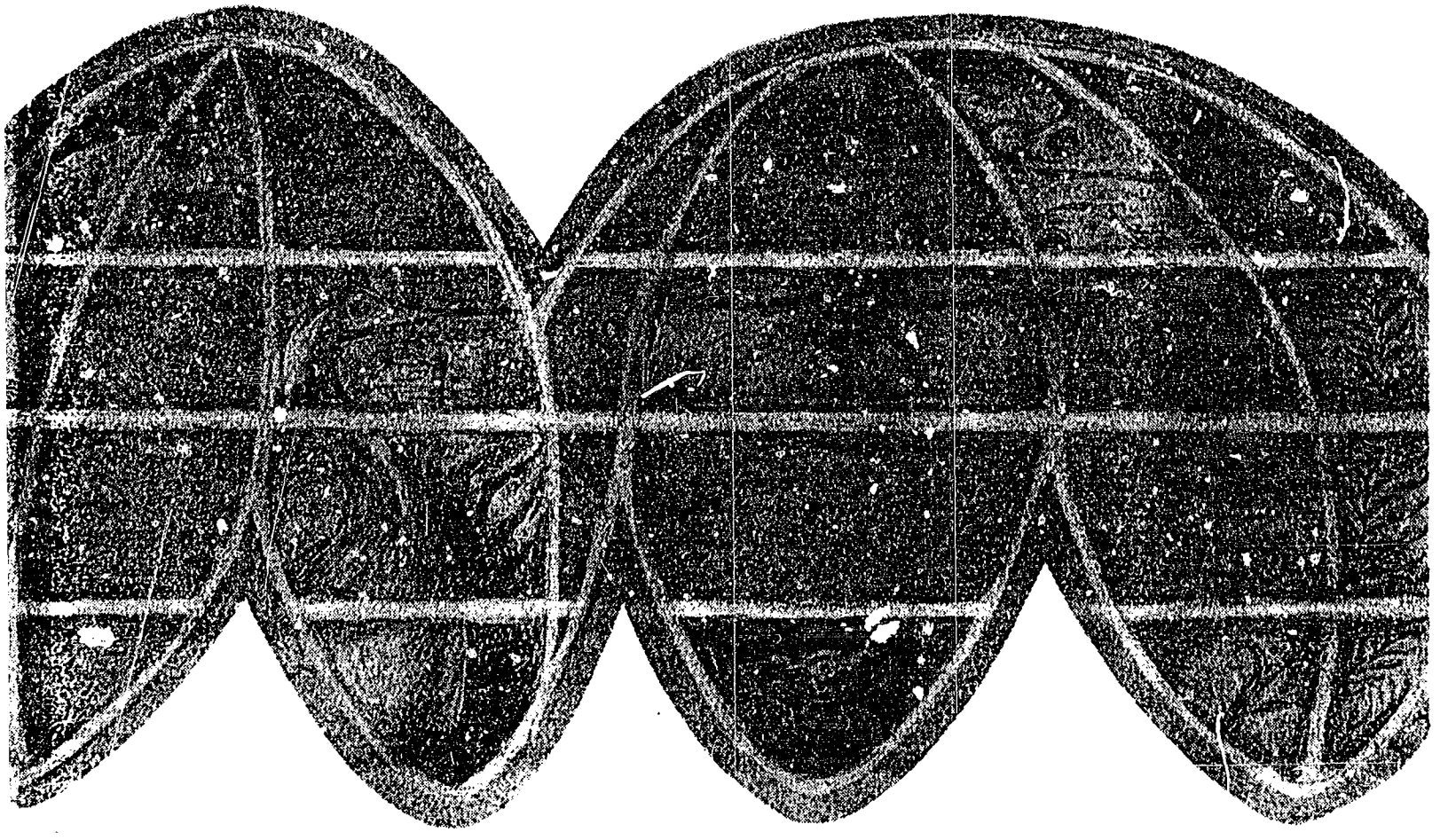
PN-ABQ-202

An Introduction to Sustainable Tourism (Ecotourism) in Central America

prepared by:
Ray E. Ashton, Jr. and Patricia S. Ashton of Water and Air Research, Inc., Gainesville, Florida

for the Paseo Pantera Ecotourism Program



This document is a product of

PASEO PANTERA: REGIONAL WILDLANDS MANAGEMENT IN CENTRAL AMERICA

a project being implemented by a consortium of
Wildlife Conservation International, a division of the New York
Zoological Society, and the Caribbean Conservation Corporation

in collaboration with Tropical Research and Development, Inc., Water and Air Research, Inc., and the University of Florida

With support from the United States Agency for International Development
Regional Office for Central American Programs

FORWARD

It may be fairly argued that the "business" of Central America is conservation. This book provides guidelines for managing one major component of that business: tourism.

If "business" may be defined as an enterprise or activity leading to economic rewards, then we find that for Central America, conservation is now, or will become, the core of the economic well-being of the entire region.

In this book, in keeping with the emphasis of the project, Paseo Pantera, that sponsored its production, our concern for conservation is focused chiefly on natural areas and wildlife (as contrasted with air pollution, water pollution, solid wastes, energy efficiency, and other priorities often included under the broad rubric of "conservation".)

Developing sophisticated skills to manage natural areas in Central America is crucial to the welfare of the region for two reasons that might be measured by conventional economic parameters: conservation saves money and conservation earns money.

One need go no further than Central America itself to find grim examples that substantiate the first of these claims. Conservation can save society from the staggering expenses of restoring natural systems and natural processes. When the capital city of the Republic of Guatemala must shut down electric supplies for several hours of each day during the dry season; when the barrier reef of Belize is threatened by pesticides transported by river and marine currents from Guatemala and Honduras; when Lake Managua is ruled dangerous to public health; when the great tri-national Rio Lempa goes dry, leaving irrigation, hydroelectric and potable water systems dysfunctional; when the south shore of Lake Nicaragua has become shoaled into a mudbank from ill-conceived agricultural practices in Costa Rica; when Guaymi Indians in Bocas del Toro find their fishing grounds saturated with spilled oil from the Trans-Isthmian Oil Pipe Line; when these contemporary catastrophes are confronted by responsible societies it will be found that the price tag for restoring normalcy will be nearly prohibitive. Conservation saves money -- and saves humanity from suffering.

Conservation earns money by providing and maintaining natural resources of economic worth. Conventionally, we think of such industries as fisheries and timber as being dependent upon natural areas. This book concerns itself with another industry that may be considered a "user" of nature: tourism. And, based on observations elsewhere in the world, it may be safely predicted that in Central America, nature-based tourism will exceed the economic worth of all other nature-based industries combined. More astonishing yet, in many areas it can be shown that the existing tourist industry already vies with century-old banana, sugar, and coffee export industries for primacy as a revenue earner: as a contributor to gross national products.

The protected areas of Central America are revenue earners. The countries of Costa Rica and Belize verify this observation today, and the potential of the remaining countries of the isthmus to contribute to the tourist trade can only be regarded as exceptional.

That having been said, it must also be recalled that the tourist industry is not an inherently benign enterprise. Without guidance, tourism can have severe impacts upon natural areas and sensitive cultures. It is even possible for a robust, but foreign-owned tourist industry to contribute nothing of financial consequence to national or local economies.

For an effective balance between the promise of tourism and the needs of economic development to occur, it must be realized that the protected areas of a state are the basis for the industry. Equally, those who manage these areas must become conversant with and about the industry, and, in partnership with developers, determine ways to support the chronic, but not extraordinary, fiscal requirements of parks and protected areas.

This book begins to address the challenge of achieving balance between tourism and adventure conservation in Central America. It is a product of the Paseo Pantera project, and we hope it is useful to citizens, citizen groups and governmental agencies throughout the region.

The goals of the Paseo Pantera project are to preserve and improve management of lands set aside for conservation, to apply ecological principles in planning new protected area systems, and to restore deforested section of the Central American isthmus. Over exploitation and poor management of natural resources have dire implications not only for Central America's wild flora and fauna, but for the 30 million people living in the region today. The Paseo Pantera project seeks to contribute not only to wildlands management but to the sustainable socioeconomic development of the region.

Based on biogeography and conservation biology, Paseo Pantera is an intrinsically regional wildlands program. The Central American land bridge which was formed in the Pleistocene Epoch, 3 million years ago, has provided a pathway for the interchange of the many species of wildlife between North and South America, contributing greatly to the biodiversity of both hemispheres. One of the widest-ranging mammals in the New World is the panther, or "Pantera" in Spanish (also known as the puma, cougar, and mountain lion), which ranges from Patagonia, through South and Central America to the northern reaches of Canada. It is from this animal that the project takes its name "Paseo Pantera", path of the panther, as a fitting symbol for a new regional conservation initiative.

The accelerating degradation of Central America's rich endowment of flora and fauna can be largely attributed to widespread habitat degradation and destruction. Forest fragmentation threatens many species and entire ecosystems. What remains are "islands" of wild land in a "sea of civilization". Remaining forests are often too small to harbor hearty, resilient populations of the resilient populations of the region's species. Paseo Pantera addresses the goal of preserving biodiversity of Central America through a regional cooperative program promoting wildlands planning and management with aims of uniting fragmented wildlands using wildlife corridors, buffer zone management, as well as restoration.

The Paseo Pantera project was proposed in response to the "Regional Wildlands Management Programs" component of the Regional Environmental and Natural Resources Management Project (RENARM). The RENARM project was initiated by the Agency for International Development's (USAID) Regional Office for Central American Programs (ROCAP) in direct response to urgent and widespread conservation needs in Central America.

The project is being implemented by a consortium composed of Wildlife Conservation International (a division of the New York Zoological Society) and the Caribbean Conservation Corporation in collaboration with Tropical Research and Development, Water and Air Research, University of Florida, and a number of Central American governmental and non-governmental organizations.

Preserving Central America's biological diversity can be accomplished through preserving and managing lands set aside for conservation and restoring sections of the fragmented wildlands of the Central American isthmus. The will of the governments of Central America to undertake this ambitious mission is clearly telegraphed in

the Central American Biodiversity Treaty of 1992, drafted by the Central American Commission for Environment and Development (CCAD).

However, even with political commitment and sufficient technology for the job, it is daunting to consider the financial needs of such a program. Too often, throughout the world, the scarcity of money for conservation, and not the absence of political will or public concern, has been the sole explanation for the loss of species and magnificent landscapes.

In the case of Central America, particularly owing to its proximity to the North American continent, there is every reason to expect that the international tourist trade can generate funds sufficient to support, in large part, the best park system in the world -- and contribute to national economies as well. But it will not happen without the vigorous participation of land managers and field biologists in the planning of tourism development.

The dialogue that is required is unusual. Business investors are not in the habit of discussing the nesting seasons of quetzals or sea turtles when planning their developments. Biologists are in the habit of considering developers the cause of the loss of biodiversity. In this book, we suggest, at least implicitly, that the two parties must learn to communicate effectively with one another if either party is to realize contentment. We hope this book facilitates that dialogue.

It may be seen that the dialogue between conservationist and developer is the most important debate in contemporary Central America. Such is the fragility of the land and water of the isthmus. Nature has left little margin for error. It is incumbent upon those who wish to develop Central America to learn of her nature. This book of guidelines begins to illustrate this essential paradox.

Archie Carr, III
Gainesville, Florida
February 1993

INTRODUCTION

In 1991, when the Paseo Pantera Ecotourism Program (PPEP) strategies were developed and implemented, initial research revealed that tourism in protected areas was having a significant impact throughout Central America. The most obvious impacts were the negative ones where tourism appeared to be literally running over some natural areas and communities, harming natural resources through poorly planned infrastructure and itineraries. At that time, tourism in natural areas of developing countries was growing faster than any other form of economic development. The concept of ecotourism was becoming a fad in North America and Europe and was little more than a marketing ploy for the tourism industry. On the other hand, many people studying the possibilities of establishing sustainable development in Central America were considering tourism as the best form of development for some areas. Each organization created its own definition of ecotourism adding more confusion to the issue of tourism in protected areas.

It was within this dynamic atmosphere with its changing definitions and applications of the ecotourism concept that the Paseo Pantera consortium developed the Paseo Pantera Ecotourism Program (PPEP). The PPEP had to determine whether or not tourism had a role in protected area conservation, define what that role was, and then develop a method which would effectively establish that role in the project area and ultimately influence the entire region. Due to budgetary restrictions, the PPEP program was established only in Honduras, Guatemala, and Costa Rica. These countries were selected because they represent the spectrum of tourism development and protected area management. A PPEP director for each of these countries was selected based on their knowledge of tourism and conservation issues and their involvement and ability to work with government, private sector, conservation NGOs, and local communities. The directors were Ana Baez in Costa Rica; Tatiana de Pierson in Honduras; and Alfredo Toriello in Guatemala. Ray Ashton directed the PPEP and the regional program. The program was coordinated through Water and Air Research, Inc., International Ecotourism Services, located in Gainesville, Florida.

The charge of creating a program to effectively meet the goals of the PPEP was not simple. Unlike writing a document or producing a study, the development of the ecotourism element called for coordination and cooperation of a cross section of people frequently in opposition, if in fact they ever communicated at all. The decision was made to follow a plan developed by Ray Ashton, the Director of the PPEP, while conducting similar work in the former Soviet Union state of Kazakhstan in 1990. This plan called for the development of a tourism and conservation council which brought together all the people of Kazakhstan with vested interest in tourism development in and around the protected areas. These groups, or stakeholders in the development of tourism, included: government officials, protected area managers, local tourism operators, organized labor committees, and community representatives. Since the attitudes and plans of the various groups regarding tourism in protected areas in Kazakhstan, as in Central America, were often in opposition, a method of resolving these differences and establishing an acceptable plan was developed. These differences were resolved ultimately through discussion and working together, resulting in the development of nature tourism in the buffer zones of the national park in Kazakhstan. Local communities established a plan for training people based on the needs of tourists. Park officials were able to establish a fee system which provided much needed funding. These same principles were applied to the PPEP plan.

Central to the PPEP plan and arising from the experiences in Kazakhstan, is the concept of National Ecotourism Councils (NEC). The NEC encourages involvement of all tourism development stakeholders in the process. It is an inclusive process, not an exclusive one. The PPEP staff performed three primary functions. First, the staff organized stakeholder and planning groups working to establish the NEC. Second, the PPEP staff provided

education and communications to all groups, the news media, universities, and other groups within each country. Finally, they acted as the executive secretariat of the NEC. This maintained organization of work, kept committees working until NEC officers were chosen, provided NEC representation at meetings and conferences, and established a means of liaison with the PPEP director. The goals and operations of the NECs are described in this book.

As the process of developing the NECs was underway, two important points became obvious. First, there was no agreement regarding what ecotourism was, and second, information about tourism and conservation was difficult to find or obtain in Central America. Those materials that were provided by international conservation NGOs discussed a form of tourism that was relatively insignificant compared to current developments, and demonstrated little understanding of the real world situation in Central America. After hundreds of interviews with representatives of various stakeholders, it was obvious that the definition of ecotourism had to be broad, describing how tourism was planned and carried out, as opposed to identifying a type of tourism. Thus, ecotourism was described as tourism that is developed in a sustainable way, supporting conservation, protecting peoples' rights to chose, and providing economic choices in rural areas. This definition includes protection of natural and economic resources and provides for profitable tourism. As soon as this decision was made, the project and the goals of the NECs became clear. Government officials and those in the private sector who displayed concern or indifference to ecotourism now became partners in the development of the NEC, and most importantly, with few exceptions, began to look at the whole process of tourism planning in a different light.

The second goal of the PPEP was establishing an information base to address sustainable tourism issues including planned and monitoring. The Paseo Pantera consortium determined that an ecotourism (sustainable) tourism manual should be developed. This manual would include all the elements of sustainable tourism planning. It will include basic information which would provide all the stakeholders in the NECs the basic information required to understand the tourism industry, the problems caused by tourism, and how tourism could be harnessed to support the protected areas of Central America.

The original plan was to produce the manual An Introduction to Sustainable Tourism (Ecotourism) in Central America, before the NEC process was underway. This was not done due to timing and budget. A planning document was presented and distributed for review to stakeholder groups in Central America and to researchers in the ecotourism field. The planning document provided information based on the general concepts of the narrow view of ecotourism, information on planning and development review, and other related issues. The reviewers provided important comments and suggestions regarding the content of the final document. Meanwhile, literature in the field of ecotourism exploded. Conferences were frequently held and the fad expanded into all levels of conservation organizations, universities, and consultant groups. The accumulation of multiple philosophies and writings on ecotourism made the task of creating the final document even more difficult.

In the final outcome, the document was put together based on three elements. First, the authors decided to look at all common problems and problem solving methods used in land use planning, zoning, evaluation of economic development, to resolve this information with the concerns of the NEC planning committees and those established by Dr. Archie Carr, III, James Barborak and Kathleen Williams of Wildlife Conservation International.

The authors, along with E. Lynn Mosura, Senior Scientist, and Leslie Haysmith a contractual employee of Water and Air Research, Inc., developed an annotated list of publications and important references in the field of sustainable tourism development which were used to develop this publication. There are many more publications

was to select publications that present key points in the process of making tourism sustainable. Little attention was given to projects or reports that presented the narrow interpretation of ecotourism since their relevance in the real economic and conservation world is questionable.

The authors wish to thank those people listed in the appendix for all of their help and advice, along with several others who played various key roles in the development of this project. These include Kirk Stage and Hugh Putnam of Water and Air Research, Inc., Henrique Pinto da Costa of Eco-Sao Tome e Princpe, Dr. Victor Gonzalez the Permanent Secretary Tourism and the Environment in Belize, Dr. G.Budowski of Costa Rica, Hector Ceballos-Lascurian of IUCN, and all the members of the NECs who provided important information and guidance during this process.

The manuscript was formally reviewed by Tamara Budowski, Horizontes Nature Tours, Kurt Kutay Wildland Adventure Tours, and the Paseo Pantera Consortium. The Spanish translation was directed by Tatiana de Pierson, Institute of Honduran Tourism.

TABLE OF CONTENTS

Forward	i
Introduction	iv
Unit 1 - Central America Conservation	1
Unit 2 - Central American Tourism	6
Unit 3 - Goals of Ecotourism	18
Unit 4 - The Impacts of Tourism on Natural Resources	23
Unit 5 - Subsidizing Natural Resource Conservation	31
Unit 6 - Cultural Change and Tourism	42
Unit 7 - Tourism Impacts on Socioeconomics	46
Unit 8 - Planning for Tourism Development	52
Unit 9 - Evaluation Systems for Tourism Development	59
Unit 10 - Developing a Problem Solving Mechanism	64
Appendix A - Annotated Bibliographies of Referenced and Pertinent Literature	68
Appendix B - Personal Communication	91
Appendix C - The Organization of the Paseo Pantera Ecotourism Project and National Ecotourism Councils	93
Appendix D - National Profiles Status and Ecotourism Planning in Central America	97
Appendix E - Wildlife Desirability of Some Central American Species Relative to the Tourism Industry	104

UNIT 1

CENTRAL AMERICA CONSERVATION

Central America, composed of Panama, Costa Rica, Nicaragua, Guatemala, El Salvador, Honduras, and Belize, forms an important land and shallow marine bridge between South and North America. This land bridge acts as an exchange route for the flora and faunas of these two great continents. The diversity of life within the Central American region has been enriched by this exchange with some 22 life zones supporting more than 15,000 plant and 2,100 nonmarine vertebrate species. The greatest biodiversities appear to be in Guatemala and Costa Rica However, the study of Nicaragua's biodiversity is only in its infancy.

Central America's biodiversity has been attacked by a variety of forces driven by exploding population growth. The human population growth rate in Central America is high, averaging 2.9 percent, which is equivalent to the growth rate in parts of Africa. Since 1920, the population of the region has grown to more than 25 million, a 400 percent increase. Nicaragua, El Salvador, Honduras, and Guatemala contain 60 percent of the region's people with an average growth rate of 3.5 percent. Accompanying this population growth, forests have declined from 49 percent of the total land cover to 34 percent in 10 years, a 15 percent loss. Mounting international debts along with the need to establish low-impact, high-yield economic development is causing many governments to consider tourism as a viable form of development.

> The reasons for the great loss of wildlands are
>
> POVERTY
>
> IGNORANCE
>
> LACK OF INSTITUTIONAL PROTECTION
>
> Gillis, USAID

LOSS OF WILDLANDS

The loss of natural habitats throughout the region has caused the land bridge of natural habitats in Central America to be greatly reduced and broken along its length. As an example, today it is estimated that only 41 percent of native forests remain.

Beginning in the early 1970s, the world's conservation community became aware of the massive loss of habitat and biodiversity from Central America. This awareness led to many efforts to work with governments for the establishment of protected areas throughout the region.

Protected Areas

Many areas have purchase by national governments and international conservation. The primary purpose for setting these areas aside is to protect natural habitat and biodiversity. Areas are set aside as private preserves, national parks, and wildlife, cultural, marine, and forest preserves (see Table).

According to the World Wildlife Fund, the number of protected areas in Central America has grown from approximately 30 in 1970 to nearly 250 by 1992. Approximately 15 percent of the total land area of Central America, or 29,000 square miles, has some protected status designation.

There are currently a number of international parks being developed through cooperation between governments in the region. These include efforts between Costa Rica and Nicaragua and Panama; Honduras and Nicaragua; Guatemala, Belize and Mexico; and Honduras and Guatemala. The joining of these protected areas is important to the biological corridor concept.

The Status of Protected Areas

The majority of protected areas in Central America are protected only on paper, and thus are termed

TABLE 1-A. Protected Areas of Central America - 1991								
IUCN MANAGEMENT CATEGORIES	COUNTRIES							
	BZ	ES	GU	HO	NI	CR	PA	TOTAL
Natural reserves						3		3
National Parks	2	4	20	15	3	15	11	70
Natural Monuments	1			1	1			3
Biological Reserves	5	2	7	28	3	30	2	77
Cultural Monuments	1		23	1	1	1		27
Interim Reserves					11			11
Forest Reserves	15		3	5		12	10	45
Biosphere Reserves			2	1				3
Private Reserves	3					5		8
Indigenous Reserves	6					6	3	15
Potential New Reserves	29	22	19	10	18		32	130

Adapted from Cornelius 1991

"paper parks." These areas have been designated by the governments involved as protected areas but very little protection from exploitation has been given to them. A number of reasons for this situation have been noted in various studies. They include:

1. Lack of funding for protection of the areas,
2. Lack of management plans for protected areas,
3. Traditional use of the areas by local communities compounded by population growth,
4. No economic plan designed around uses of protected areas,
5. Lack of education and understanding of the value of undeveloped land,
6. Political power behind traditional economic development interests,
7. Lack of land use planning, and
8. Lack of information and surveys.

Human Use Within Protected Areas

A current trend within the conservation community is to create economic development within protected areas or their buffer zones which have little or no impact on the natural environment. This idea of sustainable development is to allow local economies to benefit directly by having protected natural communities in their vicinity. There are a number of such projects being studied throughout Central America including collection of native plant material for various uses, wildlife farming or ranching, and tourism.

Considerable research is required to insure that these alternatives to traditional jobs and local economic bases can work over the long term, especially when such complicating factors as population growth, world demand for a product, and marketing are part of the equation.

In tourism development, the conservation questions which have yet to be answered include: what can visitors to protected areas do without harming the area? How many tourists can visit a protected area, and when? How can tourism financially support protected area management?

For many years, conservation biologists thought they had the answers to these questions. Now many groups are trying to restudy these ideas.

PROTECTED AREA ISSUES

Sustainable Use

Many protected areas in Central America can be categorized, as stated previously, as "paper parks." These areas have been identified and catalogued, but have no real protection by law. Others have no staff or funding for their protection and many are being deforested for agricultural use and timber cutting. Many areas which have protection do not have management plans or only have plans which address habitat management and ignore human management.

The original goal of setting aside these areas was the protection of natural communities and the biodiversity they support. At first, little concern was given to the economic needs of people around the reserves or overall national economic needs. In many areas, a "hands-off" philosophy and no economic development were planned for these areas. Over the past 10 years, it has become evident that planned economic use needed to become part of the conservation program. Now various plans for sustainable development are being investigated throughout Central America. The goal of this sustainable development is to provide for the economic needs of people around and within protected areas while maintaining the biodiversity of the area. Sustainable activity in some way has to support the conservation of the natural resources of an area. One potential form of sustainable economic development is ecotourism.

Management and Funding

Within the past 5 years, all countries within the region have established at least one agency which is responsible for protected areas. There are six major problems with management programs within the region:

1. *Lack of funding and budget.* This leads to a lack of trained personnel, infrastructure, area protection, and control in the use of the areas. As populations grow and more individuals use the protected areas, the need for funding becomes more critical.

2. *Centralized budgeting.* Park and protected area spending and budgets are usually controlled within the central government of a country. Individual managers do not have direct control of spending. This makes spending and budgeting very cumbersome.

3. *Lack of Management plans.* A survey of parks in the region revealed that many had superficial management plans designed to protect the area. Management plans that covered tourism or other methods of human use were rare or were not fully developed.

4. *Lack of Land Use Management and Buffer Zone Plans.* Most protected area management plans do not take into account the use of the land surrounding a park or how it could be used for sustainable development while protecting the park from future human growth.

5. *Lack of Baseline Data and Monitoring Programs.* Many researchers indicate that there is a real need for baseline biological information in protected areas in the region and in areas being considered for protection.

