforestry, vital to sustainable production in the region, has received much needed support from The National Arbor Day Foundation. This backing has provided nursery materials, training, and technical assistance to farming communities practicing agroforestry. Foundation contributions also made possible training in plant propagation techniques and alternative crop management, as well as training and the acquisition in bee-hives and honey production. Technical assistance has been provided to community members, and an agronomist was hired to provide technical training and oversight in the hot pepper production system.

Community Outreach
Training was conducted with communities involved in agroforestry and extended to surrounding communities that were interested in the program. The training area farmers receive is not only in line with the Government of Belize’s poverty alleviation strategy, but also teaches them how to ease the stresses the communities place on
their natural resources. Sessions on small business management, bookkeeping and reporting have also been given in these instructional groups.

**Conclusion**

The National Arbor Day Foundation is committed to working with The Nature Conservancy in resisting the pressure on the vital natural resources of the Rio Bravo Conservation and Management Area. This is being accomplished in part by providing income-generating options through education, training, and the establishment of sustainable agroforestry systems. Agroforestry development gives landowners and farmers in communities near Rio Bravo the tools to maximize the productivity of their land, increase land value, increase sustainability, and diversify crop production.
Chiapas, Mexico

Diversification of Coffee Fields Through
the Planting of Native Tree Species

Introduction

The National Arbor Day Foundation continues its support of Conservation International’s work to preserve vast areas of natural habitat and increase shade coffee production. Over the past years, this effort has recorded significant gains—including helping raise the price participating farmers receive for their coffee and greatly increasing international coffee sales. The project is also helping conserve the biologically diverse agroforestry systems of the traditional coffee farms in and around the El Triunfo Biosphere Reserve in the state of Chiapas, Mexico. El Triunfo is a 119,000 hectare reserve in the southeast of the Sierra Madre de Chiapas that contains ten distinct forest types, ranging from the perennial tropical forests to the high altitude cloud forests. The area is home to critically endangered species, 300 species of birds, 45 types of reptiles, and 30 species of mammals.

Undertakings like Conservation International’s Sustainable Coffee Initiative support traditional, sustainable agroforestry instead of more technified, ecologically damaging coffee production. A key step in this direction is planting native coffee and shade tree species, which have the added benefits of providing better habitat for local species, improving the region's overall watershed capacity, and producing such important products as fruits, nuts, fuel wood, and construction and roofing materials. Arbor Day Foundation support has helped establish and expand the production of local tree nurseries, educate a growing number of participants on proper planting techniques and care of seedlings, and distribute more seedlings to farmers for planting in their coffee fields. The Foundation support also helped in the pilot testing of the farmer field school model and methodology and in the advancement of the farm planning and monitoring process.

Project Activities

Helping more small-scale farmers maintain their traditional coffee growing culture

By working with farmers in the region on all stages of coffee production, Conservation International helps participants achieve economic independence. This ensures both long-term economic security of the farmers and helps reduce the pressure for them to advance further into the El Triunfo Biosphere's core zones. With Arbor Day Foundation support, a growing number of farmer cooperatives is now engaged in the coffee project, and the number of participating farmers has shown remarkable growth, with more than 1,132 small-scale farmers currently involved. This work was also advanced by a new training center with a reforestation nursery and hands-on demonstrations of coffee field diversification and better coffee quality. The nursery can produce 50,000 shade tree seedlings and coffee plants for distribution to participating farmers. Farmers are taught best conservation practices, such as clean coffee processing and reforestation, which help the farmers cultivate their coffee with minimal impact on the surrounding ecosystems.

Creating a team of conservation coffee extension officers

A team of extensionists has now been trained to play a key role in assessing farmer needs, promoting better agricultural management techniques, and increasing market awareness among growers. They also help farmers implement low-impact agricultural techniques and train community-based promoters in conservation practices.
These promoters then train others who are able to continue this important educational work. Funding by the Foundation has also helped develop a business plan that will allow for the farmers to apply the best management practices.

**Designing and implementing technical courses and educational materials**

With Arbor Day Foundation support, Conservation International has helped farmers and local staff design a series of courses to provide hands-on training in conservation-minded coffee production. On average, participating farmers yielded 76% above the prices of non-participating farmers. Biodiversity conservation is another important goal of these courses; this year 11,641 trees were planted by these farmers. Demonstration areas have been designed to model best-conservation techniques, including soil-saving practices, production of organic fertilizers, cover crop and green manures usage, ecological coffee wet-processing methods, and apiculture.