6. *Lack of Regional Protected Area Plans.* Regional planning for regional parks and protection of other resources is needed since these resources cross over political boundaries.

Natural Resource Protection

Great strides are being made by many countries within Central America in the area of natural resource protection (Table 1-B). There is a need for continued work in the following areas:

Local, National and Regional Planning

As populations increase and natural resources decline, there is an ever-increasing need for resource and land use planning. Using today's highly developed systems of resource mapping and data collection, managers can create overall plans with regard to local economic needs, important natural habitat, and sustainable use. Local communities must also play a greater role in the land use decision making process when economic development is being considered. Simple methods of regional and international planning, coordination, and problem solving should be developed. (Secretaria de Intergracion Turistica Centroamericana is an example of such a program.

TABLE 1-B. An Overview of the Status of Protected Area and Natural Resource Management in Central America

A=In place B=Regulations are being put into place C=Some efforts are being attempted in some areas D=No effort at the moment	COUNTRIES						
	BZ	ES	GU	HO	NI	CR	PA
Protected Areas are under a specific government agency	B	A	A	A	A	A	B
Most Protected Areas are staffed and protected by government employees	D	B	D	C	D	A	D
Individual Areas Have use plans (visitor, sustainable develop)	B	C	C	C	D	B	D
Management Plans are in place	C	C	C	B	C	B	D
Natural Resource Inventories have been conducted	A	B	B	C	C	A	D
Land Use surveys have been made	C	D	B	C	D	B	D
Local communities, the private sector, and others have input on plans, regulations, and actions on protected area and natural resource use	B	D	D	B	D	B	D
Environmental and economic impact analysis system has been developed	D	D	D	C	D	B	D

Source: WAR, 1992

in tourism.) This brings together the ministry level national directors of tourism who discuss common issues and solutions to the tourism industry

International Development and Conservation Agency Planning

Most travel programs originate and are planned outside the host country. Programs at this international level for development or conservation should keep the needs of local people in mind. Funding should be wisely used and avoid duplication of effort.

Establishment of Environmental and Economic Assessment Programs

Systems should be established to require developers of all forms of projects to study and provide information to all levels of government, nongovernment organizations (NGOs), local communities, and other interests to evaluate the impacts a project may have. A method for input should be present as well as methods of mitigation and replanning. Such a plan is outlined in units 9 and 10. Land use planning and a method of review by all stakeholders is necessary for the review process to be successful.

Such programs would permit not only the evaluation of ecological impacts but economic ones as well. Frequently, sales of timber and other natural resources are well below international market values and provide very low economic returns.

Regional Issues

There are a number of natural resource issues affecting the region as a whole. For example, both food and sport fishing resources are being affected by a combination of loss of coastal ecosystems such as mangroves and river estuaries, important to the production of many economically important species, and by overfishing of many species. One country cannot protect its own marine resources without the support of its neighbors.

NATURAL RESOURCES CONSERVATION

The conservation crisis goes far beyond the boundaries of the protected areas. Most natural

resources lie outside of protected areas and occur on privately owned lands or lands leased by governments. The issues of conservation within Central America are no different from those found around the world. However, they are amplified in the region because of the population growth rate, government instability, war, poverty, lack of economic and technological resources, and a lack of baseline information and governmental infrastructure.

Key Issues:

Loss of Forests and other Natural Communities

The rate of forest loss in Central America has reached 15 percent over the last decade. A great deal of the valuable timber is currently being burned or left to rot during agricultural clearing. The loss of habitat is reducing biodiversity and may eliminate economically valuable species. Loss of habitat also eliminates other potential economic uses of forests, such as nature-based tourism and other forms of sustainable development.

Land Degradation

After deforestation, land in the region is generally used for agricultural purposes without appropriate protection from erosion or loss of fertility. Much of this land is thus abandoned after only a few growing seasons. The Pacific slopes of many countries have already been cleared and erosion is a major environmental problem.

Freshwater Degradation

Soil erosion, pesticide use, and lack of sewage treatment has now caused great degradation in the water resources of the region. This impacts freshwater fisheries and biodiversity. Siltation affects hydroelectric power generation by causing sedimentation in reservoirs and reducing their capacity.

There are fewer than a dozen sewage treatment systems in Central America although most of the rural populations use river water for washing, bathing, drinking, and cooking. Water pollution is a leading cause of gastro-intestinal diseases and a major cause of death in the region.

Destruction of Coastal Resources

Fisheries in the region have been affected by overfishing, loss of nursery habitat when mangroves are cut for charcoal, coastal development, and pollution from agricultural and urban wastes. Central to this problem is the increased development of coastal mass-tourism resorts (see Unit 2).

Pesticide Usage

Agricultural pesticide use is not well-controlled in the region and affects people as well as natural communities. International agencies are currently making wide use of pesticides in their efforts to control some agricultural pests and plants grown for drug production. These are having considerable impacts in some ares in Guatemala where pollinating insects and birds have been drastically effected.

Education

There is a lack of environmental or biological education throughout Central America, practical training in agriculture, pesticide use, fishing, and the cause-and-effect relationship of improper resource usage and loss of economic benefits.

UNIT 2

CENTRAL AMERICAN TOURISM

WHAT IS TOURISM?

Tourism is defined as travel undertaken for pleasure. The tourist will travel across town, across the country, or around the world in pursuit of enjoyment.

Tourism is one of the largest industries in the world. Throughout the world, according to the World Travel Organization, one person in 12 holds a tourism-related job. Tourism is the leading earner of foreign exchange in some Central American countries and statistics suggest a growing yearly influx of over 50 million tourists to the Caribbean and Central America.

The tourism industry involves airlines, hotels, ground transport, guides, agents, restaurants, entertainment establishments, parks, and other program providers (Figure 2-A). The industry indirectly affects suppliers of food, fuel, novelty or cultural crafts, and other types of consumable supplies and services.

Tourists may travel individually, independent of a tour group. These are termed FITs - Foreign Independent Travelers. Travelers also may join a group of tourists with a similar goal, often from 10 to 100 people traveling together. These tourists are termed a Tour Group and purchase a defined itinerary.

THE DIVERSITY OF THE TOURISM INDUSTRY

There are many types of tourism. Travel to visit relatives and travel to sites of religious significance rate among the most popular types worldwide. Most people think of tourism as traveling to a location to visit or experience a site in a different region of their country or visiting other countries. Yet there are also tourists who select a topic and visit many countries in their quest to seek out the best places to fulfill their particular interest. From old European castles to Mayan temples, from bird watching to coral reefs, or even from golf courses to fishing holes, tourists may pursue their goals with enthusiasm. Nature or culturally oriented goals for tourism can form the basis of ecotourism.

Often tourists simply go somewhere to rest and relax. Recreational tourism is very popular and includes travel to sporting events or travel to locations for swimming, surfing, fishing, boating, and other related activities. It is largely this type of tourism that has resulted in the coastal areas of the world being developed with so many large hotels and condominiums.

The modes of travel may define a type of tourism as clearly as the type of destination. One of the fastest growing segments of the tourism market is cruises. These offer luxurious hotel-type accommodations often on a scale almost like a small city. Ships which carry over 1,000 passengers are becoming commonplace in the Caribbean.

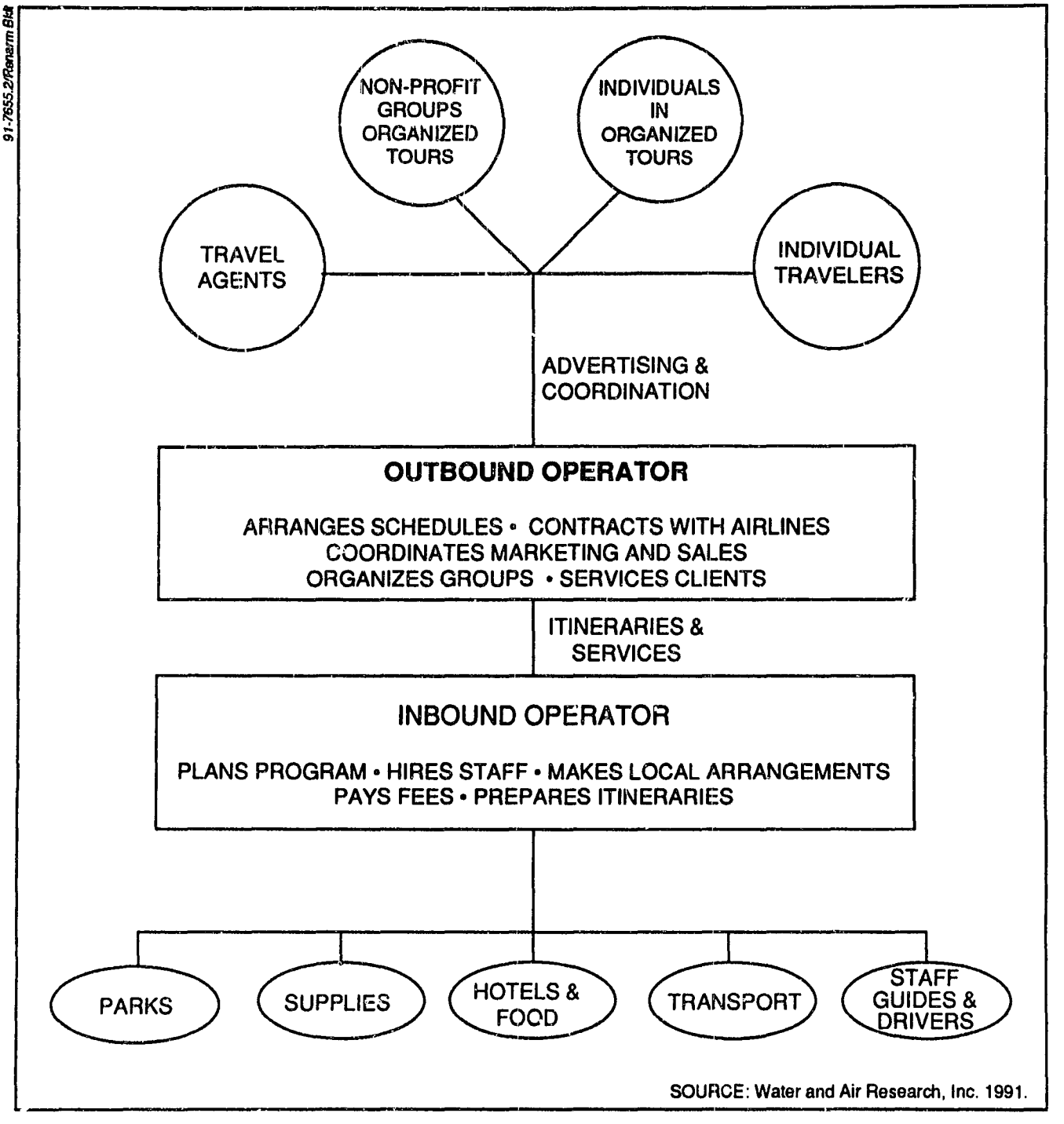
Airline travel is the most common form of long distance travel and in itself is a multi-billion dollar industry. International roadways are becoming easier to travel from one country to another and passage across borders has been reduced to mere formalities. Adventurous travelers may pursue thrills through white water rafting, hiking, sailing, diving, or biking through wild areas. All of these possibilities have resulted in unprecedented numbers of tourists considering travel to Central America.

The tremendous diversity of the tourism industry and its economic significance makes it reasonable to compare tourism with more traditional industries such as agriculture, manufacturing, forestry, and mining.

Tourism in Central America is one of the fastest growing industries, with an annual growth rate of 20 percent since 1980. Approximately 50 million tourist arrivals were recorded in 1989 in the Caribbean and Central America. Tourism has grown to be one of the top three industries in Costa Rica, Belize, and Guatemala. Tourism is a leading earner of foreign exchange and a major source of employment in these countries.

- According to an economic study by Jacksonville University, the overall gross

FIGURE 2-A. Structure of General Nature Tourism Travel Business



SOURCE: Water and Air Research, Inc. 1991.

domestic product (GDP) in Belize increased by 1.4 percent and tourism was growing annually by 19 percent in 1989.

- In 1979, when International Expeditions, Inc. (one of the original developers of nature based tourism in Belize), began marketing research and program development in Belize, fewer than 1,000 nature tourists (mostly divers and archaeological tourists) visited this country. In 1989, more than 40,000 people visited Belize.
- Tourism in Costa Rica was second to overall manufacturing in the GDP in 1991, superseding logging and agriculture. The Costa Rican park service reported that in the 1991 travel season the number of visitors to their protected areas grew by 100 percent.

According to a recent survey of inbound operators, most tourists to Central America come from North America, Europe, and Japan. The fastest regional growth in tourism is from Japan and Europe. Setbacks in tourism growth have occurred in Honduras, Nicaragua, El Salvador, Panama, and to some degree in Guatemala over the past 10 years due to political unrest. However, tourism and investment in the tourism industry are increasing now that stability has returned to much of the region. It is the diversity and economic importance of the tourism industry that prompts Central American countries to spend relatively large amounts of money to attract tourism development. Due to the demand for foreign exchange, governments generally encourage development, but to date have not imposed sufficient controls on zoning or environmental degradation. Priorities are more often placed on short-term economic gain, ignoring long-term environmental impacts.

Tourism development is similarly destructive wherever high volume is encouraged without any form of control. The tourism development emphasis has been on large resorts that have few direct ties to natural areas. Such development generally requires substantial foreign investment with the majority of the profit usually leaving the host country. This is referred to as "leakage," and

> LEAKAGE IS THE MOVEMENT OF PROFITS OUT OF THE HOST COUNTRY. IN GENERAL, TOURISM LEAKAGE MAY EXCEED 50 PERCENT.

researchers indicate that leakage from general tourism may be higher than 50 percent. Leakage is not unique to tourism. Large agricultural and timber operations that are financed by foreign investors suffer similar problems. Leakage also occurs when supplies are purchased outside of the host country and imported to service large resorts. Importation of food and materials occurs frequently because suppliers in host countries often cannot supply goods with the consistency, quantity, and quality required. Another type of leakage occurs when facilities are staffed by foreign employees.

TYPES OF NATURE TOURISM

To understand the development of the wildlands tourism industry it is necessary to have an overview of the various forms of wildlands tourism and the needs of the tour operators and tourists (Table 2-A). Tourists can be classified into several categories based on their goals and needs in travel. The term "ecotourism" can be applied to tourism development which is planned and carried out in an environmentally, socially, and economically sustainable fashion (see Unit 3). Using correct techniques most nature or cultural wildlands tourism development can become ecotourism.

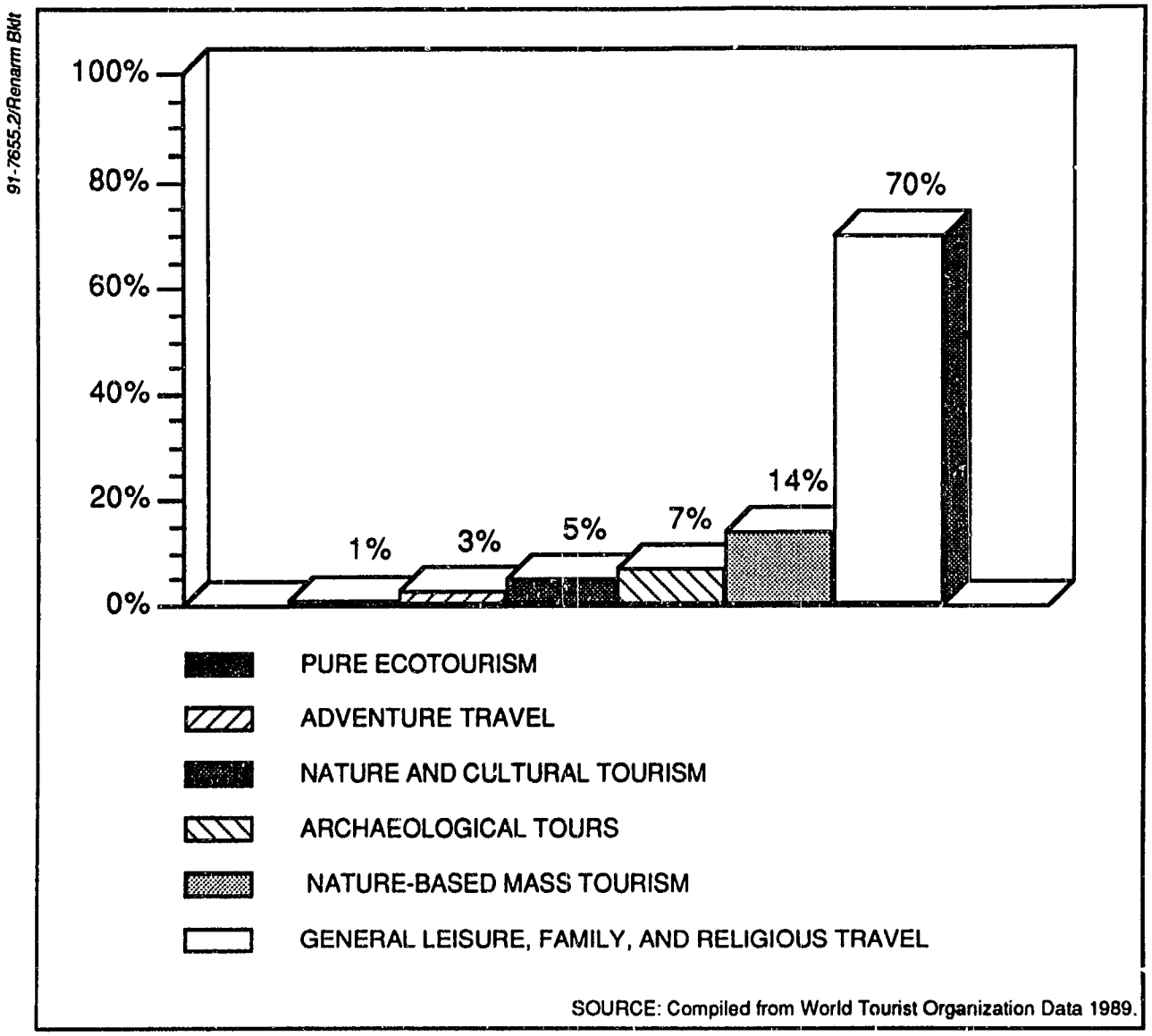
Figure 2-B depicts the overall tourism market and the percentage of tourism considered as "ecotourism." This includes "pure" ecotourism; nature/cultural tourism, including bird watching and visiting archeological ruins; hunting and fishing tourism; adventure travel, which includes hiking, white water rafting, diving, and other activities; and mass tourism that utilizes natural areas.

Domestic Tourism

As one of the fastest growing types of tourism in Central America, domestic tourism involves travellers visiting wildland areas within their own countries. Domestic tourists travel for reasons similar to foreign travelers: they enjoy participating in outdoor activities, they have an academic need to conduct research, or they just want to learn about natural and cultural history. The largest growth in domestic tourism to many national parks, however, is for recreational purposes. Domestic tourism has increased in many developed as well as developing countries due to greater environmental awareness, better access to public and private transportation, and people's need to escape crowded urban population centers.

Domestic travel can be important in developing support for wildlands conservation. However, this type of tourism can be devastating to natural habitats, wildlife, and archaeological ruins if not well planned and regulated. Negative impacts are primarily due to volume. Protected areas are not prepared for high volume and local travelers' recreational needs. Few local or regional parks are designed to provide picnic tables, playing fields, and the desire open access to swimming areas. Within the United States, domestic travel to national parks has caused great concern about the continued preservation of natural environments. Similarly,

FIGURE 2-B. Estimated Leisure Travel to Central America



managers of reserves and national parks in Costa Rica have stated that they have been unprepared to repair damage caused by increases in tourism.

Mass Tourism

In the context of wildlands tourism, mass tourism is defined as tourism with more than 30 people per group spending less than 50 percent of their time viewing wildlife or cultures of the wildlands. These tourists may be domestic or foreign. Many tourists visit areas as part of packaged programs that minimally incorporate nature tourism. These tourists patronize luxury ships or resort hotels with little or no contact with small local hotels and facilities. Large buses are often used for transportation and the tourist may never actually set foot in wildland areas.

MASS TOURISM IS TRAVEL BY GROUPS OF MORE THAN 30 PEOPLE SPENDING LESS THAN 50% OF THEIR TIME VIEWING WILDLIFE OR EXPLORING CULTURES IN WILDLANDS.

Worldwide mass tourism is the largest segment of the overall tourism market and is growing rapidly in Central America. It tips the economic scales by providing large economic benefits to host countries through jobs and tax revenue. However, much of the total revenue remains in the country of the tourists' origin. Cruise ships and large hotels often

purchase food and supplies from foreign markets and import them to the host country, furth r reducing the economic impact to the host country. Two reasons for the outside purchases are that many host countries cannot provide the quantity and quality of supplies necessary and that it is much less expensive to purchase supplies in large volume with U.S. suppliers.

Operators of mass tourism programs use wildland experiences as one activity out of many for their participants. In contrast, the goal of nature tourism programs is to visit high quality wildlands and to experience and learn as much as possible. Tourists in this category do not require pristine habitat; they merely need examples of the area's natural communities and scenery. The average age of these mass tourists is in the mid 60s. These travelers are generally less physically capable of participating in field activities than the average nature tourists.

Operators indicate that mass tourists have the following needs:

- Mass tourists are passively interested in wildlife and are satisfied with observations of captive wildlife.
- Trails used by these groups should be well-developed as many of these tourists are not physically capable.
- Well placed tour roads or trams can be used since the group of tourist is satisfied to experience the rainforest from an air-conditioned bus.
- Mass tourists prefer deluxe accommodations with private baths and recreational facilities like swimming pools and tennis courts.
- Mass tourists want to spend time shopping in cities and visiting cultural or archaeological attractions.

91-7655.2/Renarm Bkt

TABLE 2-A. Natural History and Infrastructure Requirements of Nature-Based Tourism

TYPE	NATURAL HISTORY		TRANSPORT	INFRASTRUCTURE	
	DIVERSITY	SCENERY		LODGES	PERSONNEL
PURE ECOTOURISM	●	●	○	○	○
GENERAL NATURE TOURISM	●	●	●	✪	●
SPECIALTY NATURE TOURISM (BIRD WATCHING)	●	✪	✪	✪	●
MASS NATURE TOURISM	✪	●	●	●	✪
MASS TOURISM	○	✪	●	●	✪
DOMESTIC NON-NATURE TOURISM	○	✪	○	○	○
ADVENTURE TRAVEL	○	●	○	○	●

Requirement Level:
○ - Low ✪ - Medium ● - High

SOURCE: Ashton 1991d.

- Mass tourists are demanding in their expectations for attention from guides and expect to be entertained as part of their experience.
- Mass tourists want to spend time eating meals in comfortable settings and are not happy with rushed or early breakfasts, box lunches, or picnics.

Ecotourism

Pure Ecotourism

In contrast to mass tourism, pure ecotourism is defined as low-volume tourism with low impacts on the environment and surrounding human communities. It generally includes active participation by the traveler in learning, research, or on-site conservation projects. The number of travelers who are willing to sustain low comfort levels and high trip costs constitute a small portion of the nature-based tourism market.

The high cost of ecotourism program development and advertising and the effort required to conduct successful operations makes this form of tourism very risky for operators as well as for local people who are involved in this enterprise. Tour operators are apprehensive about these investment gambles. Due to the low market potential and low volume permitted in "pure ecotourism," these programs may take several years before profits are realized, and thus they require dedicated staff to develop and maintain them. In addition, positive economic impacts for protected areas or local communities may be relatively low.

PURE ECOTOURISM MEANS FEW TRAVELERS WITH LOW CULTURAL AND ENVIRONMENTAL IMPACTS.

Under certain circumstances "pure ecotourism" programs can be a valuable component of wildlands conservation, as well as an asset to public relations. This type of tourism can produce local international awareness of conservation problems in addition to awareness of a country's natural assets.

Study Ecotourism

The Organization for Tropical Studies (OTS) in Costa Rica is an outstanding example of a program that brings large numbers of people per year to Costa Rica to do research, study, or visit well-known facilities such as La Selva Biological Research Station. These groups travel throughout the country for extended periods providing significant income in some areas. Numerous biologists, conservationists, government personnel, and tour guides have been trained or are working in Latin America because of this program. However, not all countries have benefitted by scientific and educational travelers. Many countries are now requiring researchers to adhere to good conservation practices, share scientific results, and provide educational support to local institutions.

Examples of "pure ecotourism", where low volume, low impact criterion are met, include the following:

- Study ecotourism – Participants who are interested in scientific or educational study.
- Nature ecotourism – Conservation or nature enthusiasts willing to experience rugged conditions in the absence of the usual "tourist" amenities to view certain species or particular habitats.
- Cultural and archaeological ecotourism – Enthusiasts willing to endure rugged conditions in order to visit particular cultures or archaeological sites.

Nature, Cultural and Archaeological Ecotourism

Many companies currently claim to offer "ecotours" but few companies meet the criteria of pure ecotourism. Pure ecotourism will typically accommodate fewer than 15 travelers in often primitive conditions to see a variety of habitats, wildlife, cultures or archaeological sites. Programs of this type have existed in Costa Rica and Belize since the 1970s but generally are very low volume.

Travelers on a pure ecotour, unlike mass tourists, generally want to be up early for a quick breakfast before going in the field and prefer a box lunch or picnic in order to maximize outdoor observation

time. In general, they value the experience more than comforts or luxuries.

Popular Nature and Archeological Tourists

This is the type of tour most often considered an "ecotour" by the general public. The travelers on this type of tour often expect well-developed, comfortable facilities as well as international and local transportation that allows relatively easy movement. These tourists seek out expert tour operators for specialized itineraries which provide them with the experiences they wish to enjoy on their expedition.

Tourists in this group include the following:

- Nature tourism – Bird watchers and people interested in wildlife viewing for recreation.
- Cultural tourism – Tourists interested in observing local cultures and local environments.
- Archeological tourism – Tourists interested in viewing archeological sites and studying history and cultures.

Some important parameters of successful nature and cultural "ecotours" are the following:

- Group size - Group size can range from 1-20 people.
- Accommodations - These can range from a tent to comfortable facilities with private bath. Cleanliness and helpful staff are important.
- Food - Most travelers prefer a modified local cuisine. Meal schedules should permit maximum time in the field for observing wildlife.
- Activities - These must be planned with regard to the age and physical abilities of the group. The group age ranges from 18 to 78 with a mean age of 57 years old.
- Itinerary - A diverse assemblage of plants and animals within their natural community is important to an itinerary's success. A successful half-day experience should include at least one special event or wildlife species and several other observations.
- Seclusion - Tour groups prefer not to share their field experiences with other groups of tourists.
- Trails - Some tourists prefer interpretative signs and well-developed trails while others feel they detract from the adventure experience.
- Guides - Guides are extremely important and most tourists prefer native guides who speak their language. They should know the natural history of plant and animal species and the general area and be familiar with conservation issues.

Sensitivity* of Tourist Group to Interactions with other Groups

USER GROUP	TOLERANCE LEVEL
Mass tourist	high
Nature tourist	moderate
Specialty nature tourist	low
Pure ecotourist	moderate to low
Research biologist	low
Adventure travel	low to moderate
Picnickers	high
Sports related	high

Adapted from: Kuss, Graefe, and Vaske 1990

* Sensitivity is the distraction, dislike or negative perception of being near or around other groups or individuals in the field.

Sport Hunting and Fishing

One of the oldest and most successful forms of low-impact tourism worldwide is sport hunting and fishing. When hunting is carefully managed, it can promote wildlands protection because of the values it places on wildlife and its habitats. Local guides are frequently hired for hunting expeditions, which can provide substantial income to a local economy. Operator profits from sport fishing and hunting can exceed those made through traditional wildlife viewing programs by 200 percent.

However, it is essential that the natural history of the hunted species be understood and that good management practices be implemented. Unregulated hunting and improper management can result in deleterious impacts to wildlife species and their communities. In countries where unlimited market hunting of birds, spotted cats, crocodiles, and other animals is permitted, hunting has caused drastic declines in some species. However, game hunting in Central America has never been as important as in the Old World and is generally limited to bird and deer hunting.

Sport fishing popularity has increased since the early 1980s in Belize, Honduras, and Costa Rica with target species of bonefish, tarpon, and billfish. In Honduras and Costa Rica, sport fish populations are rapidly declining. This decline is attributed to commercial fishing, which uses long lines and drift nets, and to pollution of the bays caused by heavy pesticide use and siltation. Little effort has been put into research to evaluate these problems or to impose regulations. Another problem is lack of revenue. Little money is collected by the government from sport fishermen or operators from fishing licenses or permits, funds which could be used to protect the resource.

Adventure Travel

Adventure travel is a rapidly growing form of travel. It can be classed as ecotourism depending upon the level of comfort and services required by the participants. These travelers seek adventurous exciting activities such as canoeing, white water rafting, scuba diving, surfing, mountain climbing, and trekking. Beautiful scenery, clean rivers, and pristine reefs are necessary for this type of tourism. Tourists participating in these programs

requipment and logistical support. Accommodations vary, ranging from comfortable hotels to campsites, depending on the activity. Guides must be highly skilled in the particular activity and knowledgeable about adventure locations. Adventure guides frequently have only a superficial knowledge of natural history but strong familiarity with the activity and the region.

NATURE BASED TOURISM DEVELOPMENT

Program Developers

The planning of travel programs into wildlands requires a wide range of skills. Developers of wildland programs must be well-versed in a regions' natural history and archaeology and the anthropological perspectives of local people. They must be logistical experts understanding costs, feasibility, and the mechanics of long-term arrangements with lodges and communities. Program developers must assure that activities and attractions are sufficient in quantity, quality, and diversity to interest the travelers on every day of the itinerary.

The Program

If the program is wildlife related, highly charismatic wildlife supplemented by a diversity of other species are required for daily viewing. In addition, tour groups prefer seclusion from other tourists, avoiding crowded parks and reserves. Logistics are another important component. Locations must be accessible by air, vehicle, or foot travel. As a rule, less than 20 percent of the areas worldwide containing wildlife diversity most attractive to tourists meet these criterion. Acceptable access depends on the age and physical ability of individuals in the groups. Facilities should meet the expectations of the particular type of tourist.

Guides and Support Staff

Properly trained nature tourism guides and support staff are critical to success. In Central America countries where tourism is well-developed, such as Costa Rica, Belize, and Guatemala, well-trained wildlife guides are in short supply. Inadequate tour leadership can cause the outbound tour operator to be subject to civil lawsuits in the tour origin country. Airlines have been sued when tours were improperly led and several currently require certification of tour leaders.

Tour Costs

Countries compete with each other for tourism dollars, particularly if they offer similar experiences. Tour costs can be extremely competitive in countries with well established inbound operators, facilities, in-country transportation, guides, food, and entrance fees. Inbound operators must keep program costs down while still making a profit. Competition occurs between countries in Central America like Belize, Guatemala, and Costa Rica which harbor various types of rainforests, dry areas, coastal, and marine natural areas. Central American countries do not compete with African countries like Kenya, with its spectacular big game. This country attracts more international visitors than any other natural area in the developing world. Consequently, Kenyan operators charge much higher rates for services. The natural areas of Central America support spectacular wildlife, but these species are more difficult to observe, and lack the popularity

afforded wildlife in Africa, India, and many insular areas. Consequently, the tourist is willing to pay much more to travel to Africa than to Belize or Nicaragua. The average cost of a nature travel land package in Central America ranges between $80 and $120 per day, while costs in Kenya may be as high as $250 per day.

Itinerary Planning

Undertaking research into new destinations and itineraries can be expensive for tour companies but the cost depends on the existing level of development. In the case of new potential tour areas, expert staff must locate wildlife or other natural features of interest and plan activities, which may cause research costs to climb to $50,000 U.S. per destination. At least 3 years of successful sales are often required to recover this investment. In countries like Costa Rica, with several well-established operators, these costs and risks are greatly reduced. The inbound operators have well-developed programs which they market to foreign operators.

As previously discussed, volume is extremely important, and tourist programs must attract a sufficient number of travelers for operators to maintain business. For example, airlines offer discounts to operators with large numbers of travelers to specific locations, which can double the operators' profits and ability to maintain competitive program costs. Overhead costs including research, advertising, and labor are decreased as the number of travelers increase. Outbound operators achieve these discounts by specializing in destinations like Costa Rica, selling many departures per year to achieve the volume required for profit, or by diversifying destinations. Inbound operators also receive incentives from hotels and vehicle rental companies for higher volume. For increased profits, inbound operators generally diversify their localities and itineraries as well as the clients they serve, such as bird watchers, orchid specialists, sport fishermen, and adventure travelers.

Marketing programs that attract tourists to specific locations are extremely costly. Therefore, it is difficult for organizations planning travel programs to invest substantial marketing funds to maintain these low-volume programs. If a village wishes to develop a facility for individual tourists or small groups, one of the greatest obstacles is the continual marketing required to attract the minimum number of visitors to make the enterprise economically successful.

DETERMINING THE VALUE OF THE WILDLIFE EXPERIENCE

The value of a natural area to tourism is determined by quality of the wildlands including their plant and animal communities; availability and quality of infrastructure; proximity to other locations; and the ability to duplicate successful experiences time and again with each visiting group or individual.

Researchers in Kenya have determined that the tourist dollar value of a lion is $27,000, and that an elephant is worth $500,000 per year. This is based on the marketing and tourist satisfaction that a particular species can provide. The most valuable species are those that have strong drawing power, and operators plan wildlife itineraries around these species of wildlife. An example is the resplendent quetzal in Costa Rica, Guatemala, Honduras, and Nicaragua. Bird watchers, as well as nature tourists, travel many miles to see this spectacular bird. The cost of a group of quetzals that are easily viewed 75 percent of the time may exceed $50,000 per year. Derivation of these figures is explained in Appendix E which lists several species or groups of animals that have varying levels of importance to nature tourism in Central America. The species value to the tourism industry is its ability to draw people to a location. The value of a picture in a brochure, and an operator's ability to assure visibility of the species, is considerable. For example, some visitors choose Costa Rica over Belize because they want to see a quetzal or choose Belize over Costa Rica because of the Jaguar Reserve. Each operator determines the importance of an area's experiences or species of wildlife depending on the clientele.

One factor in determining species value is the ability of tourists to view a species and the pleasure tourists derive from that experience. This value has little to do with species rarity; it may focus on species charisma. Reliability of the experience is also very important. When an operator can consistently take tourists to see an exciting species at one location, the greater the dollar value of that species. This is why the weighted value of a quetzal is greater than that of a jaguar. The opportunity to see a jaguar is so rare that its overall value is low. Operators must strive to view one spectacular animal each field day to keep tourists

satisfied. Other interesting species include howler monkeys, crocodiles, trogons, and several other alluring birds species. Expeditions of specialty groups like bird watchers, botanists, herpetologists, and fishermen are chiefly interested in individual groups of plants or animals, which necessitates a more diverse array of habitats.

The primary logistical challenge in nature tourism is bringing tourists to the wildlife because of the low percentage of wildlife areas that are accessible to tourists. Most wildlands must be within 4 hours of major cities where comfortable facilities are available. Foot travel on trails and roads should be limited to 5 to 10 kilometers each half day. At least two full days should be allowed at each location, and, because groups do not like to share field experiences with other groups, areas should be large enough to handle tourist volume.

The marketability of a destination is determined by diversity, frequency, and accessibility of highly valued wildlife (Appendix E). Ethics require that operators list a species as a "possibility" if it is seen on at least 60 percent or more of the visits. Wildlife tourism has increased markedly in Belize because they have expertly marketed their wildlife and Mayan ruins. Costa Rica is similarly known worldwide for its parks and wildlife and the hospitality of the people.

Table 2-C provides weights given to each activity planned for a nature program. Managers of private or governmental owned wildlands may use this method to plan infrastructure development so that high quality field time is provided. It can also be used to determine whether a location has potential as a nature tourism location. The number of hours scheduled for each activity is multiplied by the weight factor. The column of figures is added up, with the sum representing the quality of the trip, and this figure is divided into the land trip cost (deducting the cost of the international airline ticket if it was included in the cost of the package).

A 10-day Central American program provides an average of 22 quality viewing hours with a value of $68/hour based on a $1,500 program. If the weighted figures are lower, costs per hour will rise, indicating that the tourist is paying more for the most important field time. Costs per hour can be reduced by spending less time travelling between sites, travelling between locations during non-prime viewing times, and adjusting time in cities.

TABLE 2-C. Weight Factors for Determining the Cost/Hour of Wildlife Nature Tours

QUALITY FACTORS

ACTIVITY	WEIGHT
Prime Time Viewing (1 hr. before sun to 10:30 a.m.)	2.0
Moderate Time Viewing (early evening)	1.5
Traveling and Viewing	1.0
Nonviewing Traveling (midday)	-0.5
Nonviewing Traveling (during prime time viewing hours)	-2.0
Daytime Hours Spent in Cities	-1.5

METHOD

Weight X Hrs. in that activity = Quality Hours.
The Sum of Quality Hours = Quality.
Weighted Hours divided by Trip Cost = Quality Value.

Ashton 1991.

TRENDS IN TOURISM

According to Clark's 1991 article, nature tourism worldwide generates an estimated $2 to $12 billion annually (depending on the definition of nature tourism). Nature tourism constitutes approximately 22 percent of the $55 billion spent on all forms of international tourism. Tourism is ranked among the top three methods of obtaining foreign exchange in Costa Rica, Guatemala, and Belize. However data on nature tourism is quite sparse and is rarely collected as part of tourism reports in most Central American countries.

Nature/Cultural Tourism is the fastest growing area of "ecotourism." Since 1982, the growth rate has been nearly 20 percent per year in Costa Rica and Belize and 12 percent in the Caribbean.

This phenomenal growth is influenced by several important factors:

- Most countries can be reached by air within 24 hours from most western countries;
- Development of infrastructure, including roads and hotels, has facilitated comfortable transportation and lodging;

- Participants in the environmental movement in the 1960s are within a socioeconomic class that allows them to participate in these programs;
- Books, magazines, and television are replete with articles and programs on wildlife and wilderness areas;
- Spectacular photographic and video presentations displaying exotic areas have motivated people to visit these places;
- The growth of nature tourism is stimulating large investors in Central America to develop infrastructure such as hotels, lodges, local airlines, and boat facilities;

Adventure travel tourism in Costa Rica has grown by more than 50 percent per year since 1984. Tourist visits to protected areas grew by 100 percent in 1991 and, based on projections for 1992, will double again. Increases in adventure travel in Guatemala and Belize have also caused operators to study the feasibility of travel into Nicaragua. With this growth, operators must become concerned about environmental impacts and management of human and solid wastes. Some operators have developed waste management programs while other operators and individual travelers leave unsightly wastes behind. The regional importance of adventure travel in Costa Rica was considered in the placement and management of hydroelectric facilities, and these considerations have helped preserve terrestrial and aquatic biota.

The greatest trend in Central American tourism, however, is in mass tourism, especially in Costa Rica, Guatemala, and Belize. This growth has been stimulated by peace and stability in the region and promotion by governments, airlines, and programs like Mundo Maya. The mass tourism operators in North America and Europe have been encouraged to extend their markets to Central America in part because of the increasing costs of visiting traditional mass tour destinations in Europe. The cruise ship industry is increasing its fleet in the Caribbean, is desperately seeking outnew ports of call in the basin, and has marked Honduras, Belize, and Costa Rica as having great possibilities in the late 1990s.

- CASE STUDY -

XAVANTE RESERVE, GOIANIA, BRAZIL

As part of a low-impact educational program of the Brazilian rainforest, Mountain Travel-Sobek has arranged a program with the Xavante Indian nation where ecotourists visit villages in a nondisruptive manner. The Union of Indigenous Nations, an NGO (nongovernmental organization) that is an advocate for indian land and resource protection, receives a fee in return for the exchange. The funds are used to protect the lands of the reservation and the socioeconomic and cultural structures.

A limit has been set for 18 people per group with a maximum of six groups per year. The groups are rotated between three villages, and each village has developed its own tourism strategy formalized into an agreement which includes construction of a visitor center and demonstration village. The elders of the village consider these strategies important because they demonstrate the value of the old traditions to young people.

The Xavante people have been involved through trade with other cultures for approximately 50 years. Average income of the village is approximately $3,300 per year from selling bananas, corn, manioc, and forest products. Each Xavante village receives income from tourism at a rate of $250 per traveler with an expected income of $3,600 U.S. per year.

Other income spent in the region includes transfers, meals, and hotels in Goiania, totalling $330 per person. Meals, guides, and other expenses in the village total $1,375 per person. The total trip cost per person, which includes international airfare, is $4,883. The money is paid to the Xavante Nation rather than directly to the villages. The funds are subsequently used in manners nondisruptive to the tribal cultures.

THE KEY PLAYERS IN THE TOURISM INDUSTRY

To understand the tourism industry structure and the current role of tourism within each country, and to recognize the potential for the future of the tourism industry, it is important to recognize the key players. These are defined below using terms common in the industry.

Tour Group--A group of people assembled to travel to one or more destinations to experience activities that fulfill a common goal or purpose.

Tourist--A person who travels for pleasure.

Travel Agent--The person or company that makes reservations and arrangements for the tourists.

Outbound Operator--The planner and/or purchaser of itineraries, programs, and services at the destination. The outbound operator does most of the advertising for the program.

Inbound Operator--The company or individual who researches the tour; makes the arrangements for visits, hotels, food, vehicles, guides, entertainment, and programs; and handles the operations at each destination.

Tour Conductor--A person who handles logistics and group dynamics. This person may be the liaison between the tourists and the inbound operator and/or tour guide.

Tour Guide--A person who is extremely knowledgeable about the sites being visited and the topics of interest to the group. The guide may come from the tour group's country or from the host country and usually remains with the group throughout the tour.

Local Guide--The local guide is a person hired from a local community that has knowledge about the area, current conditions, and particular animals and plants. A single tour may have a different local guide at each itinerary location.

Tour Ship Companies--Tour ship companies not only sail ships but also market programs and provide support for operators. They greatly influence the tourism industry.

Airline Tour Office--Airlines not only carry travelers for other operators but may also plan and promote their own tours or assist other tour operators to plan and advertise itineraries.

Minister of Tourism--The minister of tourism or director of the national institute of tourism of each country has the tourism industry as the major part of his/her portfolio. In some countries, the minister has control over all tourism including that which may involve protected areas. The minister of tourism receives a budget to promote tourism to the country. Traditionally, mass tourism is the target of the minister's promotion.

Tourism Association--A tourism association is a professional organization which is made up of professional members of the tourism industry. Each Central American country has a tourism association.

UNIT 3

GOALS OF ECOTOURISM

WHAT IS ECOTOURISM?

The word ecotourism has been popularized since the late 1980s. The earliest appearance of the term in the literature was in Miller's, *Planning National Parks for Ecodevelopment*, 1978, published by the Center for Strategic Wildland Management Studies, University of Michigan. The term found its way into the sustainable development movement within the conservation community. In most cases, the term has been used to mean low impact tourism that financially supported conservation in protected areas. In this way "ecotourism" was seen as providing an economic benefit to communities adjacent to protected areas. This was to be done by providing jobs and income to the community to offset income from timber cutting and other forms of environmentally degrading enterprises.

> ECOTOURISM is any tourism planned and carried out in an environmentally sound and sustainable manner that protects local cultures yet supports their economic development.

Historically, ecotours were developed so that negative impacts to natural, human, and economic resources were minimized while positive impacts such as economically supporting protected areas, supporting local and regional economies, and enhancing environmental education were amplified.

A working definition of ecotourism is stated as: any tourism development which is planned and carried out in an environmentally, socially, and economically sustainable fashion.

The term sustainable describes any process or activity which uses or impacts resources in a fashion that does not deplete or damage them over time.

Narrow Versus Broad Definition of Ecotourism

The narrow definition of "pure" ecotourism, discussed in some literature, confines it to a very small segment of the potential market. The narrow definition limits ecotourism to very small groups, utilizing minimal facilities, with little impact on local cultures and natural communities but providing support for the conservation of natural areas. Only a small number of tourists who are currently using protected areas in Central America are included in this category. The proportion of the travelers coming to the region as "pure ecotourists" diminishes every year. For this reason, a broader definition is used by the Paseo Pantera Ecotourism Program (PPEP). The PPEP definition encompasses all forms of tourism that may make use of protected areas, key natural resources, and have major impacts on the region. The tourism and conservation government officials and the tourism private sector can then realize that all forms of tourism should be carefully studied to determine both positive and negative impacts. This perspective makes the potential for tourism's support of conservation much greater.

The Broader Perspective...

Ecotourism:

- is tourism that utilizes natural areas with specific purposes involving nature, cultural, or archaeological study.
- is tourism which takes groups into natural areas but protects the natural areas by limiting traveler activities to protect the resource.
- is tourism that economically supports the conservation of protected areas.
- is tourism which evaluates and controls overall industry impacts on an area or region, and is organized with input from all stakeholders who may be impacted by its development.
- is tourism which is sustainable and produces appropriate levels of profit and income stability for all proprietors involved.

The Historical Perspective...

Anthropologists have promoted "ecotourism" as a form of travel which protects the cultures and social values of indigenous peoples in visited

areas. Ecotourism has meant economic development for the host communities, and low volume, low impact tourism has always been emphasized. Few truly successful, long-term case studies exist. The Baboon Sanctuary in Belize is an example of a community ecotourism project that is having moderate success. The most successful long-term, model program lies in the buffer zone of Kruger National Park, the Sabi Sabi Game Reserve in South Africa. (See Unit 5.)

DATA GATHERING ON ECOTOURISM

Statistics on nature tourism frequently appear in the literature. The tourists dollar expenditures which are compiled by the World Travel Organization and others are frequently cited throughout publications on ecotourism. In preparation of this document, we discovered how these data were compiled.

Number of Tourists

The number of tourists visiting each Central American country is compiled from immigration cards. Each person traveling into the country that marked "tourist" is counted in the statistics. No information is provided on the type of tourist, destination, or number of days spent on these activities.

Because people frequently mark "tourist" when visiting family members or when entering the country for brief business (some countries require visas for business or work thus people get around that requirement by marking "tourist"), the numbers of actual tourists may be considerably inflated.

Value of Tourism

The dollar value of tourism reported is based on tourism dollars spent and recorded as bank transactions. This includes bank transfers and credit card purchases. In travel to meetings and business travel, this may be representative of the dollar value since many of these travelers use bank credit cards in paying for hotels, food and transportation.

This type of reporting however does not take into account cash transactions between tour operators or cash purchases made by tourists while visiting the host country. A number of operators have reported that the average daily expenditures of their nature based tourists on all-expense-paid trips ranged between $75-$100. This money was spent locally on drinks, mementos (local artifacts, art, books, other objects), and tips to guides and drivers. None of these figures are reported in the current method of tallying the economic importance of tourism.

Collecting data on cash transactions in tourism is difficult since operators, guides, and other recipients are reluctant to give accurate accounts of their income because of taxes and for other personal reasons. This makes gathering accurate data on the economic impacts on communities extremely difficult.

HOW TO USE INFORMATION IN ECOTOURISM PLANNING

Proper planning for tourism must be based on the numbers and types of tourists visiting protected areas. Studies that render information such as that listed below provide park managers the information they need to develop the appropriate infrastructure to serve each traveler type and at the same time to protect the park's resources. For example, if Costa Rica's parks would have collected this data over the past ten years, the officials would have known that the type of visitors using the parks began to change

Examples of Park Visitor Data Required for Planning Purposes

Breakdown of Visitors Based on Reason for Visit.

Bird Watching	Education
General Nature Viewing	Research
Photography	Family Outing

Breakdown on Time Spent
- Half Day
- Full Day
- More than One Day

Traveler Type
- Individual Traveler
- Family
- Part of a Tour Group.

Age of Traveler

Accommodations
- Locally
- In City
- Other

along with the rapidly increasing numbers. This would have permitted the managers to prepare for the 100 percent increases in visitation in 1991 and 1992 (as reported by the National Park Service). Accurate counts of visitors will give managers an idea of how much the park should charge in fees to meet budgetary needs.

The Importance of Data

A number of research papers indicate that the reason for a less than accurate accounting of tourists is the cost of data collection and lack of record keeping technology. Also, there needs to be more communication and cooperation between governmental agencies and the private sector. This data which is produced by a number of international travel organizations is widely quoted and used in publications discussing tourism and sustainable development. Rarely are the methods used to gather these statistics described. Furthermore, dollars generated by ecotourism are reported as a lump sum. Without a characterization of expenditures the value of the data is diminished. For example a recent article in *Mesoamerica* stated that $266 million dollars was generated by ecotourism to Costa Rica per year. Some questions brought to mind about such figures are:

- What forms of tourism are included? Do these figures include the cash transactions that are the normal mode of operating in ecotourism and therefore often go unreported?
- Does this include dollars generated just within Costa Rica or does it also take into account fees collected and kept in the country of tour origin?
- Does the $266 million include only monies directly generated by tourism or does it take into account indirect economic effects such as creation of additional jobs in building or supply industries due to increased demand.

A number of authors, including K.L. Richter, have indicated that the citing of general figures without stating what they really represent may very well be causing more harm than good. In the absence of good data, it is very difficult to determine the current or potential impacts of ecotourism or to compare these impacts with other forms of economic development.

Tourism Data in Protected Areas

Park managers, without an accurate count of visitors cannot determine how much one would have to charge for an entrance fee to meet the budgetary needs of the park. Until recently, very little effort was made to collect information on tourism in protected areas, except those world-class areas like Tikal National Park and the Cloud Forest Reserve at Monteverde.

ECOTOURISM AS SUSTAINABLE DEVELOPMENT IN CENTRAL AMERICA

Ecotourism, as defined by the Paseo Pantera Ecotourism Program, is based on the industry's ability to carry out its business in a sustainable manner.

> The question is, how can tourism be developed as a sustainable industry and still be profitable?
>
> Another question is why hasn't nature based tourism done a better job in supporting protected areas and why was it not developed in a sustainable manner in the past since both short- and long-term success depends on an unspoiled environment?

A summary of the literature and information from interviews conducted with both the private and public sectors in several Central American countries indicate the following:

- Tourism has gradually developed from small to large tour operations, with little control or regulation. Small operations have grown into large businesses and more operators have gone into the business. This has led to many operators using the same areas for their clients.

- Controls and regulations were not put in place since they were/are viewed as possible stumbling blocks to economic development.