**Distributing coffee and native shade tree seedlings**

Arbor Day Foundation backing has helped create a training center that includes a tree nursery to produce seedlings for distribution from satellite community nurseries. Recent farm evaluations showed that over 10,000 shade tree seedlings were identified by farmers in their coffee fields. The program helps promote sustainable shade coffee production as it preserves fragile ecosystems and protects habitat on which many species depend for survival.

**Conclusion**

Diversifying coffee fields through the planting of native tree species and through successful marketing and outreach strategies is helping promote sustainable agroforestry systems instead of technified, ecologically damaging methods. Diversification of coffee fields provides better habitat for local species, improves the region's overall watershed capacity, and produces many other important products. National Arbor Day Foundation support is making possible long-term economic and institutional viability of the farmer cooperatives, with a growing number of fields under conservation coffee production practices, an expanding number of participating farmers, and hundreds of thousands of acres of precious cloud forest ecosystems now under protection.
Campeche, Mexico
Sustainable Forest Management on the
Calakmul Biosphere Reserve in the Maya Forest

Introduction

During the past year, Arbor Day Foundation member support has helped turn a pilot effort to strengthen forest management planning and practices in this area into a model with potential to be implemented throughout southern Mexico. Arbor Day Foundation backing has made it possible for the Nature Conservancy and its partners Pronatura Peninsula de Yucatan and Tropica Rural Latinoamericano to develop a sustainable forest management model for several Mexican ejidos (farming communities) on the Calakmul Biosphere Reserve. One result is a technically sound, environmentally benign, and socially acceptable forest management plan adaptable for other forested ejidos in the region. The model provides training to members of the ejidos in low impact logging, timber production and utilization, and marketing of forest products based on lessons learned from years of experience in other Rain Forest Rescue programs, such as those in Chiapas, Mexico and Rio Bravo, Belize.

Located on the northern extreme of the largest tropical forest in the Americas, except for the Amazon, the 6 million-acre Maya Forest is home to agriculturally oriented communities that have historically relied on slash-and-burn practices to keep farm land going, placing stress on the forested resources of the Calakmul Biosphere Reserve. This 1.8 million-acre reserve is slightly larger than Delaware, and contains several archeological centers.

Calakmul is made up of the largest tracts of tropical forest in Mexico. It is a mix of old and medium growth, lowland forests and grassland, making the area a refuge for a variety of animals, including endangered species like the jaguar, puma, tapir, and howler monkey. More than 230 bird species have been recorded in Calakmul. Part of the Mesoamerican Corridor, Calakmul connects the Yucatan Peninsula and northern Guatemala, allowing migration of species between habitats.

Populated primarily on the eastern side of the reserve, Calakmul is home to nearly 24,000 Mayans residing in 72 settlements. They rely on timber extraction, commercial agriculture, ranching, honey production, hunting, and tourism to provide a living. Commercial logging began in the area in the 1920’s with the construction of a highway to transport harvested mahogany and Spanish cedar logs to the coastal cities of Mexico for export. Foreign and national logging companies were awarded long-term concessions, which over time left the hardwood forests commercially and biologically depleted.

The threat to the region is exacerbated by additional settlement pressure, leading to greater harvesting of timber and accelerated conversion of tropical forest to unsustainable forms of agriculture and ranching. One result is that unplanned logging is prevalent in many of Calakmul’s ejidal communities and continues to be a major economic resource. Other issues to address in the process of creating a sustainable forest management program include habitat fragmentation caused by ranching, farming, and road construction; and reduced flora and fauna populations from slash-and-burn agriculture, hunting, and illegal timber extraction.

On the Calakmul reserve, it is important both to preserve land and to develop strategies to protect biodiversity across larger landscapes than previous Rain Forest Rescue projects. With Arbor Day Foundation support, the
forest owners are taking part in a planning process that will meet the ejidal members’ economic needs, respect the limits of production dictated by the forest itself, and improve the health of the forest ecosystem.