- Lack of planning by all sectors for tourism. Most protected areas in Central America did not use a visitor management plan, or have plans that take into account the type of tourists using the area. Fees need to be set to contribute to appropriate protected area budgets.

- Lack of training and understanding in all sectors. Protected area personnel do not have training in working with tourists, most tour operators do not have biological or conservation training, community leaders do not understand tourism or conservation.

HOW TO MAKE TOURISM SUSTAINABLE

How do we tell the difference between regular tourism and ecotourism? How does a project become an ecotourism effort? These are all legitimate questions and the answers are not simple, it involves the following planning segments:

The Government's Role in Making Tourism Sustainable

Leadership in properly developing tourism starts with national governments. Governments should plan for tourism development. This includes international cooperation to determine the natural and archeological areas which complement each other and can be developed to decentralize tourism impacts.

National governments need to develop land use plans and restrictions on development. Tourism has its place as does agriculture and sustainable forestry. These plans should be based on an inventory of natural resources and current land use.

National governments should require tourism developers to provide studies and reports on the impacts of proposed projects. These reports should include impacts on protected areas, natural resources, infrastructure such as roads, airports, communities, and other economic developments.

National governments should have a method of public review on proposed development and should have a process in which the proposed development impacts can be mitigated. During this process, local communities impacted by the proposed action should have access to the plan. Clear, written agreements should be provided for public and governmental review.

National governments should work together in the region to establish methods in which tourists pay for use of protected areas, and in which the tourism industry pays for use of natural resources and public infrastructure. Local impacts should be mitigated for and local communities should receive compensation for these impacts.

The Protected Area Manager's Role in Ecotourism

Protected area administrators must develop management plans for tourists based on:

- Protection of the area's biodiversity and habitats.
- Numbers and types of visitors coming to the protected area.
- The need for infrastructure necessary to support the types of visitors attending the park.
- The need for staff trained in both management and conservation.
- Proper methods of collecting entrance and user fees from visitors based on their ability to pay and the use they make of the park.

The Tourism Industry's Role in Creating Sustainable Development

The tourism industry should:

- Protect the natural resources of the host country since these are the raw materials on which the industries success depends.
- Establish regional and national organizations which encourage operator cooperation in planning and utilization of protected areas and development plans.
- Encourage government review of impacts on resources by all forms of economic development so investments in tourism are not adversely impacted by other development.
- Establish detailed planning studies of tourism development to evaluate impacts ranging from the conduct of tours inside protected areas to building hotels or off-loading tourists from cruise ships.
- Work with park personnel on the development of programs. Work toward establishing

development outside the boundaries of parks, in buffer zones, and work toward appropriate infrastructure for park visitors.

- Promote appropriate fees for protected area development and impact fees on communities and natural resources.

- Develop training programs for operators, tour guides, park personnel and other individuals involved with tourism to insure that they are knowledgeable and well trained regarding resources, people, and conservation.

- Create corporate plans which look at long term profits based on the existence of protected areas. Plan carefully instead of reacting without concern to market trends.

- Promote and lobby for the protection of as much natural area as possible within the country. Without it, the basic resource of the tourism industry will be greatly reduced as populations increase.

- Permit local people to have an input in the economic development available to them. Guidelines or regulations governing the transactions between tour operators and local communities do not exist.

UNIT 4

THE IMPACTS OF TOURISM ON NATURAL RESOURCES

Tourism, like any other form of economic development, impacts natural resources. Natural resources include not only wildlife and natural habitats but energy, water, food, and other materials that may be in short supply or expensive in developing countries.

Not all impacts are negative, however. In some cases tourism encourages or funds the development of local infrastructure and other man-made resources in a positive way. Whether the impacts of tourism are positive or negative varies with the type of tourism being developed and the type of resources involved.

TYPES OF IMPACTS

The impacts of any form of economic development can be divided into four overlapping categories. These are direct, indirect, positive, and negative impacts. Direct impacts are those which have a direct effect on the resources, whether that effect is positive or negative, such as the loss of natural habitat due to the construction of a tourist lodge. The lodge may be of benefit to the local economy in the short run, but the loss of habitat could eventually cause the bird watchers to stop coming if they have been coming to see wildlife and the habitat is gone. Also, water supply can be affected directly by increased use and water quality of nearby open waters can be affected by wastewater and sewage from a facility. When a local tourist lodge decides to help the local economy by purchasing its meat and fish from local producers, their purchases may increase demand considerably over local consumption. Then as an indirect impact the fisherman and farmers increase the cost of their fish and meat to everyone, including the local community. Positive impacts are created when the tourists or the facilities used by the tourist industry establish a demand for or utilize local resources in a positive way. For example, the construction of a tourist lodge can provide jobs for local residents, and the lodge can provide a training program for locals to become guides, clerks, food service workers, etc. One example of a negative impact is when tourists or the tourist industry over utilize local resources such as fuel, food, or housing, driving the consumer cost up too high for the local residents to afford. It is increase in volume which drives the economy in the tourist industry and which creates destructive impacts without proper preplanning and infrastructure.

> THE GREATEST IMPACT TOURISM HAS ON ANY AREA, WHETHER POSITIVE OR NEGATIVE, IS CAUSED BY VOLUME.

> **Resources Impacted by Tourism**
>
> Fuel and Electricity
> Local Agriculture
> Food Supplies
> Fisheries
> Water Resources
> Wildlife and Natural Habitat
> Building Supplies
> Forestry Resources

Not all impacts of tourism are negative (Table 4-A). Indirectly, nature-based tourism has increased awareness of the importance of wildlands worldwide and has shown that wildlands can be extremely important to a nation's economy. In some areas of the world, nature-based tourism has become an important source of income directly supporting conservation and protected areas through user fees and taxes.

CENTRAL AMERICAN TOURISM

Regional Impacts

Tourism throughout Central America is growing and will continue to grow as long as peace and political stability continue in the region. International tourism volume reflects the low costs of traveling throughout Central America and the awareness of much-improved safety for travelers in most areas. The relative increased ease

TABLE 4-A. Relative Impacts of Tourism on Wildlands

	NATURAL HABITATS			WILDLIFE			WATER QUALITY			PARK INFRA-STRUCTURE			SOLID WASTE			LOCAL CULTURE			OVERALL		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
PURE ECOTOURISM	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	✪	✪	○	○	○	○
NATURE TOURISM	✪	●	○	✪	●	○	○	●	○	✪	✪	✪	✪	●	○	●	●	●	✪	●	○
MASS TOURISM	●	●	✪	●	●	✪	✪	●	○	●	●	✪	●	●	✪	●	●	●	●	●	✪
LOCAL TOURISM	●	●	○	●	●	○	✪	●	○	●	●	✪	✪	●	○	✪	●	○	●	●	○

ESTIMATED IMPACTS OF TOURISM UNDER VARIOUS CONDITIONS:

A - CURRENT

B - POTENTIAL IMPACTS WITHOUT CONTROL

C - REGULATED TOURISM IN WILDLANDS

RELATIVE IMPACT LEVEL (OF WELL PLANNED TOURISM IN EACH CATEGORY):

○ LOW

✪ MODERATE

● HIGH

SOURCE: Ashton 1991.

with which tourists can now cross borders and the expanding regional transportation systems also have affected the popularity of tourism. Where operators in the past may have developed only one-country itineraries, they are now more likely to develop and be able to sell multi-country itineraries. This allows them to offer World Heritage sites such as Tikal National Park in Guatemala, Copan in Honduras, and a national park in Costa Rica all during the same tour.

These programs have considerably increased tourism to well-known locations. Visitation to Tikal has grown to 85,000 visitors annually and is steadily increasing. The impact of tourism on the natural resources of these areas due to overuse can only be considered a negative impact. The current fee structure does not provide income from visitors for conservation of these areas, and the management plans for these protected areas do not take into consideration the increasing level of use. With

TABLE 4-B. Positive Regional Impacts	Negative Regional Impacts
Increased airline and ground transportation systems leading to regional economic growth and support	Over utilization of world heritage sites and other well-known natural locations
Regional cooperation in solving economic and logistical issues	Improper use of coastal areas which may affect regional fisheries
Multi-national cooperation in developing regional protected areas potentially supported by tourism	Increased use of fuels and other resources within the region
Increased awareness within regional and international development agencies of the potential for tourism to be a viable and sustainable form of economic development	Increased competition between countries to attract tourists leading to a lack of concern for environmental and human impacts of tourism development

appropriate restructuring, these negative impacts could be turned into more positive impacts.

Tourism growth in Central America has stimulated cooperation and a regional view of the industry. Regional programs like Mundo Maya, Secretaria de Intergracion Turistica Centroamericana (SITCA), Paseo Pantera, and others are working toward analyzing the current situation and developing methods to solve regional problems associated with tourism (Table 4-B).

National Impacts

The current state of tourism development varies greatly between countries within the Central American region. Costa Rica and Belize are two countries within the region in tourism has steadily developed since the late 1970s. Guatemala had considerable tourism development prior to the 1970s which declined thereafter due to political strife. The tourist industry in Honduras, on the other hand, never had an opportunity to develop because of regional unrest. Due to the war in Nicaragua, there was no major tourism industry development in that country prior to the late 1980s. Panama, El Salvador, and Nicaragua have only begun active tourism development in the 1990s.

The economic impacts of tourism overall appear to be quite high in Belize and Costa Rica where according to national figures, tourism has become the second leading economic development in each of these countries. This has made politicians and the business community aware of the importance of this industry. They are becoming more cognizant that the tourism business relies on natural resources to survive. However, the environmental impacts of tourism in each of these countries are negative simply because planning and control of tourism in both countries has not been effective in curbing overuse or in obtaining economic support for infrastructure and protection of natural areas.

Tourism impacts on the natural environment include direct and indirect damage to plant and animal communities. The presence of tourists may induce detrimental population or behavioral changes in wildlife species. These changes are difficult to measure due to subtleties that require long periods of time to detect. For these reasons, simple monitoring systems for species and communities should be implemented by protected area personnel, guides, and tour operators. There has not been much monitoring research conducted and much more information is needed to assess the human impacts of tourism on wildlife.

Indirect impacts may include those accompanying development of roads that open access to undeveloped land. Similarly, local people may begin to exploit local wildlife for such materials as feathers, teeth, and skins for handicrafts to sell to tourists, or they may overfish local reefs and lakes to supply food for local lodges. However, through education, planning, and regulation, many of the negative environmental impacts that result from uncontrolled tourism can be avoided. Indirect impacts are primarily the result of infrastructure development. For example, if a road or compound is built in the rainforest, it may open the canopy of trees, creating an area where different plant communities that do not naturally occur there can take hold. If the roadway or compound area is extensive, the "ecotone," or interface area, between different ecological areas (e.g., artificially open areas and forest) may cover many hectares, which affects species composition as well as population abundance.

Positive indirect impacts are also important. The presence of tourists in protected areas can supply economic justification to governments to sustain these protected areas. Tourism can produce jobs and income for many people. When the link between jobs and environmental health is enforced, local people have more incentives to protect natural habitats and the wildlife that attract tourists.

Direct impacts from tourists are also positive and negative. The presence of tourists in areas prone to poaching, looting, or market hunting may curtail these activities. Also, the use of protected areas by tourists and tour companies can produce protection and management advocates. Nature tour operators can be important advocates for protection of the environment if their livelihoods are threatened.

Studies with appropriate methodologies for monitoring changes in natural communities are badly needed in wildland areas. Protected area managers and many tourism operators are emphasizing the necessity of these studies. In addition, mechanisms are needed for implementing changes in visitor use when adverse effects occur.

Coastal and marine ecosystems can be particularly valuable to tourist development and subsequent traffic. Coastal areas are very popular among tourists for recreation and the unique natural

communities they offer. These areas can be especially fragile, with many native species of plants and animals, as well as important nesting and mating grounds. For these reasons, coastal zones need regulated planning and management to curb negative effects from tourism.

Environmental impacts can be evaluated on direct and indirect levels. Several activities impact species directly, such as hunting, fishing, invasive research, and collecting of plant and animal species. In areas where these activities have already been determined to be acceptable uses of natural resources, circumstances, impacts should be measured according to sustainable harvest methods. A sustainable harvest is one in which the harvest is a proportion of the population and which does not reduce the total number below the critical percentage necessary for equilibrium. The rate of sustainable harvest is unknown for many species, but research is currently ongoing by the IUCN crocodile specialist group to investigate sustainable harvest levels. For example, crocodilian researchers have determined that up to 15 percent of the crocodilian population (e.g., crocodiles, alligators, or caiman) can be removed from many populations without causing changes in the average number of animals. The greatest problem is obtaining information on population dynamics to determine the maximum allowable harvest. Many conservation-oriented hunting and fishing operators regulate their harvest, especially if they are restricted to specific areas of operation. Many sport fishing operations now recommend that anglers release their catch rather than keeping it for a trophy. As an example, billfish operators on the Pacific coast of Costa Rica now ask that all fish be released and are lobbying for enactment of such legislation.

DEVELOPMENT OF TOURISM FACILITIES

Tourism facilities can include hotels and lodges, airports, roads, trails, and campsites within wildlands. A variety of impacts need to be considered when evaluating how tourism will impact habitats and wildlife.

Along with boats, lodges and hotels release human wastes directly into rivers and streams. Sewage treatment is a major problem in tourism development which is related to volume. In several wildland locations no facilities exist for waste removal and serious waste buildup and contamination occurs. Some Central American operators police their own groups by using portable toilets and removing all their wastes. Many governments have regulations on waste treatment facilities for lodges and hotels, but these are rarely enforced in wildland areas. Rich tropical soils, heavy rainfall, and shallow water tables make septic tank systems vulnerable to failure and inadequate for larger facilities. When waste treatment systems fail, the problem is frequently ignored, and the untreated waste enters the nearby surface waters. Technologies required to handle large volumes are costly and difficult to obtain. Composting, however, is one promising method of waste processing.

As previously discussed, the construction of hotels and lodges also has significant negative effects on the natural environment. Lodges are normally placed in locations close to natural attractions yet near to roads for supplies and comfortable transport. Lodges that cater to nature tourists highlight the importance of good service and food and high quality viewing of native wildlife close to the dwelling. Much discussion has focused on how lodges should blend into the environment in protected areas by utilizing native vegetation. Examples of such lodges exist in Costa Rica, Guatemala, and Belize. However, due to difficulties in implementing technology for waste treatment and appropriate use of energy, many of these lodges still negatively impact the natural community.

Solid waste in wildland areas is becoming a large problem, particularly since foreign tourists come from throw-away societies. Despite efforts by many

> Infrastructure in the park or protected area must be suited for the type of use and volume of tourists. This is frequently problematic as demand for use of an area and subsequent increased visitation by tourists often occurs before the proper infrastructure, such as roads and facilities, is implemented.

KEY POINTS IN DETERMINING IMPACTS OF TOURISM DEVELOPMENT

What are the specific features including geographic location, physical landforms, and plant and animal species that make this site attractive for tourism facility development?

What specific habitats, including plant and animal species, will be removed when the land is cleared? (Is a species list available?)

Which specific habitats on the site might be needed in the future to shelter particular plant and animal species in order to maintain the attractiveness of the site for tourism purposes?

Will roadways into the area increase the potential for other development within the wildlands, eventually affecting the attractiveness of the tourism site?

Is the site in a protected area or the buffer zone, or on private land which might offer long-term protection for those features which made area attractive to tourism development? Will the site location detract from the natural landscape?

Does the building and infrastructure blend into the natural and cultural landscape?

What measures, such as economic or regulatory, are being taken to protect natural communities in the area?

Is access to protected areas controlled and monitored?

What is the size of the planned facility and what services will it provide? From where will fresh water be taken, what is the estimated rate of uptake, and how will this affect the local community water supply and natural aquatic communities on or near the site?

What type of sewage treatment facility is being planned and how will it affect the attractiveness of the area for tourism activities?

What plans have been made for solid waste disposal in relation to projected tourism volume and how will disposal methods/sites affect long-range attractiveness of the area for tourism? What are the projected short- and long-range needs for energy for the facility and what are the planned energy sources?

What measures have been taken to protect the environment from petroleum spills and air and noise pollution?

What local human resources are available and what programs are being developed to train guides and personnel to function both on and off site?

tour operators to encourage people to leave trash-producing materials at home, tremendous quantities are brought into wildlands and are disposed of at

lodges, leaving the operator to dispose of the garbage. Many lodges and parks in wildlands areas use a pit or ravine to dump waste materials. As wilderness areas become increasingly popular, waste treatment will become more important. Without regulation, water quality will be seriously impacted for many miles, affecting natural and human communities. Loss of natural areas due to improperly planned and executed development projects can be devastating on regional and local levels. Large development hotels frequently institute a "bare ground policy" requiring removal of

all living things before construction. An example is the loss of mangrove communities on many of the islands along the Belize barrier reef. Proprietors of many hotels deemed red mangroves unsightly and destroyed hundreds of acres without consideration for their ecological importance to the reef. Long-term effects due to disruption of the natural ecosystem may be irreversible.

IMPACT OF TOURISM ON WILDLIFE

Different species of wildlife have different levels of tolerance towards interaction with humans. Some species of wildlife appear to thrive in response to increased human presence, partially due to expansion of habitats and food sources. Meanwhile, less tolerant species tend to avoid human encroachment, which can cause population decline or relocation.

Some tourist activities have greater impacts on wildlife than others. Nature tourists may watch a bird or monkey for less than 5 minutes, but if the group consists of bird photographers, the duration of observation may be longer, especially if the entire group wants a picture. Impacts also greatly increase as tourist activities change from passive to active observation (Table 4-C). For example, research indicates that animals respond negatively to loud groups with tape recorders compared to small quiet groups.

Impacts may also vary by season and location within the animals' territory. Different species are more susceptible during different periods of their life cycle. For example, birds showing minimal impacts during some periods may be intolerant to human presence during nesting, resting, or feeding periods. Negative impacts from tourists on sea turtle nesting beaches are another example. Uncontrolled tourists often use flashlights as nesting females approach the beach, which confuses the animals and can adversely affect nesting. This is a serious problem at Tortuguero in Costa Rica and several Pacific turtle nesting beaches.

Another example of tourism's impact on wildlife is the situation involving deer in the Kanaha Tiger Reserve in India. The Kanaha Tiger Reserve was originally open from sunrise to sunset every day during the dry season. Tourists were restricted to park vehicles and were driven by park drivers along designated roads. However, researchers noticed that sambar and other deer commonly seen in the park were becoming less accessible to viewing while population counts of deer indicated no significant changes. Forest guards pointed out that deer near roadways moved away when vehicles were present during midday resting periods. They closed the reserve from noon to late afternoon, and the deer reportedly returned to roadsides where they were again easily observed.

VISITOR IMPACT ON PROTECTED AREAS

Tourist Volume and Carrying Capacity

The importance of volume to the tourism industry was explained in Unit 1. However, the volume required for a profitable tourism industry can cause many negative environmental impacts. The higher the volume of people, the greater the negative impacts will be on the natural environment. Much of the work conducted on visitor impacts addresses effects on soil compaction, trails, campsites, water quality, and infrastructure. Only recently have impact studies been published on wildlife, and the majority address only temperate zone wildlife. Many researchers have indicated that research done in temperate habitats on human impacts and on carrying capacity have little validity in the tropics. Most studies do not characterize visitor types or their activities. Carrying capacity, or the number of people that can utilize an area without degrading it, is an important tool in visitor management. However, volume is not the only factor that must be considered in determining carrying capacity.

> THE HIGHER THE TOURIST VOLUME THE GREATER THE POTENTIAL NEGATIVE IMPACTS.

Another factor critical in assessing impacts is the level of supervision accompanying tourists when they visit protected areas. When trained guides or group leaders accompany tourists, they are more likely to abide by park rules and follow environmentally and culturally sensitive codes of conduct. Codes of conduct have been suggested for tourists by a number of different groups but have not been implemented on a large scale. The enforcement of rules and regulations by guides or group supervisors is frequently the only method of control over visitor behavior.

TABLE 4-C. Some Impacts Tourism May Have in Protected Areas	
DIRECT	**DIRECT**
Entrance fees can support protected areas, protecting vital habitats.	Behavior changes in wildlife due to human presence
Natural areas can be protected by government or private preserves	Change in usual home range of wildlife populations in response to human presence
	Decrease in wildlife population size due to human presence
INDIRECT	**INDIRECT**
Increased local income reducing need for nonsustainable uses of wildlands	Changes in habitats and microclimates due to human presence
Increased knowledge and education, public awareness	Increased use of local wildlife and fish for food to supply tourists
Increased political pressure to preserve wildlands due to economic importance	Increased use of resources which increases exploitation

Several types of impacts occur on plant communities, the most obvious being collection and trampling of plants. Day visitors and campers may cut wood for cooking or other uses. Specialty tourist groups such as orchid or bromeliad collectors can have severe negative impacts on plant populations. If development includes camp grounds, picnic areas, roadways, trails, and waterways for tourist boat traffic, the impact on the natural plant communities can be quite extensive

As vehicles and people traverse natural areas, plants are mechanically damaged (e.g., broken leaves and stems), which can disrupt plant growth or cause the plant to die. As impacts increase, roots of larger plants may be exposed and soil structure and percolation ability may be affected. Forested areas can be more sensitive than drier grassland communities, and mountain communities tend to be particularly sensitive to these types of impacts. Management of visitor areas, such as clearing and introduction of non-native plants, can also affect natural plant communities. This can introduce diseases to which wild species have no adaptations for protection.

Erosion and loss of ground cover from tourists' activities can be visibly obvious, which is not the case with impacts on wildlife. It is difficult to assess ecologically significant impacts on wildlife by tourists. Some of the most important questions to address include the frequency that animals can be disturbed without causing behavioral changes, which wildlife species are more sensitive and more tolerant to tourist perturbation, and which tourist activities cause more disturbance compared to others. Observations indicate that negative impacts can be reduced if exposure to tourists is controlled with lower noise levels and subdued activity. The number of tourists, distances between tourists and wildlife, and time of visitation are other variables that can influence impacts.

Impacts by tourists on aquatic ecosystems have also been poorly studied, and little information is available on sewage impacts on tropical freshwater and marine ecosystems. However, nutrient loading in streams and lakes or tropical reefs may have serious effects. Researchers have demonstrated that erosion from roadways and trails often causes increased stream siltation, which negatively affects wildlife. Oil from roadways, boats, generators, and other sources can also cause damage to water resources, an overlooked issue in many tourist operational procedures.

Infrastructure Impacts: Roads and Trails

One of the most significant impacts that any form of economic development has on wildlands is the construction of roads. Roads open the area to increased access by people who are looking for farm

land. Timber harvest also opens areas to invasion by local peoples in need of agricultural land who may practice slash-and-burn agriculture and indiscriminate hunting. Construction of infrastructure also draws people who subsequently establish communities in the vicinity.

> ROAD CONSTRUCTION IS POTENTIALLY THE MOST DAMAGING FORM OF DEVELOPMENT RESULTING FROM TOURISM.

A number of large hotel corporations and investors are examining the possibility of developing eco-lodges deep in the interior of wildlands such as the Peten in Guatemala. In lieu of constructing roads, proprietors are discussing building landing strips for small aircraft to shuttle tourists and supplies, which would reduce invasion by development interests. However, problems exist with the military in granting permission due to security concerns and potential problems with drug runners.

Boats are efficient modes of travel in lowland forests, mangroves, and marine habitats, and they naturally regulate movements of people. The driver determines the amount of time spent in an area and chooses the sites visited. However, careful planning is needed when developing these trails through natural habitats and consideration should be given towards the various types of tourists utilizing them. Tourists that lack special nature interests are usually satisfied with scenery and a sprinkling of wildlife, while nature tourists want to view specific species (Table 2-B) for a full wildlife experience. Specialty groups like bird watchers, herpetologists, and wildlife photographers require more intensive wildlife experiences.

There is some indication that high levels of boat traffic can cause changes in natural communities near boat paths. If boats are handled improperly, erosion can cause problems by changing river bank microhabitat and can cause tree falls. In addition, some species of wildlife may change their behavior patterns to avoid boat paths.

Along with careful planning, well-trained boat drivers and guides are vital to long-term protection of natural communities. In addition to providing proper guidance for tours, they can monitor natural communities by maintaining daily logs of species observed, measuring bank erosion, and evaluating boat impacts. When observations from monitoring indicate negative impacts are occurring, alternate routes can be planned.

Boats in marine environments can also cause serious environmental problems. Improper anchorage on coral reefs can destroy large sections of reef within hours. Trained boat drivers and naturalist guides are again vital to protecting these communities. Without these skilled individuals to control the boats that transport tourists to dive or snorkel in sensitive reef habitats, heavy destruction can occur from mechanical damage to the reef communities. Mooring buoys are being used in some areas and can be very important in reducing damage.

Economic Support

In part because protected areas in Central America were not planned or designed for visitors and tourists, there has been no plan to establish a reasonable fee collection system. Most protected areas within the region collect no fees while the average fee collected in those that do is approximately $.80 US. These low fees combined with the low budgets of protected area managers has caused considerable negative impacts to the protected areas of Central America. The lack of fees leads to lack of planning, infrastructure, and trained staff. This in turn leads to destruction of natural habitat and loss of biodiversity.

> THE GREATEST POSITIVE IMPACT THAT TOURISM COULD HAVE ON PROTECTED AREAS IS TO PROVIDE AMPLE FINANCIAL SUPPORT THROUGH APPROPRIATE LEVELS OF FUNDING.

UNIT 5

SUBSIDIZING NATURAL RESOURCE CONSERVATION

Financial assistance for conservation can be divided into two primary categories: direct and indirect. Direct support of conservation includes payments, taxes, and donations that are applied to wildlands conservation. Indirect support includes actions or procedures by agencies, governments, or the private sector that encourage protection of wildlands. These may include provision of jobs and financial incentives to local communities that stimulate interest in conservation of wildlands. Benefits to communities demonstrate the long-term, tangible value to the people of preserving natural habitats. Another important element of indirect support provided by tourism includes environmental and natural history education and research.

> As tourism has increased in Central America, it has become obvious that current fees and budgets for most protected areas are insufficient to manage visitors and prevent habitat loss.

The current direct economic support from tourism for protected areas is far below what it should be. Most protected areas in Central America were not developed with large visitor numbers in mind. Very few protected areas have had tourism or visitor management plans in the past or have them today, let alone plans for establishing user fees.

The potential of indirect support for conservation through tourism is relatively high. One of the greatest forms of indirect support is the growing international awareness of the plight of Central American wildlands. On a national level, tourism, with its growing economic importance, is making governments aware of the need to protect the natural resources that have created the tourism demand.

International tourism has also stimulated donations from travelers for research and conservation efforts sponsored by international conservation organizations.

THE KEY TO TOURISM SUBSIDY: DATA COLLECTION AND PLANNING

The first step in obtaining direct funding of protected areas through tourism is developing an ecotourism plan. The plan must be incorporated into each protected area's management plan. It should include the development of infrastructure and staff. Such a plan provides for not only the protection of the individual areas but sees to the service of the visitors as well. Once the numbers and types of tourists have been identified, the needs of the tourists can be addressed.

PLANNING AND ESTIMATES OF FUTURE USE

Officials responsible for protected areas must work with the tourism private sector and the ministries of tourism to determine estimated growth in all forms of tourism to each country. They should plan together for the types of infrastructure and staff needed for the kinds of visitors expected. This information will assist in the planning stage as well as determine the potential income.

Determining the Cost and Setting the Fees

The reluctance of governments to raise user fees of protected areas creates a roadblock to reaching the

> These questions should be answered for each protected area throughout each country:
>
> - What is the real cost to manage each protected area?
> - How much does the current infrastructure cost to maintain?
> - What will be the required infrastructure cost to meet the expanding needs of tourism?

SOME ELEMENTS OF A PROTECTED AREA ECOTOURISM PLAN:

Staffing

- Provide staff trained to manage visitors.
- Provide guides for groups

Infrastructure

- Develop proper types of trails, rest room facilities, picnic areas, and other infrastructure based on the data gathered on the types of visitors using the area.
- Adding new visitor areas or develop additional areas to serve expanding visitor numbers.
- Establish education infrastructure including visitor centers, written materials, signage.

Policy

- Determine if some tourism development can be completed in buffer zones. This policy should include private reserves, lodges built in buffer zones, development of roads and other infrastructure.
- Establish regulations governing ceilings on visitation to protected areas.
- Establish regulations on use of areas by tourism, including fees for commercial use by tour operators. Require impact assessments by tourism operators.
- Establish local ecotourism councils which include representatives of local communities, businesses, conservation organizations and government officials to advise protected areas managers on tourism plans and policies.

full potential of the tourist dollar. One reason for the current low fee rate is the need to make the parks accessible and affordable to local people. However, some local and most international tourists could afford to pay much higher fees. In fact, several studies have shown that both travelers and operators would prefer to pay higher fees if such fees would provide better conservation and infrastructure in protected areas. However, Guatemala and Costa Rica have laws that restrict the creation of different fees for foreigners and nationals.

As wildlands become overcrowded and natural areas decline from overuse, nature tourism operators are becoming increasingly concerned about habitat protection. Conservation and tourism officials should work with the tourism industry to establish user fee structures, regulations, and management guidelines. Fees must affect all operators equally, and they should be established one year in advance of implementation. This allows operators to incorporate these charges into their fee structures. Frequent and open communication between the tourism industry, conservation groups, and government agencies should be activated through biannual board meetings over specific protected areas to monitor progress and problems.

Parks in Central America could benefit substantially through coordination to develop regional fee structures. This would eliminate differences among countries in entrance fee amounts. Diverse fee structures encourage competition among parks and protected areas acting as an incentive to reduce fees, thereby counteracting the purpose of the fee structure.

IMPORTANT FACTORS FOR ESTABLISHING PARK ENTRANCE OR USER FEES ON A REGIONAL BASIS

- CURRENT USE OF THE PROTECTED AREA
  How many operators and tourists use the site and what are the types of tourists?

- USE POTENTIAL OF AN AREA
  What is the potential for tourism development based on the area's natural attributes, including wildlife, natural habitats, and archaeological sites?
  How accessible is the protected area and its buffer zones?
  Is there a plan to protect certain zones from high volume use?

- LEVEL OF INFRASTRUCTURE
  What infrastructure such as roads, lodges, and trails exists?
  How will the required level of infrastructure change based on current and future considerations?

- DURABILITY OF RESOURCE
  How reliable and available is this development for the user?
  (Operators must be able to use the area frequently.)
  Is use of the resource seasonal?

- REGULATIONS
  Does local law and interpretation of the country's Constitution permit the creation of a tiered fee structure, charging foreign tourists more and local residents less for using the resource?

- MARKETABILITY
  Will the current user market accept the level of user fee suggested?
  Can the needed income be obtained from the projected volume of tourists at that level of user fee?

structures would help to disseminate funds and perhaps disperse demand for reserves throughout the region.

Our review of fee structures for parks and preserves throughout Central America revealed that most natural areas charged no fees or that fees were very low. Many inbound operators agree that fees are lower than tourist willingness to pay.

Entrance fees for local visitors with recreational purposes should be based on the economic structure of the community, staying within the local visitors' ability to pay. Maintenance costs and cost of personnel required for protection should be incorporated into fees. Each preserve that has significant tourism potential should set fees accordingly. By comparing reserves worldwide, criteria can be created for use in establishing fees. It is important to know how much a reserve can charge without pricing itself out of the market.

THE LESSONS OF USER FEES

In the Galapagos, the park fee is currently $60.00 per person while in Monteverde, Costa Rica, the reserve charges $12.00 per day. In Africa, much higher prices are charged, such as the Parc des Volcan in Rwanda which charges $150.00 per person to see mountain gorillas. In Botswana's national parks, $85.00 per person is charged.

Overall costs for tours and travel to the neotropics are approximately one-half the costs to Africa and Asia. This is important when considering the level of fees that can be charged without damaging the market since not all parks and reserves are equals in attracting nature-based tourists. There are several protected areas in Central America which

have great potential for sustaining high interest in the tourism industry. Their combination of wildlife, infrastructure, and potential for maintaining a high world profile to assist in marketing will allow these premier areas to charge higher fees. Potential fees should encompass market constraints of supply and demand, and be sufficient to sustain infrastructure and protection.

Premier protected areas like the Belizean Reef, Tikal, the Monteverde Rainforest Preserve, and other similar areas could charge a fee of U.S. $25.00 per day. Intermediate parks in Central America could charge up to U.S. $15.00 per day, while parks that support just day visitors or that receive low numbers of tourists should charge lower fees.

> **PREMIER** parks or protected areas are those with a unique combination of attractive wildlife, sustainable infrastructure, and characteristics which have potential for positive marketing to maintain a high level of tourist interest.

Competition among natural areas for tourist dollars occurs worldwide. For example, more tourists want to visit the Cloud Forest Reserve in Monteverde, Costa Rica, than La Tigra National Park in Honduras due to the well-publicized popularity of Monteverde's flora, fauna, facilities, and guides.

WHERE DOES THE MONEY GO?

Currently all fees from national parks and reserves in Central America are sent to the general fund of the department of conservation, or into the country's general treasury. Often less than 20 percent of the funds collected are sent back to the park for protection, maintenance, or infrastructure development. Although revenues from tourism are increasing, studies indicate funding allocated back to parks is not increasing.

FEE STRUCTURES

One way of developing a tiered fee structure is to charge visitors by their planned use of the protected area rather than by nationality. Picnickers and general-use visitors would then utilize a particular area of the park or buffer zone designed specifically for their needs. They would not be using the same areas and trails as bird and wildlife viewing individuals or as tour groups. Mass tour groups would have special educational trails and a visitor center and be charged a different rate.

This type of planning also allows park managers to develop appropriate infrastructure and provides the tourism industry some protection for the product they offer their clients. For example, Poas National Park in Costa Rica is accessible to metropolitan areas, so it receives high domestic use. Foreign nature tourists also visit the park for its geological features, flora, and fauna. Conflict could develop between these two groups if different fees were charged. However, where parks are conducive to tourist privacy, they can be zoned so that wildlife and nonwildlife viewing groups use different areas. In this case, tiered fees could be charged without undue dissension. This is already occurring in some areas of Central America. Local tourists have generally lower average income than international tourists but local use should be more actively promoted. Positive local interest in these protected natural area parks can lead to better governmental support.

> **Visitor use should not be permitted** in critical habitats or where it negatively impacts wildlife or natural features.

Individual Entrance Fees

Alternatives to the tiered visitor fee structure have been considered by a number of countries in the region. Some of the ideas which have been put into place or are being considered are:

- **Protected Area Passports** - People who plan to make multiple visits to protected areas over some extended period of time could purchase from the park service a special "passport." For one price, usually at some reasonable savings, this would provide special access. To a foreign bird watcher, a passport to five parks for 10 or more days of visit may be a very attractive incentive to visit a particular area. Meanwhile, a family in San Jose who likes to visit Poas to picnic could purchase a yearly family passport at a different rate for the general-use area of the park.

- **Group Fees** - The per-person charge to individuals who are in a group and have a qualified guide is set at a lower rate than that for individual visitors not with a group.

- **Fees Plus Donation** - Many parks which are finding it difficult to get higher or tiered fees approved through their governments are continuing to charge low entrance fees but are encouraging donations. They may have boxes into which visitors can drop their donations or they may offer a memento of the park visit like a card or stamp for a pre-set donation level.

Tour Operator Fees:

Some countries around the world charge a license fee to inbound tour operators which can control or enhance professionalism in operators. In some areas, operators are only licensed to work in specific parks. However, these professional fees are minimal or nonexistent in Central America and there is no system to ensure that operators are professionally or financially qualified. As mass tourism continues to develop within the region, a fee for tour operators should be considered for each of the protected areas. Appropriately structured fee rates could be used to encourage operators to increase their use of less-used protected areas and discourage overuse of the premium parks (which would charge higher fees).

Vehicle Fees:

Parks or reserves with extensive roadways, water trails for canoes or rafts, or horse trails could charge additional special "use" fees based on the number of canoes, horses, or vehicles. Funds of this type are often slated to be used directly for maintenance of the roadways or trails. Reef preserves could also license tourist boats that use protected marine parks, utilizing the license fees to pay for patrols to monitor the users.

Camera Fees:

Camera fees are the most controversial fees charged in preserves and are extremely unpopular with tourists and operators. Camera fees originated with professional photographers or cinematographers who utilized preserves to extensively photograph wildlife. This fee is cumbersome and should be restricted to professional people who require special privileges and support from the park. These privileges would apply to professional photographers who intend to sell or market their products. These fees should be pro-rated based on a pre-determined set of standardized rates. These prices should be carefully assessed keeping in mind that films and magazine articles frequently increase travel demand for specific locations.

Special privileges might include photographers' needing:

- to utilize the area for extended time periods,
- to have special animal blinds built or set aside,
- to be able to directly manipulate animals or background, and/or
- to have guides to locate scenic areas or wildlife.

Hotel and Facility Fees:

Many national parks around the world have hotels within park boundaries which may be owned and operated by the park personnel, leased to a concessionaire, or privately owned and operated. Such facilities can bring additional income into the preserve. Historically, hotels ranging from modest pensions to luxury accommodations have provided low amounts of income to the parks. The most equitable fee is a bed tax which is based on use. This type of fee protects the facility from large cash outlays in the slow season. Fee structure should be designed to recover costs such as maintenance on infrastructure (e.g., roads), inspection of wastewater, and solid waste disposal.

Fee Structure for Mass Tourism:

As tourism develops in wildland areas, it should be responsible for providing appropriate financial support, particularly where tourist volume is high. Although impacts may be concentrated in specific areas, other areas which receive high tourist concentrations, such as tour bus stops, could receive damage to infrastructure and to natural and human communities. Large hotels and cruise ship lines should be required to support infrastructure development and pay impact fees on protected

areas. Mass tourism should also be required to support local governments for schools, roads, medical facilities, and other infrastructure in impacted areas. Careful review of the actual costs of this type of tourism should be made before such rates are set, and then impact fees, entrance fees, and other revenue should be determined.

Private Reserve Fees:

The oldest natural reserves in the world are private reserves. For example, in Great Britain reserves have traditionally belonged to the crown or to private land owners. Today, the most significant wildlife and nature preserves in Great Britain are maintained in private ownership. Many private reserves originated from big game hunting preserves and are strictly managed for game animals. These reserves can attract an international clientele that may pay more than $15,000 for a trophy animal. Proprietors manage the habitat for key species which can in turn protect much of the natural community.

- CASE STUDY -

A PRIVATE RESERVE: SABI SABI GAME RESERVE

Sabi Sabi is a private game reserve and ecotourism center in the buffer zone of Kruger National Park, South Africa. Originally a hunting reserve, Sabi Sabi now relies on nature tourism for its very successful business. This reserve provides training, jobs, and financial development assistance to the local community. Positions from top managers to biologists to guides are filled by people from the community. The standard of living within the community is far higher than similar communities outside the district due to the direct and indirect economic support provided by the reserve and the jobs that are created.

Hunting preserves such as Sabi Sabi and Mala Mala in the buffer zone around Kruger National Park in South Africa are excellent examples of such private reserves. Originally designed and operated as hunting preserves for water buffalo, lions, and other big game, they protect endangered species like black rhinoceros and Cape hunting dogs in addition to smaller fauna such as tortoises and lizards.

Private wildlife reserves are extremely successful in many areas of the world. These are successful because they point out the importance of habitat and wildlife conservation. Countries like South Africa charge taxes to private reserves that function as buffer zones to publicly owned protected natural areas. These monies support park maintenance, rangers, and game protection activities. In turn, the parks provide a species reservoir for hunting activities and help alleviate tourism pressure by effectively increasing the area available to tour operators. Private reserves can support local economies by providing jobs and purchasing supplies from local vendors.

Protected Area Revolving Funds

If user fees in Central American wildlands were increased to world standards then popular parks and reserves within each country could substantially contribute towards supporting the national park system. When fees are recycled back to parks, personnel can be hired for their protection and the needed infrastructure can be built including roads, buildings, pathways, and waste treatment facilities.

In some African countries, a revolving fund has been established from park fees. These fees are used for proper support in the parks, protection of natural areas, and providing tourist infrastructure. In Amboseli National Park in Kenya, increased numbers of staff have reduced poaching by 90 percent. Funds are replenished by continual income from tourist fees.

Through revolving funds, parks that attract large numbers of tourists can help pay for the parks in less demand. This encourages protection of diverse ecosystems that lie within national park systems. The revolving funds should be controlled and managed through the park service or natural resources ministry. Establishing such a revolving fund allows for centralized fee collection and donations from all parks, and then provides a mechanism for distribution or allocation of monies back to the park areas where they are needed. NGOs and world conservation or development agencies often donate monies to specific parks or park projects. This often creates problems with the budgetary process and often leads to inefficient use of such funds. This is the case in Costa Rica where

substantial funds from various sources have actually inflated park budgets. These organizations should be encouraged to place donations in the revolving fund so that the park service or the country's resource ministry can make the best use of the donations.

With a revolving fund, income for regional park systems may rely on "flagship" parks. A region's flagship parks are those which attract the greatest number of tourists. Other protected areas in the region without the necessary infrastructure or accessibility may not be able to contribute as much to park system funds. An example is the Galapogos Islands which produce nearly 80 percent Ecuador's total park income. Fee structures and other income-producing efforts should be designed to make the most of the income potential of flagship parks. The budgetary process should be designed to provide for the continued maintenance and development of these flagship parks as well as for the region's other parks, particularly for those that are important to buffer zone management and biodiversity conservation. Such efforts take long-range budgetary planning and must consider the need for growth in the income-producing activities needed to generate support for protected lands within the country. Due to bureaucracy, politics, and inefficiency, the major obstacle in creating such a fund is the difficulty of getting the funds out of the central fund.

Hunting and Fishing Fees:

Extractive wildlife use such as big game hunting is not an economically important industry in Central America, with the exception of deer hunting in Costa Rica. A survey conducted by Alderman in 1990 indicated that 2 percent of private preserves in Latin America are used for sport hunting, compared to 40 percent in Africa. Latin America's wildlife is less attractive for hunting while the region has not implemented traditional game management strategies like those used in Africa.

Bird hunting for doves, pigeons, and waterfowl in Central America draws many hunters because there are no bag limit restrictions and advertisements may guarantee several hundred birds per day. Unfortunately, impacts on the hunted populations are not clearly understood. Hopefully, with increased regulations, a percentage of hunting fees will be required to support research and conservation activities.

In many areas in Africa and the United States, controlled hunting for sport or market has limited effects on hunted populations. For species such as crocodilians, sustainable harvest can be important because it contributes to wildlands protection through the generation of funds and community support. Fees for collecting or harvesting these animals should be designed to cover management and enforcement costs.

- CASE STUDY -

A REVOLVING FUND: KENYA

The Kenya Wildlife Department is working towards complete self-reliance without allocations from the government's general fund. The conservation program was initiated when the department was removed from the "civil service" designation and the director developed the service to be independent of the administration. In addition, day-use fees were raised to U.S. $20.00. A budget was established as a trust fund which allowed the money balance to revolve from 1 year to another. This program also allowed the director to raise funds for infrastructure development or special projects. These efforts have raised $300 million dollars ($U.S.), which will be used to upgrade infrastructure of the flagship parks in addition to other small parks. Dispersion of tourism activities has also alleviated pressure on the three most popular parks. As a result of increased fees, the Wildlife Service is developing methods to support local communities around the parks by offering jobs, paying for damage caused by wildlife, and supporting the building of schools and health care for communities that are impacted by the parks.

Trophy or sport hunting may be allowed in hunting preserves but should be carefully controlled, restricting the harvest to a level that does not reduce the population below its natural replacement rate.

In Africa, the Soviet Union, and Canada, sport hunting brings more fees per tourist than any other form of tourism. In addition to hunting permits and entrance fees, large fees are charged for export permits by the conservation departments.

Saltwater fishing is becoming popular throughout Central America with the focus on billfish, tarpon, and bonefish. Freshwater fishing is also increasing with peacock bass being the most popular species. Some countries have introduced or are considering introducing large-mouthed bass to attract more tourists. However, introduction of exotics can produce long-term negative ecological effects on aquatic ecosystems which greatly outweigh the positive impacts from increased tourism income. The income from hunting and fishing tourism that supports research or conservation in Central America is negligible. Costa Rica charges a ten dollar fee for fishing licenses but these regulations are not enforced for sport or commercial fishing. This type of tourism, however, has the potential to provide substantial income for conservation in Central America. Sport fishing fees and hunting licenses should be established and enforced, along with regulations designed to sustain these natural resources. It is important that host countries direct fees towards research to evaluate the sustainability of harvest on target populations. In our research, we found that although fishing licenses are required by most Central American countries, minimal effort is made to collect fees and efforts to manage the sport fisheries are nonexistent. Several operators indicated that snook, trout, bass, guapote, and tarpon fisheries are declining due to over harvesting and lack of management.

INDIRECT SUPPORT FOR NATURAL AREAS

Natural Resource Impact Fees:

As tourist numbers approach 25 to 50 percent of a country's total population, as they have in Belize, governments may consider establishing a tourist tax to offset the use of and impact on the nation's natural resources. Potable water, liquid and solid waste treatment are all services which are important to protecting the environment and are very difficult to fund. The impact of these services can be extremely high for the nation and local communities that are supporting tourism facilities. Belize is considering charging such taxes as tourists enter the country.

Many Caribbean countries are evaluating the environmental impact of large cruise ships. These vessels take on fresh water and deposit solid wastes at ports of call. In small communities or islands, the waste and potable water can be equal to many months of waste or water consumption by local inhabitants. Meanwhile, the money spent locally by tourists and cruise lines does not justify the costs to provide these services. Many countries are beginning to demand higher port fees or head taxes on cruise passengers to help offset these costs.

Other Economic Development Fees:

Sustainable development of natural resources is intended to maintain wildlands indefinitely and to support local and national economies. Consumptive development, such as timber harvesting in natural forests, agriculture, and mining within wildland areas should be accompanied by environmental impact assessments, zoning, and implementation of fee structures. Fees should also include support for monitoring, enforcement activities, and bonds to insure that charges for infractions are paid. Researchers have shown that increases in user fees in protected areas can increase available funds by more than 200 percent.

Income to Local Communities, Political Support, Education:

Domestic tourism to natural areas can be an excellent method of educating domestic populations about their natural environment and the importance of conservation. Many parks around the world have developed visitor centers or museums which provide educational exhibits and programs for visitors. Also, interpretive naturalists at these facilities can serve as resource people for local schools and communities and provide educational programs and services. This form of tourism does not require the undisturbed natural areas required of nature-based tourism. Protected areas intended to preserve biodiversity may benefit by also creating areas for recreational domestic travelers along with careful planning and regulations.

Employment

Economic alternatives to traditional exploitation must be provided to people who live near wildlands. In addition, economic incentives to protect wildlands must be strong enough to avoid over-exploitation of natural resources. Local people must desire to protect natural areas as much as outside conservationists do and should be educated in principles of conservation.

Current problems with tourism employment in Central America include the location and distribution of jobs and lack of funds to support them. Most skilled positions are filled by people in larger cities. Unskilled labor is also frequently hired from cities rather than from the wildland destinations visited by tourists. Small hotels used by nature tourists usually hire a small number of laborers from the local community. Under current funding, most of the parks and reserves hire few local people for their staffs because they do not have adequate funds to support them.

Nature-based tourism can provide more jobs in rural communities than mass tourism (e.g., large resorts and cruise ships) can because nature tourists spend more time in wildland areas near local communities. Due to the tiered structure of the tourism business, potential profits gained by single level operators of nature-based tourism (e.g., foreign outboard operators, travel agents, domestic inboard operator, hotel owners, etc.) are small and cannot support high numbers of staff or other costly support. Therefore, projections regarding employment should be prudent.

> The potential of tourism to provide jobs in wildlands is proportional to the number of tourists visiting an area. Unless there is a nationwide effort to distribute visitation and user fees to areas that are less attractive to tourism, there is little chance that tourism will provide meaningful income and indirect support for conservation within a country or for the entire region.

Tourism developers should outline jobs that will be offered to local people, establish training programs, and define long-term commitments to employment within the region. Agreements must be associated with the volume of tourists being served in an area and should be subject to change.

Many developers and conservationists have suggested that an archeological and natural history guide school be developed in Central America. Students would spend one or two years learning a language, ecological principles, wildlife and plant community identification, how to use field guides, and methods of regulating tour groups.

After completing formal study, the students would assist a professional guide for one year before receiving a license. This school could be funded by the tourism industry.

As previously discussed, community-operated lodges can maintain high economic yields but require skilled individuals with knowledge in business, hotel management, and nature-based tourism. Development and operational expenses can be extremely high and the cycles of tourism in the tropics add an additional economic burden. The failure of such facilities in Belize, for example, is high (one source indicated more than 50 percent fail within 3 years). The loss of investment can be considerable due to inappropriate site evaluations, lack of development funds, and improper planning.

Other Economic Community Development

Many communities that maintain traditional skills (e.g., cultural artifacts and food supplies) may find expanded markets in tourism development. Communities that develop private parks or reserves for tourists may produce income without considerable investment. This potential must be weighed against positive and negative benefits. With appropriate planning and management, the quantity and quality of supplies can be expanded to efficiently meet needs. Low-level grassroots publicity with low-impact tourism thrives in many places. However, some local people may not receive adequate returns for their efforts; where volume is low, interest may be lost. A survey of operators indicated that quality control problems can lead to potential health hazards, dissatisfied tourists, and even expensive lawsuits if the service does not meet international standards.

Simple development projects such as roadside parks or other small-scale attractions that appeal to day travelers or picnickers can be developed and

maintained inexpensively with considerable community benefit. In Costa Rica, the average nature tour group spends 60 percent of their time on private lands viewing wildlife, which can increase up to 75 percent in regions where parks are poorly developed. Small-scale private or community owned wildland reserves can generate considerable income, especially if the reserve is strategically located en route to a major park or reserve. The community working with a biologist or nature tourism official can construct and maintain trails for tourist access to scenic areas or wildlife. Simple advertising would require informing tour operators of the reserve and developing a per person fee.

Political Support for Sustainable Development and Protected Areas

Agriculture, timber, mining, and other economic development interests have strong political power which is used to insure that regulations do not impact negatively on their use of the land. Tourism is a relatively new economic development in most Central American countries and only recently has reached a level of importance which provides a political base. As the industry realizes the importance of pristine natural areas and high quality natural resources, this political power can be used to support land use planning, funding for the protection of natural resources, and to oppose improper economic development.