**Project Activities**

**Develop a Forest Management Plan**

During the past year, a management feasibility and diagnostic study of the forestry sector in the Calakmul region was completed and reviewed by professionals in the social sciences, forest ecology, and related forest industry. From fall of 2003 to spring 2004, The Nature Conservancy formulated a forest management proposal focusing on the creation of economic incentives for farmers to practice sustainable agroforestry. Now, the Forest Management Alliance (consisting of The Nature Conservancy, Tropica Rural Latinoamericano, and Pronatura Peninsula Yucatan) is reaffirming its commitment to the plan and determining the best strategy to carry it out. The current agenda includes finalizing a business plan to consider market dynamics of forest products and value-added production options. The Alliance will then begin implementing the first phase, with the goal of having a new Ecological Forest Management Plan in place and annual operating guidelines scheduled for the 2005 harvesting season, which begins in February.

**Conclusion**

The National Arbor Day Foundation is helping The Nature Conservancy and its partners halt deforestation in and around Calakmul. One result is a stronger reserve management system and infrastructure, and the modeling of profitable and sustainable agroforestry for other areas. Supporters of Rain Forest Rescue can find satisfaction in empowering local farming communities and conservationists alike to protect the rich biological diversity of Mexico’s tropical rain forests.
Introduction
Through Rain Forest Rescue, The National Arbor Day Foundation has lent its support to the preservation of southern Mexico's El Ocote Forest Reserve. This biologically diverse area is a 119,000 acre refuge for many tropical species, including the jaguar, tapir, howler and spider monkeys, and the harpy eagle. The area is also rich in cultural diversity, sheltering several indigenous Mexican groups.

To help maintain a sustainable balance of life, the Arbor Day Foundation has worked with The Nature Conservancy and its local nongovernmental partner, the Instituto de Historia Natural de Chiapas (IHN), and with the Reserve staff of Mexico’s Instituto Nacional de Ecologia (INE). Our shared mission is to secure a community-based conservation program at the El Ocote Forest Reserve. Composed of 20 rural communities inside the reserve and another two dozen on the periphery, El Ocote is a reserve that demands an integrated approach to community-based conservation. IHN's El Ocote team recognized this several years ago and began building up its outreach program, shifting resources away from more traditional management techniques. By supporting this participatory approach to resource management, the Arbor Day Foundation has helped gain the voluntary adherence of the reserve's communities to more sustainable land-use practices.

The Parks in Peril program of the U.S. Agency for International Development (USAID) also helped develop a community-based conservation program and establish essential conservation components such as an on-site management presence at El Ocote. IHN and INE's work with local indigenous communities in the El Ocote area focuses on environmental education, environmental health, compatible resource-use practices, and technical assistance to local organizations.

Cooperating organizations carry out conservation work at El Ocote with Ejido Unions, or communal farm groups, as well as directly with individual communities. Projects that promote the sustainable management of resources are proposed at Ejido Union meetings, where participants weigh potential benefits and consequences before deciding the project's implementation. With support from National Arbor Day Foundation members, The Nature Conservancy and its partners have provided indigenous communities of El Ocote the tools, knowledge, and power they need to manage their resources sustainably.

Project Activities
Several years ago, IHN decided to concentrate on an organic, old-growth coffee project, while continuing to support other ongoing sustainable activities. With National Arbor Day Foundation backing, the project provided training, technical assistance, and low-tech inputs for the production of organic coffee to a 12-ejido farm group. Since then, with the continued support of the Arbor Day Foundation, the second phase of the organic coffee project has been completed. Highlights of this phase include:

Training and Technical Assistance to Promote Organic Coffee Production
Arbor Day Foundation support made possible the hiring of a full-time coffee cultivation promoter specializing in organic coffee farming. The promoter organizes training events and provides technical assistance to participants from key communities. More environmentally friendly principles are being applied to other production fields as well, including corn and reforestation efforts. The coffee cultivation promoter has also assisted local farmers in developing several demonstration plots, which are now operating and proving the advantages of organic coffee production.

**Organizational Development and Commercialization**

A commercialization promoter experienced in farmers’ organizations and the commercialization of agricultural products has also been hired. The promoter provides technical assistance and training to coffee producers and the Union of Ejidos leaders, in such topics as commercialization and farmer enterprise administration. The promoter also helps the individual ejido in considering the legal registration of their producer groups as a first step to certification.

**Equipment and Infrastructure**

Support from The National Arbor Day Foundation made possible the purchase of equipment needed for the production of organic coffee, including drying screens and, thanks to additional local support, cement drying patios; hand-powered de-pulpers needed to shell coffee beans; a second-hand four-wheel drive truck; and storage space for coffee bags.

**Development of the Capacities for Future Growth**

IHN and INE reserve staff are building a local organization, administration, and commercialization capacity through the Ejido Union to ensure continuity, while providing additional training. El Ocote staff members also collect information about organic coffee market characteristics.