Education - Local and Regional

Many tourism advocates and conservationists are concerned that local communities may make decisions based on short-term economic needs which are not ecologically sustainable. However, in most communities, minimal efforts have been made to teach residents about conservation and ecological principles. Conservation officials, NGOs, and the tourism industry must bear the responsibility of educating local communities about the importance of protecting areas and how they can economically benefit from these activities. Discussions should focus on economic and lifestyle changes caused by deforestation, rather than simply emphasizing the significance of biodiversity. Training should emphasize that tourism and other sustainable development can provide long-term community support.

- CASE STUDY -

COMMUNITY BABOON SANCTUARY, BELIZE

The Community Baboon Sanctuary, developed in 1985, was created subsequent to studies on the black howler monkey by Robert Horwich, a U.S. biologist. The monkeys are an attraction to organized tour groups which contribute to local community income. Secondary positive impacts from this development have also occurred, which include decreased slash and burn agriculture and subsequent protection of river banks from erosion within the sanctuary.

Prior to tourism, local income was derived from agriculture, which is still a primary source of income in the community. Tourism has provided substantial income since its initiation in 1979. In 1989, more than 5,000 day visitors and 50 overnight tourists were accommodated. Given the entrance fee of $2.50 U.S., this produced more than $25,000 U.S. in that year. The number of visitors to the Community Baboon Sanctuary to view black howler monkeys is annually increasing.

In terms of conservation benefits, the Belizean example of ecotourism has been moderately successful. The black howler monkey population and some of its habitat have been protected. The community hopes to expand the sanctuary to create a wildlife corridor between Crooked Tree Lagoon Sanctuary and Mussel Creek Reserve. The moderate success of the program has enhanced national pride and other communities are attempting to emulate this example. A negative impact of this project has been the effect on community lifestyle. Tourists are present in the community during most days of the year, causing a constant perturbation. However, the program was developed through a democratic vote, and it is hoped the benefits outweigh the costs.

- CASE STUDY -

LOGISTIC SUPPORT: AMAZON

The Margarita is a moderate-sized riverboat on the Amazon River near Iquitos, Peru. It travels past many villages along tributaries while taking nature tourists and fishermen to remote areas. The Margarita brings supplies to villages and transports marketable goods to Iquitos from the villages, such as live tropical fish. The over-exploitation of resources from these activities is a problem which requires management and control.

Tourist Education

Most nature-based tourism groups provide simple background information to clients in preparation for their expedition. Efforts are also expanding to supply information to local teachers and NGOs working in environmental education. Tour operators should supply enhanced environmental and cultural education material to clients and support local environmental education by providing field guides and other pertinent information. This material is expensive and very difficult for communities to obtain. Trained guides or biologists working with tourism should provide workshops and training sessions for local teachers and community leaders. Visiting scientists should provide information to locals in addition to training students. Where policies of training local biologists and teachers are implemented (e.g., the Green Turtle Research Station in Tortuguero), several Costa Rican and Central American biologists and students are trained each year. These students use their new skills to teach and do research on sea turtles throughout Central America. Policies adopted by governments can require biologists to provide training, research reports, and other services before they are permitted to work within a country.

International Education

Tourism exposes wildlands to the general public worldwide. Multi-level media has brought exotic fauna, flora, and natural communities into the homes of millions of people who will probably never visit these areas. The impact of these efforts is far reaching and difficult to measure but undoubtedly is very important in obtaining support for wildlands conservation. Media efforts have caused many people to donate money for protection of wildlands and conservation of endangered species and accounts for much of the explosive growth in wildlands tourism. Nature-based tourism should support these media-productions that nurture worldwide concern. The tourism industry should also provide such media programs to the local communities where they were produced to encourage support.

UNIT 6
CULTURAL CHANGE AND TOURISM

The impact of tourism on the cultures of indigenous peoples is one of the most controversial issues in ecotourism development. Anthropologists who are actively studying tourism's social impacts indicate that tourism is a more rapid and efficient method of creating cultural change, more so than any other form of political, religious, or economic development. Through tourism, peoples representing different cultures are exposed to one another under generally pleasurable circumstances. Opportunities for the host culture to economically benefit by the tourists presence increase interest in the culture of the paying visitor. From this interest in the visitor's culture comes the seeds for change within the host country's cultures.

CHANGE AT THE REGIONAL LEVEL

It is difficult to separate cultural and economic change brought about by tourism development in Central America. Changes are taking place at all social levels in most countries in Central America. Some of the changes are directly attributable to tourism development. It is quite difficult, however, to separate the causes of all of these changes. The spread of satellite television hookups and the expansion of tourism both began in the early 1980s in Central America. These two methods of exposing people to the world's cultures have changed many facets of life in Central America. Another impact has been the massive immigration from Central America to North America.

Cultural changes are evident in Central America in the clothes people wear, changes in religion, and interest in learning English. Overall life styles are also changing to combine the traditionally Central American with North American and European cultures. As this has taken place, tourism from Central America to the United States has grown almost as rapidly as tourism in the other direction.

These changes have opened the doors to increased business ties between Central America and other regions of the world. Business training and technology have gone through considerable change in the past 5 years, and international investment and joint ventures have been growing since the region has been at peace. One area where this has been most evident is in the tourism industry. From large multi-national hotel chains and cruise lines to small outbound tourism operators, the fear of investing capital in business ventures in Central America has declined. This has been one of the reasons for the rapid growth of tourism in the region. Cultural change is influenced by tourism development and in turn affects tourism development.

Sociological Factors and Acculturation

One of the most controversial debate topics in ecotourism conferences around the world is the impact tourism can have on regions and communities near protected areas. Many researchers have tried to provide case studies to show how this can be documented over a long period of time. In every case, where there are economically successful tourism programs there are considerable changes in cultures.

> AN APPARENT GOAL OF ECOTOURISM IS TO HAVE MAXIMUM ECONOMIC IMPACT ON A REGION WHILE AT THE SAME TIME CREATING A MINIMUM IMPACT ON THE LOCAL CULTURE.

Regional and local communities in and around protected areas are, in general, growing at an accelerated rate while the ability to support this growth has been declining due to overall degradation of the environment (such as loss of forests, soil depletion, and declining water quality).

Anthropologists and sociologists agree that wildlands tourism can have extremely negative impacts on local people for two major reasons. First, uncontrolled exposure to western cultures can disrupt native lifestyles by exposing people to new values and material goods. Secondly, the production of income provides the means to obtain foreign goods, leading to changes in values and lifestyle. This encourages increased efforts to obtain more money than would normally be available in the traditional subsistence economy. Other forms of cultural disturbance such as timber harvesting and oil development can be equally harmful, causing significant changes in indigenous cultures by eliminating natural economic support systems.

For the purpose of evaluating cultural impacts from wildlands tourism, local people who inhabit wildlands can be divided into three categories: people who are tied to the country's mainstream economic system; indigenous cultures that have minimal social and economic ties with the outside world; and indigenous peoples who maintain traditional social structure, population, and resource extraction methods and are minimally influenced by the outside world. Each of these groups will be impacted differently by outside economic development. In all three cases, it can be assumed that historically, all three have depended to some degree on wildlands to meet their needs.

Cultural Impact Evaluation

During general interviews with tour operators in Honduras, Guatemala, and Belize, information was collected on the ways arrangements were made for tourists to visit indigenous peoples or residents of wildland areas. Operators in very isolated areas like the Rio Platano region of Honduras felt that there were so few tours and tour operators going into the region that there was no need for formal relationships; just general permission. However, meeting with the NGO representing peoples in the region indicated that there were already misunderstandings and negative impacts. During the interview process, it also became evident that local operators have little understanding of the overall impacts their programs have on local cultures. This lack of understanding from experienced on-site operators indicates that most certainly mass tour operators living in other countries, have even less understanding of the cultural impacts their programs produce.

Education

As Faust (see page 76) and other anthropologists have illustrated, proper tourism development requires education of the local communities and the public and private sectors. Tour operators have also demonstrated that NGOs working within sustainable development and tourism must understand tourism development in rural communities. Otherwise, false hopes can arise which can lead to negative attitudes about tourism and conservation.

There is a need for education for all tourism stakeholders. Local communities must have some understanding of what agreements will mean to them and their communities. This is one of the most difficult lessons to teach from one culture to another, especially to indigenous cultures far removed from the cultural and economic mainstream of their country.

SURVEY OF PRACTICES OF TOURISM OPERATORS IN DEALING WITH COMMUNITIES

Operators were interviewed with the following results:

- All tour operators indicated that they seek permission and information from locals on what tourism activities are acceptable.
- All tour operators indicated that they offer payment for services. (Most agreed that they pay disproportionally less for these services compared to other fees they pay as part of the itinerary, such as housing or transport).
- Most operators worked with individuals in a community, often people not associated with the community government.
- Few operators indicated anything but a superficial knowledge of the local culture of indigenous peoples in the communities they visited.
- No operators offered any kind of contract in writing, and there were no arrangements which could be changed or reviewed as time went by.
- There was only a superficial discussion with locals about times or numbers of visits, numbers of tourists in a group, and how many other groups were coming.
- Local guides were often included as part of the package, at least for a group touring a village.
- No pre-visit training was given to villagers except when the visit included preparation of a meal. People were then told about sanitary and food requirements.
- No operators reported any regulations (or if there were, any enforcement of regulations) governing business relationships between tour operators and local people.

As tour operators examine the potential impacts of their programs and those of the others that will follow them, it becomes clear that there is a strong need for enforceable guidelines and agreements between local communities and operators. Tourism Ministries should set guidelines which allow local people to determine their relationship with tourism economically, socially, and politically. Protected area managers should also consider the impacts of wildland tourism and land use on local people. In some areas, they may also be required to learn about interacting and making agreements with local communities.

INDIGENOUS PEOPLES

Not all people living in wildlands are similarly affected by tourism. Individuals who attend school or work in the regional or national socioeconomic mainstream may be less affected than aboriginal peoples who are removed from mainstream socioeconomic systems. The three critical issues are cultural or social impacts, developmental impacts, and economic benefits.

Some anthropologists feel that any impacts that change traditional cultures are morally wrong; this is an ethical issue to be addressed by the indigenous community. Communities desiring to maintain traditional life styles should approach tourism agreements cautiously, especially when they involve community visits by tourists.

Hands-Off Policy

Aboriginal cultures which have sustained their traditional ways of living and have little or no interaction with the outside world are becoming quite rare. These indigenous peoples are quite an attraction for adventure travelers and tourists interested in anthropology. There are no rules in Central America protecting these cultures from exposure to western culture either from missionaries, tourists, researchers, or the business

IMPACTS OF TOURISM ON INDIGENOUS AND OTHER CULTURES IN WILDLANDS

Direct	Indirect
Additional methods of supporting infrastructure and community needs	Better health, education, and community resources
Increased economic opportunities decreasing the overuse of wildlands	Less need for nonsustainable use of wildland resources
Increased political and economic standing	As region or community becomes important part of tourism resource, private sector and politicians begin to listen to local leaders
Invasion of privacy within the nation	Negative attitude about outsiders
Exposure to technology and creature comforts	Dissatisfaction with old ways
Change in economic structure of the community	Changes in the social structure
Change in personal and community goals and leadership	Change in traditional ways of selecting leaders and cultural basis for leadership
Change in educational goals to meet the needs of tourism	Change in traditional methods of earning a living
Change in ritualistic behavior for show	Loss of the sanctity of religious and other ritualistic behavior as it is displayed for tourists and begins to have less meaning, particularly to younger generations.
Introduction of high technology items into culture	Desire for an easier way of life that new technology provides.

community. Anthropologists studying ecotourism indicate that there simply is no way in which to avoid major cultural impacts on these people when tourists visit, even under the most controlled conditions. Most indicate that the remaining aboriginal cultures should be treated as endangered species and protected from impacts. There is no way to educate the people in these cultures in a way that they could understand the impacts that would ensue with ongoing exposure to western culture. Without this education, there is no way in which these people can establish a system in which they can benefit from these interactions. Such an experience has recently taken place in Panama. Only a few years ago, the Kunas tribe had little or no interaction with western culture. Today, more than a 1,000 tourists from several cruise ships and nature operators visit their villages. Our investigation indicates that the operators give the people virtually nothing in exchange for the visits and the people have little or no control over these visits.

Industry Responsibility

Although there can be rules and regulations governing the interaction of tourism with indigenous peoples, the industry must accept the moral responsibility for conducting business with cultures that are naive to modern business techniques rather than taking advantage of them.

Tourism and other development should be required to support local infrastructure in wildland areas. Apparently, most funding for such efforts comes from central governments. Few districts in Central America collect taxes from development projects to support local infrastructure.

UNIT 7

TOURISM IMPACTS ON SOCIOECONOMICS

Tourism has grown to be one of the top three industries in Costa Rica, Belize, and Guatemala. Unit 2 gave an overview of the economic significance of tourism as an industry, indicating that tourism is the leading earner of foreign exchange and a major source of employment in these countries. This tremendous economic growth has had a variety of socioeconomic impacts within these countries. The corresponding growth stimulates jobs, industries, and overall national productivity. On the other hand, increased demand for food, land in some locations, fuel, and services causes inflation of the monetary base. As tourism increases in economic importance, it also becomes more important politically in host countries.

TYPES OF ECONOMIC SUPPORT FROM TOURISM - JOBS, FEES, BUSINESSES

Employment

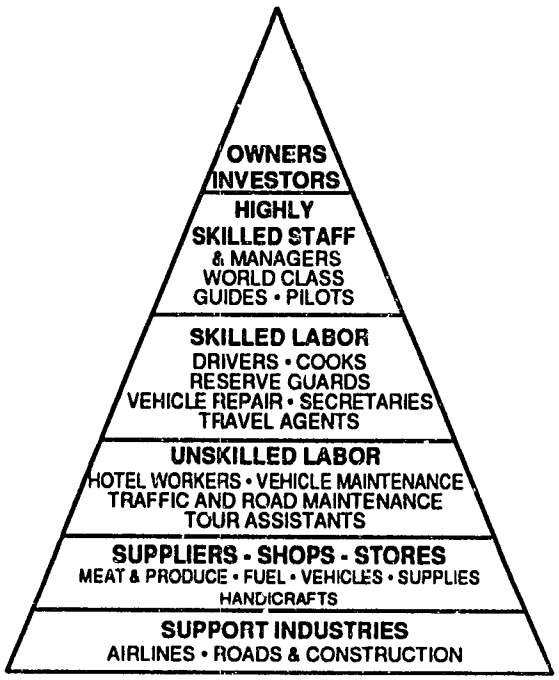
As previously noted, economic alternatives to traditional exploitation must be provided to people who live near protected areas. These economic incentives must be strong enough to cause changes in traditional ways of providing for a family and community. The most direct method of doing this is by providing jobs with reasonable income and stability.

Tourism is a service-oriented industry and requires large numbers of employees. Traditional mass tourism employs mostly low-skilled workers to provide maintenance and manual labor for hotels and recreational facilities (Figure 7-A). Some managerial-level employees may be trained from the host country, but the larger hotel chains normally bring in managerial staff from out-of-country. Mass tourism also provides jobs in transportation, airports, cab driving, and other services. Tour operations and most jobs in mass tourism are centered around metropolitan areas or tourism centers.

Nature-based tourism mostly goes into wildland areas. This requires the development of small tourism facilities away from the cities and can create employment for people in rural communities. Nature-based tourism, although growing, is not as developed as the traditional mass type and therefore employment of locals remains low. Community residents are also needed as drivers, local guides, and in various positions within protected areas.

Currently, most parks and reserves hire few local people for their staffs because they do not have adequate funds to support them.

FIGURE 7-A. Tourism Employment Potential by Numbers and Income Potential



Ashton 1991.

Tourism's potential to provide jobs in wildlands is proportional to the number of tourists visiting an area. Due to the narrow profit structure of the tourism business, potential profits gained by any single level of nature-based tourism are small and cannot support high numbers of staff. Therefore, expectations regarding employment should be modest.

An excellent guide may collect an average of U.S. $100-500 per group (Table 7-A). A guide working year-round can make up to U.S. $30,000 per year, or within the upper 10-percent pay bracket for most Central American countries. In many countries like Belize, Guatemala, and Panama, the

TABLE 7-A. Income Ranges for Nature-Based Tourism Guides	
QUALITY	SALARY RANGE PER DAY (U.S. Dollars)
Highly trained, multi-lingual, world-class guides	$75-125
Trained local or foreign nature guides	$35-100
Local guides	$5-50
NOTE: Average tips range from $.50 to $2.00/day per person.	

lack of world-class and novice guides is a limiting factor for nature tourism. This is due to a lack of proper training opportunities. Tour companies often import guides from their home-base country to lead tours. Some host countries are now requiring that a local guide be present, but this does not solve the training problem. Additional problems can arise when operators are forced to hire an unskilled individual at a high price yet also bring a skilled, highly paid individual to do much of the work.

Although there are a number of training programs developed in Costa Rica and Guatemala for professional tourism, there currently are no in depth training programs for professional guides. A guide's requirements are outlined in Table 7-C.

TABLE 7-B. Comparisons Between Nature-based Tourism and Other Jobs in Wildland Areas

	TOURISM	AGRICULTURE	TRADITIONAL TIMBER CUTTING
Salary level	medium-low	low	low
Seasonality	6-8 months	6-12 months	6 months
Sustainability	high	low	low
Advancement	moderate	none	none
Safety	high	moderate	low

NOTE: Low to high refers to a general comparison between the listed economic development types.

A CASE STUDY IN TOURISM AND EMPLOYMENT:
TORTUGUERO, COSTA RICA

Before 1986, less than 20 percent of the local people in Tortuguero, Costa Rica, made a living in the tourism industry. Income was based on fishing, timber harvest, and farming with an income lower than the national average annual income per capita. Prior to this date, two small sport fishing hotels and the Green Turtle Research Station were in operation. The number of tourists visiting annually was less than 1,000. Today, the number of hotel beds in Tortuguero is four times greater than in 1986, and the number of nature tourists is 10 times higher. Average annual income has more than doubled, and the number of villagers directly or indirectly working in the tourism industry has reached 70 percent. Indirect support for village infrastructure has also improved with electrical power, a routine shipping network, an airstrip, and increased educational possibilities through contacts with field station workers and guide training.

FROM: Baez, 1991.

TABLE 7-C. Experience and Knowledge Required of Nature-Based Tourism Guides

I World Class Natural Guide

A. Knowledge of natural history

1. General ecology
2. Plants and plant communities
3. Vertebrates, particularly birds, mammals, reptiles - identification and location
4. "Bush knowledge" - local names and uses
5. Conservation issues
6. Knowledge of archaeology and anthropology

B. People management

1. Speak and read, English and/or German, Japanese, or French
2. Know how to show wildlife to people
3. Know how to control people in the natural environment
4. Know guide protocols
5. Have a good working relationship with local cultures
6. Care of visitors, first-aid, and people management

C. Self help

1. Know how to manage relatively large personal income
2. Stress management from heavy work load and time away from home

II Local or Park Guides

A. Know local wildlife and habitats and how to locate them
B. Know how to show wildlife and "bush knowledge" to groups
C. Know park rules and regulations
D. Be aware of important social codes of conduct with groups
E. Some partial knowledge of foreign language

A wide variety of other skilled jobs are required in wildlands tourism. Inbound operators and lodge owners need to hire managers and other service-oriented positions. If infrastructure is funded and designed properly, the protected areas will also require managers, guides, and biologists. Other types of development in wildland areas, such as timber harvest and agriculture, require fewer skilled positions than tourism. Tourism salaries tend to be higher and employment in tourism in many regions is more continuous than employment in exploitative or extractive industries.

Tourism, like other industries, also requires unskilled labor. The proportion of unskilled labor required is similar to other industries in wildland areas. Positions needed include lodge support staff, assistant cooks and drivers, and grounds keepers.

Commodity Sales and Markets

Tourists may spend $100 a day in-country on items not included in tour package costs. These purchases often include mementos such as cultural articles of clothing, music, and literature (Table 7-D). For example, the wood carving industry in Belize has become a major source of revenue and jobs in the past 10 years. In 1979, items available to tourists visiting Belize were primarily imported Guatemalan cloth and over-exploited black coral jewelry. Today, Belizian wood artistry has become sufficiently sophisticated so a tourist can commission a work upon arrival with delivery of the item before departure. Another example is in Monte Verde, Costa Rica where a women's cooperative involved in arts and crafts sales is receiving a profit margin of $50,000 annually. Opportunities for cottage industries in wildland areas can be tremendous. However, this can threaten resources within wildland areas. For example, in some areas of Central and South America, local cultures make artifacts from wildlife

THROUGH ECOTOURISM, LIVE ANIMALS IN NATURAL HABITATS BECOME WORTH MORE TO INDIGENOUS PEOPLES THAN DEAD ANIMAL PARTS SOLD OR USED IN CRAFTS

TABLE 7-D. Objects that Nature Tourists Purchase While on Expeditions	
ARTS AND CRAFTS	**PUBLICATIONS**
• Jewelry not made with animal parts • Jewelry typical of indigenous cultures • Crafts typical of local cultures • Household objects (pots, utensils) • Cloth and clothing with typical cultural designs • Artwork which displays the cultural background of the artist • Replications of pre-Columbian art	• Tape recordings of music typical of the indigenous culture • Books including: • Field guides on wildlife and plants • Cookbooks • Children's stories typical of local culture • Local cultural history • Fictional Stories about local culture, and wildlife • Factual guide books on the region's natural history including maps, photos and lists of local species, folklore and history

parts for the tourist trade. Some of the animals harvested are species that tourists have travelled to see within their native habitats. The art pieces may be sold to a retailer for only pennies. In comparison, the value of the live animal was worth several thousand dollars to the tourism industry.

Inbound operators, guides, and hotel operators, have an important responsibility to work with local people in creating quality items to sell to tourists. They should discourage the use of wildlife parts because of resource depletion, particularly if the economic value increases.

Other Economic Community Development:

Many communities that maintain traditional skills, such as the ability to create cultural artifacts using traditional methods, may find expanded markets in tourism development. Communities that develop private parks or reserves for tourists may produce income without considerable investment. Under appropriate planning and management, the quantity and quality of supplies can be expanded to meet needs efficiently. However, such development requires sufficient training and investment of time and capital to insure that consistent quality is maintained. A survey of operators indicated that quality control problems can lead to potential health hazards, dissatisfied tourists, and even expensive lawsuits if the service does not meet international standards.

JOB TRAINING AND EDUCATION

Education - Local and Regional

Traditionally, training of naturalist guides has been informally left to operators. Many individuals study biology in college, subsequently go to traditional guide school for certification, and then receive on-the-job training from nature tourism operators. The skills required to locate and identify a rare bird for inexperienced tourists may take years to learn.

IMPACTS ON LAND USE

The history of land ownership, land use, and control over development in many neotropical countries presents a major problem to sustainable development. In general, problems may include complex ownership of undeveloped areas and laws that encourage deforestation. Laws that allow squatters to clear land, occupy it, and then lay claim to it are one common problem. In addition, tree stands are rarely incorporated into actual land values, which can lead to deforestation.

Community ownership of lands within protected areas such as biosphere reserves makes it difficult to promulgate fair policies for both people and conservation. A general premise of sustainable development is to provide economic resources for rural communities. However, conflicts may arise when local communities control a protected area and endorse an economically profitable development project that may have negative impacts on conservation of the protected area. Developing land use plans that restrict types of development to specific areas is one approach to creating long-term positive results, both for the environment and the local community.

Private wildlife reserves are an important land use related to tourism and economic development in rural areas. During the off season, hunters are replaced with camera-toting tourists which keep facilities busy year-round. Because of restrictions on tourists and drivers, and the lack of personnel within national parks, tourists can receive higher quality experiences in private reserves. Long-established private preserves pay staff higher salaries than their civil servant counterparts in traditional national park systems. These staff are usually involved in training programs that promote advancement within the corporation.

In response to the overwhelming increase in nature tourism in the past 5 years, private reserves are becoming more popular in Latin America. For example, Costa Rica is rapidly establishing these reserves, and Belize has initiated the effort with Rio Bravo Conservation and Management Area. Discussions are underway about developing more private reserves in Belize, Guatemala, and Mexico as part of the Ruta Maya project. As with any industry, careful regulation is necessary to protect these natural areas in addition to providing quality services. Properties near national parks should be regulated and monitored as buffer zones in planning and management activities.

Another issue to consider is the negative impacts that one type of development may impose upon another. A nature-tourist-oriented lodge in a wild-lands area requires natural habitat and wildlife to be successful. However, if the surrounding area is cut for timber, the lodge will either be unsuccessful or it may change to accommodate tourists that demand less-natural areas. The number and types of lodges built in wildland areas is another important land use issue. As an example, when only a few lodges were present on Ambergris Caye in Belize, resorts provided programs for divers and were excellent havens for other types of nature tourists. The island and its natural habitats provided outstanding bird watching, Mayan culture, and opportunities to see endangered wildlife like the manatee and American crocodile. The tourism boom in Belize has since caused lodges to spring up in clusters. The clientele includes low-volume back-packers, middle-class leisure travelers, and nature tourists. Consequently, several negative development impacts have occurred such as elimination of mangroves and dredging large areas for docking boats. Appropriate land use planning and restriction could have provided appropriate facilities and maintained recreation and environmental quality. Nature tourists now restrict their activities to snorkeling, and most nature groups have reduced their length of stay or moved to San Pedro and other less disturbed areas.

Impact on Inflation and Land Costs

Successful, ongoing tourism into an area increases the demand for food, fuel, and other commodities in wildland areas. Lodge operators may pay more for supplies than local people can afford, which can cause shortages and increased prices in the local communities. Fish and other resources taken from the wild may be over harvested in order to supply food to the tourism industry. However, lodges may provide benefits such as transportation for rural people and their commodities to local markets.

As tourism to an area becomes more successful, more facilities are needed such as hotels, preserves, and stores. This may lead to inflated land costs. If the development is nature-based tourism, the value of land with natural habitats becomes greater than if the timber was sold. As long as the wildlife and other things that attracted tourism to an area are healthy, land values continue to increase.

The value of natural areas extends beyond land to wildlife. A troupe of howler monkeys or quetzals which can be seen routinely have a value based on their ability to attract tourists to a location. This is the marketing value of the species. A second value is pleasure value. This is related to the pleasure tourists receive by viewing this form of wildlife. Appendix E contains a list of Central American wildlife with the overall tourism value of each species. The value can be developed into a dollar figure based on the number of tourists coming to see a particular species each year and the amount of money tourists spend in the area. A community which receives considerable income

from nature tourism will begin to consider preserving instead of hunting or destroying a species since it is more valuable alive in its natural habitat than dead in the pot or sold to the pet trade.

Land Values

An important measure of the economic value of development is land cost. In Kenya, the value of wildlands used for tourism is U.S. $40 per acre (compared to the value of farmland at $.40 U.S. per acre). World Bank statistics indicate that in Central America, raising one head of cattle can require more than 1 acre and 3 years to demonstrate profit. At the highest market value, an individual cow could provide U.S. $35 return in 1989. If that same acre were allocated to a managed forest with wildlife species important for tourism, it could produce substantially greater profits. Profits from cattle raising can also be problematic, often subject to decline in profit due to depletion of soil fertility. If wildlands are protected, the value of undisturbed lands can increase significantly with tourism development.

UNIT 8

PLANNING FOR TOURISM DEVELOPMENT

Tourism development is growing throughout Central America. Those countries which have well-established tourism programs, like Costa Rica, are beginning to realize that as tourism grows, the types of tourists change. Along with this change comes an evolution of impacts to protected areas, local communities, and demands for services. In contrast to Costa Rica, Nicaragua has a tourism industry in its infancy. International tourism developers are beginning to look at the outstanding natural resources of Nicaragua and to consider investing in all forms of tourism development in that country. However, neither Costa Rica nor Nicaragua, at two ends of the spectrum, have a national plan for tourism development. Costa Rica has certain laws which restrict some types of construction and impacts, but there has been no national, regional, or protected area planning with regard to the development of tourism. Nicaragua has no enforced regulations regarding hotel or facilities siting or where a tour company can establish tours.

THE FIRST STEP IN MAKING TOURISM A SUSTAINABLE INDUSTRY AND ONE THAT SUPPORTS CONSERVATION AND HAS POSITIVE IMPACTS SOCIALLY AND ECONOMICALLY, IS GOOD PLANNING.

Government officials in Central America, along with the private sector and local community representatives, must work cooperatively to establish national plans for the development of tourism. In fact, international lending agencies are beginning to require land-use plans for tourism and other projects before they will consider investing. If a developer receives funding for an ecolodge within a buffer zone of a protected area and the surrounding forest is clear cut, that ecolodge will not be very successful. Such disasters in the past have made many investors wary.

Tourism has developed rapidly in Central America not only because of the presence of outstanding tropical communities and wildlife but also because of low costs. Salaries in the region are low, there is little or no regulation or control of tourism, and developers are rarely required to pay taxes.

THE MAJOR STEPS IN PLANNING FOR SUSTAINABLE TOURISM

- **Resource mapping and evaluation**
  Important natural resources that should be protected must be mapped and evaluated. Other resources should also be identified along with their current land use.
- **Zoning determination**
  Areas to be set aside, buffer zones, and areas for economic development, including tourism, should be determined. (Different types of tourism should be placed in different zones.)
- **Setting of zoning regulations**
  After a zoning plan is established, zoning rules, review processes, and permitting should be put into place.
- **Environmental Impact Review**
  Developers should be required to provide data and evaluations on proposed tourism development. This should include environmental, social, and economic impacts. There should be a governmental and public review process and a method of denying development, requests and/or mandating mitigation of impacts.
- **Regulation and enforcement of zoning and environmental regulation**
  Governments must develop enforcement programs on development. Within protected areas, managers must establish rules and enforce them.

LAND USE PLANNING

Resource and Land Use Inventory

The first step in determining the best use for land is a systematic review of how land is being used and what lands are best used for in the future, including protected areas. Protected areas and buffer zone areas can be established where uses will both be detrimental to the protected zone outside this area. From here, agriculture, mining and forestry areas can be placed. Land use planning is a key to future protection of land. Modern technology, such as satellite imagery, is beginning to be used in Central America to assess distribution of natural resources. Geologic features, soils, and vegetative communities can be identified and evaluated using satellite imagery and land use patterns can be assessed within regions. Until these technologically sophisticated methods are fully utilized, it will be difficult and costly to determine appropriate factors for planning in Central America.

Ground truth surveys allow scientists to refine their interpretations of satellite photos in tropical areas, making this tool an essential step in developing plans for land use. In ground truth surveys, scientists' information on habitat distribution and land use patterns help to determine where development projects like tourism can occur with the least amount of impact on protected areas. This methodology will also determine habitat types for endangered species and guide conservation officials in determining critically threatened areas and appropriate buffer zones.

Through ground truthing and resource investigations, tourism development experts and biologists familiar with species and habitats important to nature tourism can develop plans for the location of lodges, trails, and other infrastructure. Ecologists can assess development levels for protected areas based on carrying capacity, local community interest, and service infrastructure such as roads and airports.

Government Coordination of Land Use Plans

The creation of land use plans requires that the divisions of government involved with conservation, economics, and community development reach agreement on regional land use plans. Currently, many land use surveys are being implemented in Central American countries, but baseline data is needed that is sensitive to conservation and tourism planning. This will require intergovernmental coordination between the central government and local governments and communities.

Land Use Regulation

The final stage in land use planning is land use regulation. Once information is available, groups within various regions of the country should develop zoning policies and regulations which will control development and enforce the placement of various types of economic development. These groups should be advisory to the legislature or governing body be it national or local. Regional planning

Agencies must reach agreements on the following factors to encourage successful land use plans:

- **Land use planning concepts** should be clearly defined. Economic development projects should be restricted to certain zones that can tolerate potential social and environmental impacts.
- **Critical natural areas** should be protected in land use plans. These areas should be buffered by environmentally sensitive economic development.
- **Human population growth and intensive land use development** should be planned on a regional (district or local) scale.
- **Land use plans** should be available to the public and distributed to land owners and rural communities.
- **Methods for local, regional, and national enforcement** of land use plans should be developed which include an exemption process for changes in land use and the methods which government, communities, and private sector review environmental impacts of planned development.

councils made up of the government, the private sector, conservation groups, and local community representatives can work to establish policies which will protect natural and human communities.

Land Management Plans for Tourism Development

During our recent surveys of protected areas in Central America, we found that very few have management plans that consider tourism (See Table 1-B). There is a need for establishing visitor management plans which include an evaluation of those areas of a preserve to be used by visitors.

> Researchers are concerned that golden toads in the Monteverde Cloud Forest Reserve are endangered and that tourism may be a contributing factor. It is believed that visitor pressure is a major factor in the decline of this unique amphibian. Numerous unplanned trails now meander throughout their critical habitat.

Tourism development within protected areas must be carefully controlled. Most national parks in Central America have been established to protect natural communities and ecosystems rather than to develop tourism. Many of these areas have been visited by tourists for years, and trails and other infrastructure have been developed by the tourism industry. Consequently, protected areas have been developed with little concern for impacts on resources.

The Biosphere Reserve Concept

The concept of the biosphere reserve has been used in the conservation of wildland areas for more than 10 years. The concept is now being modified and redeveloped with conservationists and biologists working to create sustainable development and alternative uses in the protected lands of Central America. Harvest of forest products and sustainable timber harvest is being investigated for ecological and socioeconomic impacts in the region. In the biosphere reserve model, protected areas are centrally located and are large enough to incorporate major ecosystem components. The protected area is known as the core area of the

LAND USE PLANS FOR TOURISM WITHIN PROTECTED AREAS: Protected-land managers must work with biologists and the tourism private sector to establish appropriate visitor management plans for their protected areas.

Steps in developing these plans:

- Identification of zones within the protected areas too important biologically to permit visitor use.
- Identification of current and projected visitor uses of the protected areas.
- Identification of the biological resources required for successful tourism use of the protected areas (See Appendix E).
- Identification of the infrastructure and personnel required by the various types of tourism within the protected area to include 3, 5 and 10 years projections.
- Estimation of the cost to develop and maintain necessary infrastructure.
- Development of regulations on buffer zone use to protect the preserve.
- Evaluation of the financial resources available to provide required revenue.
- Determination of how many visitors can use each tourism area and not degrade it (carrying capacity).
- Establishment of simple monitoring programs to determine the impacts of tourists in the use area.

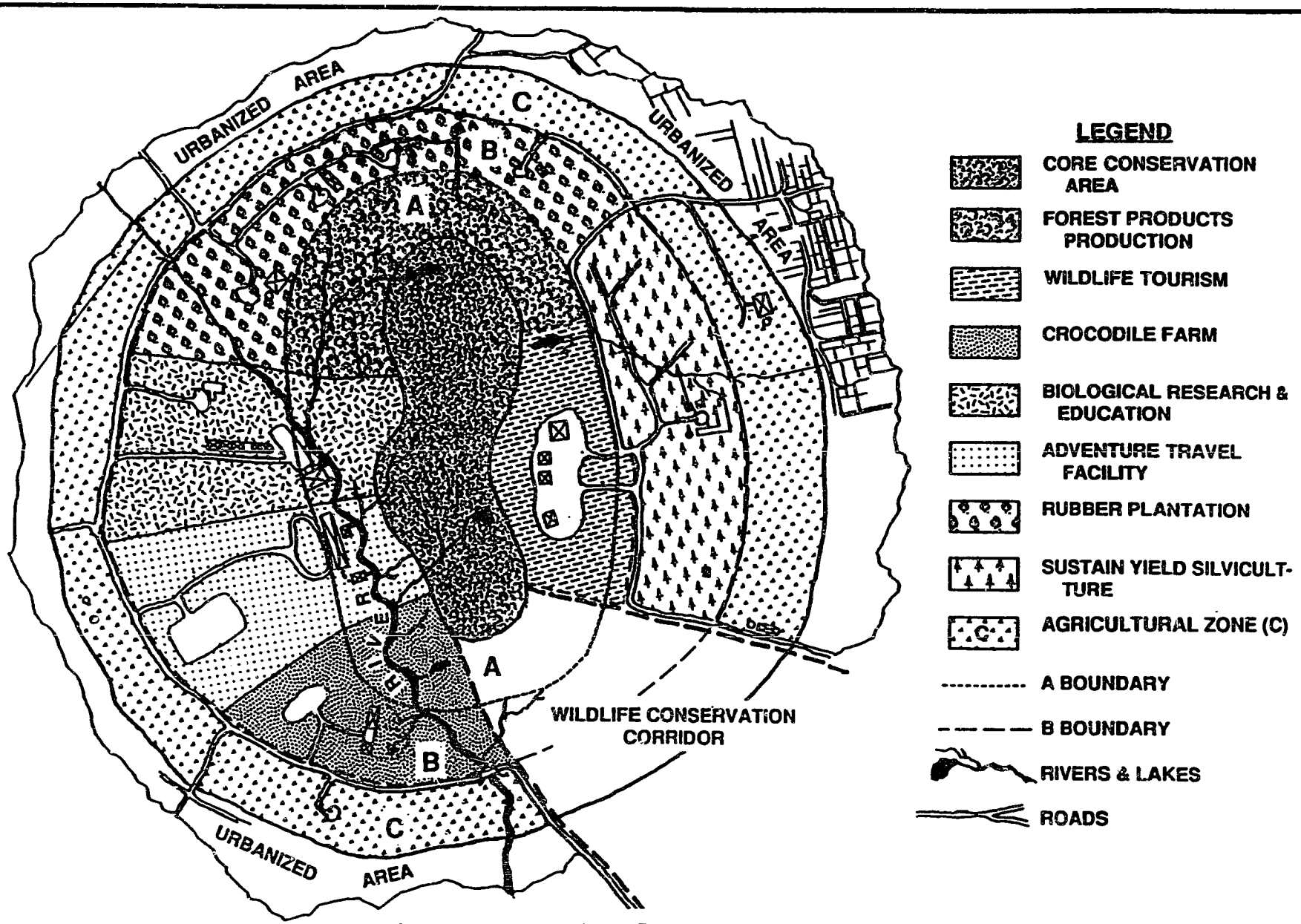


FIGURE 8-A. Biosphere Reserve Model with Buffer Zones

SOURCE: Ashton, 1990.

biosphere reserve (Figure 8-A). The biosphere reserve then protects the inner areas by a series of managed zones. The inner zone nearest the protected area is a low-impact zone and functions as a buffer zone for the core area. Activity within the inner zone can include low-impact nature tourism, small wildlife viewing groups, viewing of archaeological ruins, or adventure tourism. Research and educational ecotours can also operate in this area. Depending on the conservation objectives, both the protected area and inner core should be able to sustain indigenous cultures living in traditional manners.

The zone just outside the buffer zone is used in the biosphere model for sustainable development activities. Lodges can be placed there and sustainable harvest of natural resources can be allowed. Large groups of tourists and day-use travelers can utilize this area. A third zone in the model includes sustainable forestry and other methods of agriculture. Mass tourism hotels that operate tours into the inner zone may also be permitted in this area if appropriate infrastructure is developed. If regional land use plans are developed, the final, outermost zone of the biosphere would be intensive agriculture. High-quality agricultural lands in Central America are becoming a scarce commodity as populations and urban areas continue to grow, so these outer zones are important as part of regional land-use systems.

The entire biosphere reserve concept is designed to buffer protected areas from direct, negative human impacts. Income from development of multiple-use zones can be used to finance the core area and activities within other zones. Throughout protected area systems in Central America, such biosphere reserves can be developed to enhance a regional corridor system.

MANAGEMENT PLANS FOR PROTECTED AREAS

Protected Area Staff

Many governments and NGOs are investing considerable effort in training protected area staff. Training emphasis generally is on wildlife and habitat management, with minimal information on tourists. However, park managers, biologists, and other staff need to learn about the tourism business, types of tourists, and tourists' requirements. Most of the protected areas in Central America were created to protect natural communities and biodiversity rather than to provide recreation to humans. Managers must know how to identify and plan for different user groups, monitor impacts, and modify visitor activity to protect the park.

Impacts by Tourist Types

In many parks in the United States, different types of tourists visit the same areas and use the same facilities.

For example, large public-use areas are heavily utilized by various types of tourists including recreational users, researchers, and wildlife photographers. The needs of these groups may conflict, and tolerance levels may vary. Tourists who are wildlife observers have a low tolerance for other groups in the field, while recreational tourists are more gregarious. Increased difficulty in observing wildlife due to sharing space with other groups will cause negative reviews of a tour from wildlife observers. A potential solution is to use special zones for recreational tourists, photographers, and researchers which have different demands for wildlife and habitat.

SENSITIVITY OF TOURISTS TO INTERACTIONS WITH OTHERS

USER GROUP	TOLERANCE LEVEL
Mass tourist	high
Nature tourist	moderate
Specialty nature tourist	low
Pure ecotourist	moderate to low
Research biologist	low
Adventure travel	low to moderate
Picnickers	high
Sports related	high

Adapted from: Kuss, Graefe, and Vaske 1990

In areas designed for day use, non-nature tourism should be restricted to use areas away from biologically sensitive areas. If the protected area is heavily used by visitors with no supervision, trails, tables, rest rooms, and other facilities must be durable. Trails should be wide with little slope to avoid erosion problems and should be designed for

efficient travel. The number of trails, roads, and parking lots should be minimized while meeting future tourist volume requirements.

Roadways into reserves should also be minimized. Artificial clearing through forests may cause extended-edge effects that can change plant and animal communities even at far distances from roadways. Roadways can also act as corridors for poachers, so road access points should be limited.

As mass tourism continues to develop in wildland areas, tour operators and park officials should consider developing scenic routes for large numbers of tourists to view natural areas and establish locations designed to feature particularly good "views." Vehicles that allow easy viewing through the windows, such as buses or monorails, are possible within the next decade if tourism continues to develop in Central America. Such methods of handling the mass tourism market can significantly contribute to protection of wildlands while providing quality experiences to tourists.

Nature tourist trails should be constructed in a manner that supports visitor traffic yet appears natural. Nature tourists prefer rough trails over park walks, but trail safety and average age and ability of nature tourists should be considered. Trail location planning is also important; trails should be developed with the goal of accessing wildlife and natural habitats. An important point for trail design is regulation by guides. If guides are not required and people are allowed to move freely, trails must be designed such that people are compelled to stay on them.

However, proper training of guides is one of the most important methods of protecting the park from negative tourism impacts. Trails and roads should also avoid the important habitats of threatened species or other vulnerable areas under protection, and these areas should remain off limits to most tourists.

Placement of Lodges

The question of whether lodges should be built within reserves or outside borders has no obvious answer. Building lodges within reserves gives increased regulatory control of these facilities to the park authority yet increases pressure on a park's infrastructure, which can lead to environmental degradation. If lodges are built within park confines, they can also provide a considerable increase in revenues. However, surveys in many wildland areas worldwide indicate that lodges owned and operated by private owners were superior to lodges operated by the park service or another government branch. In addition, lodges located within parks with long-term leases to private companies (e.g., 20 years) were maintained similarly with lower impacts. If lodges are built inside park boundaries, size, design, and pollution controls (e.g., solid waste) must be mandated and monitored by park officials.

Facilities should be built in areas that enhance visitor enjoyment of the areas. These activities will impact the natural environment to some degree. For example, if a development project is built near a reef, the developer should create a use plan which will protect the reef while the facility is in operation. This plan should be based on a biological survey of the reef to determine allowable activities. Restrictions may need to be imposed on positioning of boat anchors and use areas for divers and snorkelers, and a ban may need to be placed on fishing and collecting.

Park Regulations and Control

Many national park programs do not teach park personnel managerial practices and how to build infrastructure for tourists. Analyses of tourist needs are based on surveys of expectations from various types of tourists. Surveys of nature tourists hard core to small nature based groups indicate they do not want parks to provide wide trails, interpretative signs, or nature centers, and that they prefer to be in remote areas.

Careful evaluation by park personnel of visitor type is important so that tourists are satisfied and wildlife impacts are minimized. Areas of use can be zoned for different types of tourists and volume can be controlled through requiring reservations or guides when visiting these areas.

Many operators indicate that guides are key factors to unobtrusive and environmentally sensitive tourist behavior in many natural areas. A high-quality guide can achieve tourist satisfaction by taking tourists to attractive wildlife while protecting the park through adhering to regulations. As tourism continues to grow, guides will be more of a necessity. Guides can also keep records of observations and help to evaluate changes in wildlife composition or movements. Adjustments in where to take tourists can then be made accordingly.

In surveying parks in Africa, India, and South America, it was found that guides were undoubtedly the most effective measure in controlling negative impacts. Individuals working in this capacity should be trained to work with tourists and to understand the natural features of an area. Guides provided by tour operators should be responsible for detailed interpretation and education. Operators may pay for this service in addition to paying park user fees.

Orientation programs can also help prepare people for their visit and instruct them on proper behavior within protected areas. Such programs should be offered to tour groups before they venture into natural areas.

PLANNING FOR TRENDS IN TOURISM DEVELOPMENT

Many popular parks in Costa Rica and Guatemala are currently confronted with mass domestic and international tourism. In the late 1970s, these types of tourists were extremely rare in protected areas. Now, nature tourists are becoming a minority. According to the National Park Service of Costa Rica, mass tourism expanded 100 percent in 1991 in these areas and is expected to double again during the next tourism season. The management for each of these parks is just beginning to enter into the data-gathering stage during this use-explosion. Management plans for nature tourists were just being considered when mass tourism discovered Costa Rica as a popular destination for those that normally would visit places in Europe or the United States.

The drama of this current crisis provides a lesson to protected area managers. It is important to collect data on site use and to work closely with the private sector to be prepared for changes in numbers and types of tourists using protected areas.

Understanding the needs of each type of tourist is important as well. The table on page 9 provides a list of the infrastructure needs of each type of tourist. Bird watchers and nature-based tourists prefer less-developed trails and a feeling of being on an expedition. This is not compatible with the needs of mass tourism groups that visit protected areas. Mass tourists have different reasons for visiting an area, require greater creature comforts, and are satisfied with less nature. They wish to see the rainforest on clean, safe trails with interpretative signs. The large numbers are also best served by a good visitor center with interpretative programs.

Many domestic travelers visit parks to get out of the city for a holiday. Many may only wish to picnic, swim, play soccer, and enjoy being out of doors. These people require yet another type of infrastructure.

Impact Evaluation

Visitor carrying capacity was derived from an ecological principal regarding the capability of a habitat to sustain a population of an organism without being harmed itself. This theory indicates that there are ways to determine how many visitors can use an area without causing degradation of the area. The concept is an important one. No area can accommodate an unlimited number of people without degradation. However, there are many variables which determine how many people can visit an area without affecting the habitat or impacting the natural resources. Protected area managers must determine how to measure impacts, not just on the short term but for extended lengths of time, such as after 10 or 20 years of use. A number of scientists and conservation organizations are studying the carrying capacity problem and should provide recommendations in the near future.

UNIT 9

EVALUATION SYSTEMS FOR TOURISM DEVELOPMENT

Very few countries in Central America have developed a system which permits the government or the people to evaluate the environmental, social, or economic impacts of development. Although laws exist in countries like Costa Rica and Guatemala, they are only sporadically enforced, they are not based on any land use plan, and there is no systematic review or evaluation process. This leads to unregulated development of tourism and other industries. This is true of facilities like hotels and lodges as well as for the tourism industry's use of protected areas. Today, international lending agencies like the World Bank are requiring certification that land use is being regulated prior to financing specific programs.

> Paraphrasing an ecotourism researcher, it is obvious that the tourism industry must be regulated before it will become sustainable. If this was not so, the industry would have determined long ago that the success of the industry relies on the health of the environment, and the current problems of habitat abuse would not exist.

ENVIRONMENTAL IMPACT STATEMENTS

Many countries throughout the world are developing laws which require developers to produce documentation on the planned development. The following is the method used in the United States. After adopting a successful land use plan, each country must plan enforcement of zoning regulations and the permitting process. A method by which to evaluate proposed land use projects is an environmental impact study (EIS) and review process. This process requires the developer to submit a detailed description of the proposed project, and its expected impacts, whether it is a large hotel or a birding tour through a protected area. The EIS should include the following:

A Project Description

This should contain a complete description of the project, including drawings, maps, and diagrams. It should also include an economic summary of the project including predicted income and dispersal of revenues through national, regional, and local economies.

Natural Resource Impacts

This section should document the natural communities in the area of the development project and should include an inventory of the natural features, including plant and animal species. Projected impacts to these resources should be thoroughly described. Special emphasis should be given to rare and endangered species and to areas of high biodiversity. A complete description of wetlands, surface waters, and marine resources should be included, and water supply, wastewater treatment, and solid and hazardous waste disposal should be described and evaluated.

Human and Infrastructural Impacts

Impacts on transportation infrastructure including national, regional, and local should be addressed with emphasis placed on any new roads required as a result of the proposed action. Impacts to local communities should also be clearly described. Potential for increases in population in the area and associated impacts on infrastructure such as schools and medical facilities should be described. In addition, any impacts on the culture of the indigenous population and archeological and historical sites should be addressed.

Other Required Information

The plan should describe how negative impacts from construction and future growth will be avoided. The report should also explain sources and methods of data collection. Regulations should allow data collected during report preparation to be publicly available. All contractual agreements with local communities, protected area managers and other pertinent parties should be attached to the EIS.

Steps in the Application Process

Application

A company or individual who wishes to develop a tour to an area, a cruise ship requesting to establish a port of call and land program, or someone planning to build a lodge or hotel should be required to complete an application for an Environmental Impact Study. The appropriate governmental agency would review the application and determine whether or not the proposed project meets the threshold requirements of an EIS. If an EIS is necessary, a set of guidelines would be furnished to the applicant for completion and submission of the document. It is most likely that not all tourism development projects will require a complete EIS. The size, location, and other variables of a project may be used by authorities to determine what review processes, if any, will be required.

Fees

Application fees can thus be charged to offset the cost of the application review process. These fees should be set on a sliding scale depending on the complexity of the project and its estimated worth. In this way, the evaluation of a small, one-time proposed tour program would cost much less than that of a hundred-room hotel. The fees should be based on the real cost of reviewing the applications and should not be refundable. If the project requires costly reviews by experts, the applicant may be assessed additional fees to cover the cost of hiring experts or consultants to review information or impacts.

In some situations where there may be ongoing monitoring of impacts, the applicant might be required to pay annual fees to cover monitoring or enforcement fees.