**Conclusion**

With the support of The National Arbor Day Foundation, IHN and INE have made significant progress in conserving El Ocote's biodiversity and in implementing a breakthrough in conservation practice in Mexico. The organic, old-growth coffee project is one of the many alternatives that offer a brighter future. Additional options that combine the benefits of short-term economic revenue and long-term ecological sustainability, participatory management, fundraising, and effective product commercialization are also laying the foundations for a sustainable community. And new steps are consolidating results and ensuring lasting benefits to both local communities and the biodiversity of the entire El Ocote Reserve. Ongoing plans include strengthening the El Ocote Forest Reserve work plan, helping communities advance organic coffee certification and export, increasing the conversion from traditional to organic coffee, and promoting other biodiversity-friendly alternatives such as vanilla, allspice, and cinnamon.
PERU
Huasai Palm Reforestation and Management,
Pacaya-Samiria National Reserve

Introduction
The Pacaya-Samiria National Reserve spans more than five million acres of Amazon lowland rain forest and wetlands. Around 60 percent of Peru is forested; almost 90 percent of the original forest in the Amazon Basis is still intact. The freshwater wetland systems include the watersheds of two slow-flowing rivers and protect many streams with sandbanks, riverain forests, marshes, large oxbow lakes, and swamp forests. The region is also home to numerous aquatic species including gray and pink river dolphins, Amazonian manatee, the giant river otter, and the giant South American river turtle. Combined with Peru’s Pacific coast, its water habitats support 200 fish species. Colorful bird species, primates, and such cats as the jaguar also thrive there; 118 of the 1,768 bird species that call Peru home are found nowhere else on Earth.

Nearly 100,000 people live at the subsistence level within the reserve. Underscoring the reserve's vital importance is the fact that no other protected area in Peru is as directly linked to the economic well-being of so many. Equally compelling is the awareness that the natural resource base upon which these people depend is threatened by current harvest practices. To ensure economic and ecological viability, The National Arbor Day Foundation has worked with The Nature Conservancy and its local partner, ProNaturaleza, to assist communities in reforesting an expanded area of the reserve by planting palm tree seedlings.

Project Activities
Working with the Pacaya-Samiria National Reserve to Foster Survival
Since 1992, the Nature Conservancy and ProNaturaleza have worked with the Peruvian government to connect community development with the protection and management of the reserve's plant and animal resources. This collaboration, strengthened by National Arbor Day Foundation support, is helping counter the threats of uncontrolled hunting and harvesting of forest products, fishing, and slash-and-burn cultivation. The project is working to establish a balance between resource conservation and biodiversity protection and economic use, resulting in sustainable productivity and income. Arbor Day Foundation backing has helped The Nature Conservancy and ProNaturaleza support the reserve through improved protection and management, education and communication, and such compatible resource-use practices as sustainable fisheries and reforestation.

Huasai Palm Reforestation and Management
Almost half of the Pacaya-Samiria National Reserve is palm tree forest, and local residents use palm trees for fruit extraction and building materials. One of the palm species most heavily used is the huasai palm (Euterpe Precatoria). This tree provides the raw material for hearts of palm, a product both consumed within Peru and exported internationally. Since the palm is cut down to extract the heart, the current use of this tree is unsustainable. With Arbor Day Foundation backing, The Nature Conservancy and ProNaturaleza continue their work with local communities to reforest harvested areas. This reduces damage to palm populations near area villages and lowers the number of harvesters who are forced more deeply into the reserve to extract huasai. Communities near the Veinte de Enero Conservation and Development Center are now managing nearby palm
forests through reforestation and controlled harvest of the mature palms. This is one of four centers strategically located at entrances to the reserve and supported by The Nature Conservancy and ProNaturaleza. Participating communities are developing and refining plans for ongoing sustainable management of huasai.

**Conclusion**

With Arbor Day Foundation support, communities in the reserve have made important advances in sustainable agroforestry. In addition, hundreds of families have improved their income through wise use of the huasai palm, and residents have been or are currently receiving training in the sustainable management of palm trees. Conservation benefits of the Huasai Palm Reforestation and Management Project include the maintenance of the forest cover surrounding communities and a diminished need for local people to harvest deeper into the forest. Other, long-term results will be greater income from the sustainable management of the palm forest and enhanced community organizational skills through the Palm Tree Management Committees.