Draft Environmental Impact Statement-Governmental and Public Review

The applicant would first file a Draft Environmental Impact Statement (DEIS) which would be distributed to all interested parties for review. All stakeholders should be invited to comment or ask questions. One or more public meetings should be held for general comment. Following governmental and public review, the DEIS would then be amended to develop the Final Environmental Impact Statement (EIS).

During the review, some impacts or information might be found to be unacceptable. In this case, the applicant could change the plan to eliminate some unacceptable impact, provide more information, or withdraw the application.

Final Environmental Impact Statement and Contract

The Final Environmental Impact Statement (FEIS) should be reviewed and contracts made to ensure that the development complies with the planning document. Agencies may require developers to produce additional plans beyond the EIS. For example, a tourism lodge being constructed within the buffer zone of a protected area might be required to develop a wildlife habitat management plan. This plan should clearly define the procedures to be followed to protect wildlife in the area of the project. Similarly, a tour operator which proposes to take tour groups into a protected area might be required to establish a wildlife survey or monitoring system. The data from that system could be used to determine if the tours are having a detrimental effect on wildlife.

EVALUATION OF IMPACTS

Changes in a Proposed Development

If a developer of a tourism project decides to expand or significantly change a project, such as significantly expanding a hotel in a protected area buffer zone, then a supplement to the original EIS may be required. Much of the original information provided might be used but changes or additional impacts must be clearly described and go through the same processes of public hearing and governmental review as with the original EIS.

Evaluation of Biological Impacts

The first step in evaluation of biological impacts of any form of tourism development is to obtain baseline information on the biological communities that may be affected by that development. A complete description of the development project is also necessary. It is important that this information be as accurate and complete as possible or an evaluation of impacts may be extremely difficult.

SOME BIOLOGICAL IMPACT CONCERNS

- Loss of habitat
- Changes of habitat quality
- Behavioral changes expected in key species
- Loss of diversity
- Reduction of populations

Biologists should review the development plan to determine if the impacts described in the EIS are accurate. Then, biologists and managers should determine if the impacts are acceptable, or if not, whether the project can be changed to reduce the impact.

Careful methods of monitoring impacts as a project is being developed and after the project is operational are required to insure that impacts are maintained at agreed-upon levels.

Evaluation of Local Community Impacts

Historically, unplanned tourism development has often led to serious negative social and economic impacts on communities. The EIS process should open a project and its planning to local review and comment. It also should allow NGOs representing people and communities in a region to comment and suggest changes to a project. In some cases, local communities may request that a project be rejected. Communities adjacent to a proposed project may require contracts with the developer which cover agreements to provide jobs, training, visitations to the community by visitors, and support for the community by the project. Similarly, the developer may wish to establish agreements with the local communities which protect a project from overexpansion of the community, protect natural areas and wildlife, and provide services and supplies.

Evaluation of Natural Resource Impacts

The establishment of a good resource inventory, land use plan, and zoning restrictions will assist in efforts to reduce negative impacts of tourism development on natural resources.

NATURAL RESOURCE CONCERNS

- Landscape alteration & loss of scenery
- Water resources and watersheds
- Impacts on aquatic ecosystems
- Impacts on soils, tillable land, and other economic natural resources
- Use of fuels
- Air quality
- Noise
- Solid & liquid waste

Evaluation of Economic Resource Impacts

Frequently, tourism and other economic developments are seen only in terms of the money and jobs that will accrue to a country or community. Many studies have shown that tourism development is organized so that most income leaves the host country and few important jobs are provided to local people. The EIS system would require developers to provide information on job opportunities, where profits go, and what economic benefits will be provided to communities on a local, regional, and national basis.

Another economic impact which should be carefully reviewed is the potential for a development to contribute to local inflation due to increased demands for services and supplies. Furthermore, a review will be needed for use as local infrastructure such as fresh water supplies and waste disposal by tourism developments.

Evaluation of Protected Area Planning

The environmental impact review process for tourism development within protected areas should follow the same basic EIS plan. Environmental impact review requirements should be based on proposed location, number of tours, and growth potential for tours within an area. Protected area personnel should carefully review tourism impact studies. Tour operator goals are to efficiently provide tourists with a high-quality experience, which is not necessarily the same goal the park administration will have. If a development is causing some negative impact, the developer should either change the plan to avoid it, minimize it, or pay restitution to the protected area for the impact.

SPECIFIC CONCERNS TO BE CAREFULLY EVALUATED BY PROTECTED AREA MANAGERS

- Complete and accurate characterization of the proposed project in the EIS;
- Impacts of the proposed tourism program or development on protected species, biodiversity, and habitat quality;
- How the proposed plan fits into the visitor or ecotourism plan for any protected areas involved and what its infrastructure and predicted visitor load will be;
- Whether the program can be offered in another facility, private reserve, or buffer zone in lieu of any protected areas involved;
- Whether the program plan provides support for any protected areas involved (e.g., entrance fees, payment for infrastructure development and maintenance, training, and information exchange);
- What protective measures are described in the EIS and how they are designed to protect a given area;
- Activity plans, type of tourists, group size, and frequency of tours (tour operators with large groups of general tourists may be better served in more developed area); and
- What indirect support is provided by the project.

Protected area fees or trust funds should be part of the mitigation process and mitigating actions should be defined for the project duration, including ownership changes.

Infrastructure

Protected areas like parks and reserves in Central America have been set aside to protect species and ecosystem biodiversity, cultural integrity, and to promote environmental education and research. When parks were established, tourism was considered in many management plans but was rarely developed, for example, the Tikal management plan of 1968, Poas in 1970, and La Tigra in 1977. Unfortunately, tourism has developed independently of regional or park plans and with little management. Only recently have park officials become concerned about trails, roads, and buildings used by tourists. In most parks, little has been done to solve these problems since user fees have been low and funding from government and other sources has been inadequate to protect the parks. As tourism continues to grow into these areas, problems from infrastructure failure and inadequate personnel will reach critical levels.

As infrastructure is being developed within protected areas, managers should develop an EIS just as outside economic developers do. This will allow the tourism private sector, users of the protected areas, conservation organizations, and biologists to review the plans to ensure that the development meets infrastructure needs and has taken conservation issues into account.

Some suggestions for tour operators arranging tours with a community:

1. Make several visits to the community before making arrangements. Try to get to know the people, individuals, and local customs.
2. Allow the community to decide what activities they are willing to allow tourists to do in their community lands.
3. Tourists should avoid ritualistic, religious, and sacred community events. Artificially recreating these events cheapens the activity, especially in the eyes of young people, and should be avoided.
4. Allow the community to determine how many tourists, how often, and when groups can visit the area.

5. Provide training to community leaders and people who may be hired in the community. This training should include: how tourists act, how to react to tourists, what tourists want to see, and what the community rights are. This should continue annually.

6. Arrangements and expectations should be written in the language of the community and all parties sign the agreement. If the community has a representative NGO, it should review the document as well as the National Ecotourism Council. The arrangement should be reviewed each year.

7. Payment should be in two forms. First, the community should receive payment for visiting the community or its lands. To avoid some distribution problems, it may be better to purchase equipment, build a facility, or provide some service. People in the community who provide a service should be paid a fair wage directly. The best people for each job should be selected and hired within local customs.

8. If facilities are built on community lands, special agreements should be developed to protect both sides. Rent should be paid and the facility protected by the community.

9. Using a contract, the community should agree to a limited number of tours and operators with whom they will work. The protects both the community and the operator.

10. The community should be encouraged to develop secondary activities related to tourism, crafts, and production of things of interest tourists. Fair prices should be reviewed.

ENFORCEMENT AND AUTHORITY

The EIS system will work well only if there is a lead governmental agency in charge of the program. Often the ministry which is in charge of natural resources is assigned with this task. This agency then provides applications, collects fees, arranges for hearings and distribution of the EIS materials, and acts as a clearinghouse for feedback. The lead agency must have the legal authority to ensure that the process is followed by all proposed development and to close down and/or fine operations which have not followed the process.

Each ministry, community government, or other authority having jurisdiction over a proposed development should review the EIS and be responsible for seeing that the applicant is incompliance with applicable laws, rules, and regulations. Each should scrutinize the EIS to insure that laws are being followed and that unacceptable activities are eliminated from the plan (or that there is a mitigation program developed). Each regulatory agency should be responsible for enforcement of the agreements entered into with the developer. Local governments should similarly be responsible for insuring that agreements or local laws are enforced.

UNIT 10

DEVELOPING A PROBLEM SOLVING MECHANISM

Tourism development in Central America, like many other forms of economic development, has continued virtually unregulated with little input from government officials, the private sector, or conservation organizations. Some investment and financing regulations are in place, but only within the last few years have countries like Costa Rica, Guatemala, and Honduras begun to establish these and to scrutinize the impacts of tourism development (see Appendix C). Most of the authority and responsibility for planning rests within the ministry of tourism. However, nearly all development is planned by individual developers and tourism operators. Decisions are based on profit potential, frequently with little concern for environmental or social issues.

NATIONAL TOURISM ISSUES

- Short Range Planning
- Long Range Planning
- Laws and Regulations
- Education
- Reviewing Proposed Tourism Development
- Fees and Taxes
- Training of Professionals
- Exchanging Data
- Protection of Natural Resources
- Protection of Archeological Sites
- Protection of Human Rights
- Economic Planning

KEYS TO NATIONAL ECOTOURISM (SUSTAINABLE) COUNCIL SUCCESS

The development of councils and advisory groups like the NECs is certainly not new or unique, however, their long-term success is unique. NEC assessment at this stage indicates that the following are necessary for success:

- The NEC should remain advisory in function. It should review, discuss, and provide training programs and other services, but not be regulatory in nature.
- The group should be sponsored by a ministry or the private sector, but should remain autonomous so that it is not viewed as an arm of any one organization.
- There should be a paid executive secretary to organize meetings and carry out the routine business of the NEC.
- There should be economic support for the NEC from the private sector, the government, and the international community.
- The structure of the NEC should be maintained so that there is open communication between the people of local villages, tour operators, and on up to the ministry level.
- Any stakeholder group may provide the impetus for the formation of their own local, national, or regional ecotourism council. Key to the creation of such groups are the organizational suggestions mentioned in this unit and the desire for open communication between stakeholders.

During 1992, the Paseo Pantera Ecotourism Project (PPEP) surveyed all countries within Central America and found that governmental agencies, the tourism private sector, conservation organizations, local communities, and NGOs representing indigenous peoples rarely discussed or consulted one another on tourism issues. The results of this communication gap are often quite clear. Probably

the greatest example is the lack of visitor or tourism plans as part of park management in the majority of protected areas throughout Central America.

THE NATIONAL ECOTOURISM (SUSTAINABLE TOURISM) COUNCIL (NEC)

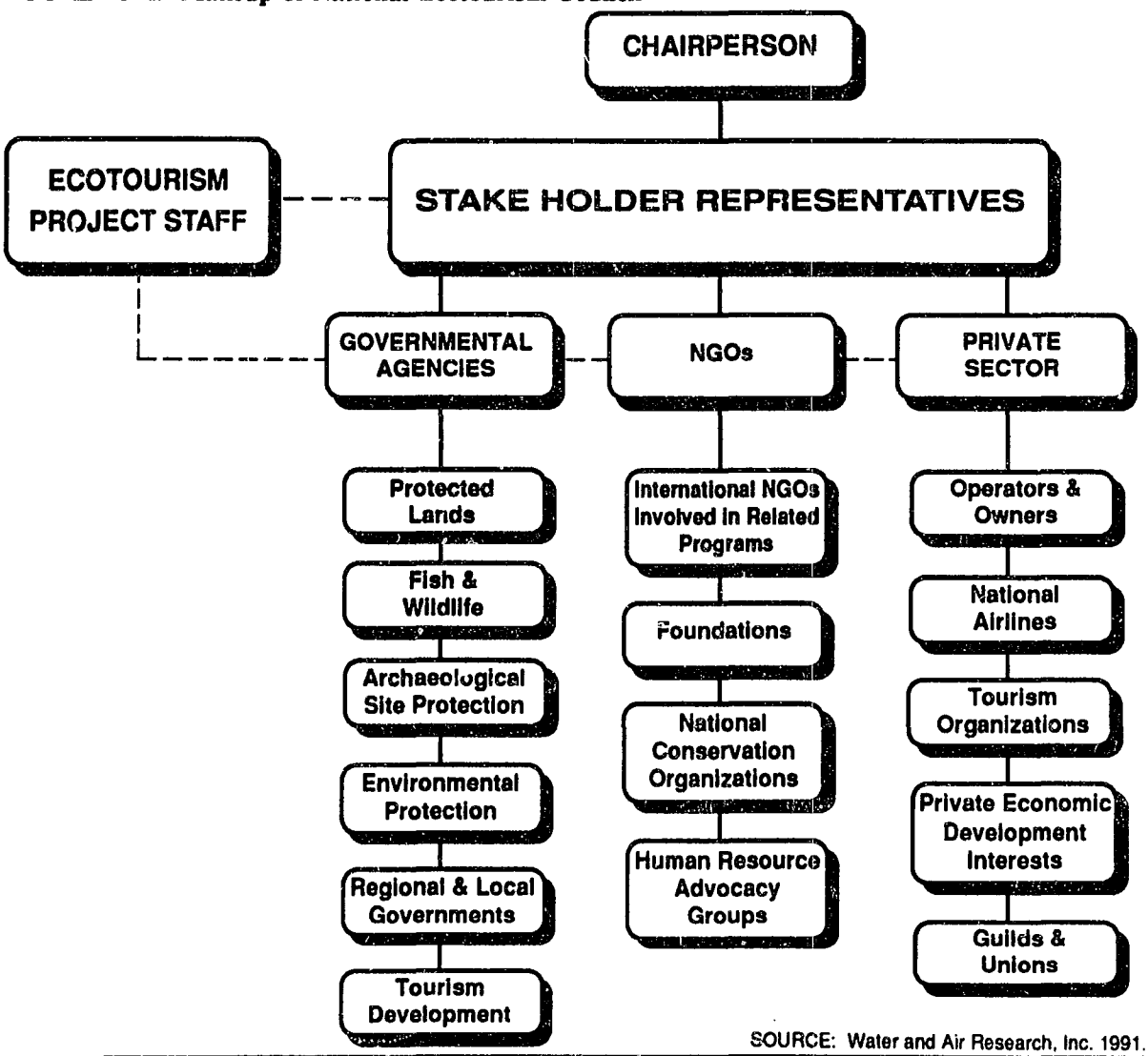
After many interviews and discussions with a wide range of people in Central American countries, PPEP concluded that the best way to develop tourism in a sustainable way and to support conservation was to create an advisory council of individuals who had a stake in tourism development. These are titled National Ecotourism Councils and have been established in Guatemala and Honduras. The Costa Rican NEC is nearly established but has not received official government recognition due to concerns of the Ministry of Tourism. All of the NECs are made up of representatives of various stakeholder groups (Figure 10-A).

Stakeholder Groups

Stakeholder groups are made up of the tourism private sector; tourism guilds or professional organizations; natural resource and tourism governmental agencies; conservation organizations; and representatives from indigenous cultures, regional peoples, and local communities. Each of these groups has a major role in tourism development and a large stake in the way it is carried out. In the master design for the creation of the NEC, each stakeholder group appoints a representative to the council. In turn, issues which are brought before the NEC are taken back by the

91-7655.2/Renarm Bkt

FIGURE 10-A. Makeup of National Ecotourism Council



SOURCE: Water and Air Research, Inc. 1991.

SUMMARY OF NEC PRIORITIES

- Economic support of conservation and protected areas.
- Establishment of training programs for tourism and protected personnel.
- Protection of natural resources from unplanned development.
- Regulation and evaluation of tourism development.
- Short- and long-range planning as a joint effort between the private sector and governmental agencies.
- Establishment of methods which will allow local people a voice in tourism development.
- Maintaining tourism as a profitable yet sustainable method of economic development.
- Coordination of the efforts of international conservation NGOs, international development agencies, the private sector, and other stakeholders to avoid overlap, conflict, and confusion.
- Collection and exchange of data on tourism.
- Development of international cooperation within the region to establish similar policies and to exchange information.

representative to the council for discussion. The results of these discussions are then brought back to the council by the representative.

Also serving on each council are ministers of natural resources or directors of protected areas, ministers of tourism and/or economics, and those governmental agencies which have statutory authority that regulates tourism and the use of protected areas. Additional organizations which are often involved are university representatives, the military, international development agencies, and outbound operators from other countries.

NEC Priorities

After the stakeholders are identified, these groups in Costa Rica, Guatemala, and Honduras are brought together under the direction of a PPEP National Representative to develop a list of national concerns and priorities regarding tourism and conservation within each country.

The most important function of the NEC is to facilitate communication between groups that have rarely worked together or discussed the issues of tourism development and conservation in the past. Many stakeholders have previously assumed that they are at odds with one another when in fact there has been no effort to communicate and to learn from one another. As an example many conservation groups assumed that the tourism industry opposed conservation and payment of higher entrance fees to protected areas. On the contrary, they have learned that most tourism companies are in the forefront of movements to get entrance fees raised so that appropriate infrastructure is developed to protect the areas and provide services to visitors. See Appendix C for more details on NEC Development.

REGIONAL OR LOCAL ECOTOURISM COUNCILS

A future goal of the national NECs is to establish regional NECs structured in a similar fashion to themselves. In areas where there is considerable tourism development, like the Peten of Guatemala, there has been disagreement among government officials, local tourism operators and the people of the region concerning program objectives. The creation of a local ecotourism council would act as a forum in which to discuss and resolve local issues. It would be tied to the NEC, and through it local issues could be brought to national attention.

CENTRAL AMERICAN COUNCIL ON SUSTAINABLE TOURISM DEVELOPMENT (SITCA)

This group is comprised of the Director's of National Tourism Institutes or Ministers and is a forum for discussing tourism issues. This group has become concerned about the environmental impacts of tourism development. SITCA is working with the Central American Commission on the Environment and Development (CCAD) and the World Travel Organization (WTO) to develop NECs in all Central American countries. As Central American countries continue to work cooperatively in economic development, it becomes paramount for international cooperation to exist between NECs. There are a number of protected areas which are now shared among countries and must develop similar tourism management plans. A Central American Sustainable Ecotourism Council would be composed of members from all the national NECs. The stakeholder groups would be made up of the representatives from each national stakeholder group. As with the national councils, these groups would send their own representative to the regional council. This group would then advise international travel organizations, the Organization of American States, the United Nations, SITCA, CCAD, international NGOs, and others with regard to sustainable tourism development in the region. The would also exchange ideas and information and take these back to their respective countries.

APPENDICES

APPENDIX A

Annotated Bibliography of
Referenced and Pertinent Literature

APPENDIX A

ANNOTATED BIBLIOGRAPHIES OF REFERENCED AND PERTINENT LITERATURE

INTRODUCTION

This Annotated Bibliography is made up of publications and articles that provided information used during the preparation of this work and important references that may be helpful to those planning sustainable tourism development. Over the past three years, the number of publications on ecotourism and related fields has grown enormously, so this list is by no means complete. The publications were read and summarized by the authors, Leslie Haysmith, and E. Lynn Mosura.

Agardy, M.T. 1990. Integrating Tourism in Multiple Use Planning for Coastal and Marine Protected Areas. Vol. I pg. 204-210. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst. Newport, Oregon.

Coastal zones are being heavily degraded worldwide due to over fishing, development, pollution, deforestation, and other factors. Multiple use planning must be undertaken to minimize impacts of these factors and allow appropriate development to occur. The Australian Barrier Reef is used as a case study example. Tourism is an important use around protected areas and can be designed to fit the protection required. In turn it can support local economy and the protected area. Protected areas can be used to promote tourism by maintaining the environment that is attractive to visitors.

Agency for International Development - Bureau for Latin America and the Caribbean. 1989. Environmental and Natural Resource Management in Central America: A Strategy for A.I.D. Assistance.

This paper presents a rationale and strategy statement and outlines the boundaries for A.I.D. assistance in Central American projects. The paper also discusses the problems and constraints to remedial action. A.I.D.'s priority areas are outlined as: 1) sustainable agriculture, 2) production from natural forests, 3) management of wildlands and protection of biological diversity, 4) management of critical watersheds, 5) policy formulation, 6) institutional strengthening, and 7) environmental education. The targeted assistance levels from A.I.D. are presented, estimating that funding to Central America in the projected decade will range from $400 to $650 million.

Alderman, Claudia L. 1990. A study of the Role of Privately Owned Lands Used for Nature Tourism, Education and Conservation. Conservation International, 1015 18th St. N.W., Washington, D.C. 20036.

This paper reviews the literature of ecotourism focusing on economic, social, and ecological issues. It also discusses private nature preserves as models for exploring solutions to nature-tourism issues. This is accomplished through five main case studies from Costa Rica, Colombia, and Belize. The author concludes that: 1) private reserves can generate substantial local employment, 2) costs of establishing private reserves are high, but a large percentage are owned by nationals or local/foreign partnerships, 3) lack of government cooperation is a major obstacle for many of these reserves, and establishing mechanisms to create a legal framework for private reserves is imperative, 4) development of links between private reserves with government and nongovernmental groups is important for long-term viability of reserves, 5) economic viability of private reserves should be assessed so reserves are adequately supported based on what they supply (i.e., ecologically important reserves may only use tourism as supplemental income), 6) plans should be developed for sustainable resource use based on visitor carrying capacity, and 7) private reserves are eager to promote ecological conservation but lack funds or expertise; involvement by local conservation groups would facilitate conservation efforts.

Ashton, Jr., Ray E. 1991. Fundamentals of Ecotourism: A Workbook for Nonprofit Travel Programs. Water and Air Research, Inc. 6821 S.W. Archer Rd. Gainesville, Florida 32608.

This workbook provides a summary of a workshop held in conjunction with the Second International Ecotourism Workshop on December 1, 1990, in Miami, Florida. It defines ecotourism and characterizes requirements of the ecotraveler including a traveler's profile and overall traveler expectations of transportation, food, housing, guides, and the tour "experience". It also outlines differences between the natural history, cultural, and adventure traveler. Responsibilities, accountability, and evaluations of inbound ecotour operators are given. This is followed by a description of services provided by the outbound tour operator and instructions on evaluating outbound operators and their ecotour itinerary. Direct and indirect support of conservation through travel are discussed along with the ethics of operators and travelers, as well as marketing of ecotourism.

Ashton, Jr., Ray E. 1991. Some Basics That are Used in Selecting Ecotourism Operators by Foreign Operators and Tourists. Seminario Ecoturismo y Conservacion de Recursos (in Spanish). Mundo Maya Program, Guatemala City. pg 76.

This paper explains the foundations of ecotourism, emphasizing that quality is more important than quantity, and describes various types of nature tourism. It also gives background information on overall functioning of outbound tour operators and explains the structure of ecotourism (e.g., components of supply and demand). It then depicts ecotourists and their behavior, including how eco-travelers choose trips and operators. Focusing on Guatemala, development of successful ecotourism itineraries that maintain conservation safeguards are discussed along with out-country and in-country marketing.

Ashton, Jr., Ray E. 1991. The Development of "Ecozones," a Method of Protecting Natural Resources From Overuse by Tourism In Marc Miller and Jan Auyong (eds.) 1991. Proceedings of the 1990 Congress on Coastal and Marine Tourism. Volumes I and II. (25-31 May 1990, Honolulu, Hawaii, USA). Gainesville, Florida 32608.

This paper provides background information on the surge in ecotourism that has been influenced by the fact that tourism can provide badly needed foreign exchange to developing countries. The disorganization accompanying the nature tourism explosion is discussed, along with inherent problems such as exploitation of local people as well as the ecotourist, and the environmental degradation. The paper provides a general blueprint on how to develop ecotourism based on ecotourist needs while adhering to economics of tourism and wise conservation practices as outlined in the biosphere preserve approach to wildlands conservation. It outlines several types of ecotourists and their needs followed by a definition and detailed outline of the "ecopreserve" - with its core area, inner buffer zone, and zones of tourism development. The paper also details the various types of ecotourists based on expectations and traveler profiles.

Ashton, Ray E., Jr. 1991. The Financing of Conservation - The Concept of Self-supporting Ecopreserves. Ecotourism and Resource Conservation, Vol. 2, pg. 547-556. First International Symposium: Ecotourism, Ecotourism and Resource Conservation Project, Berne, New York.

Two basic reasons why preserves that are designed to save large areas of natural habitat have failed are discussed: 1) the ecological complexity of the natural ecosystem is not taken into account (i.e., the size of preserve needed for viability of populations), and 2) socioeconomic costs of conservation are inadequately estimated when preserves are established. The concept of an ecological approach to developing wildlife reserves in the form of "ecopreserves" is introduced, followed by an explanation of their structure -- the core area and protective shells). These zones include the inner-shell (heavily restricted with only nonconsumptive use); the second shell specifically utilized for sustained yields (e.g., indigenous peoples, tourism, and natural history education); and the third shell for agriculture and low density housing. Finally, several recommendations are made on the identification, administration, and funding of ecopreserves.

Ashton, Ray E. Jr. 1991. Land Use Planning and Ecotourism. Ecotourism and Resource Conservation, Vol. 1. First International Symposium, Merida, Mexico. Pg. 45-53. Ecotourism and Resource Conservation Project, Berne, New York.

This article defines ecotourism as tourism that is protective of the environment and local people. The term "ecotourism" is becoming a sales gimmick for the tourist trade. The travel industry relies on volume to maintain profit. This is a very important concept to keep in mind when developing protected area management plans. Successful tourism to a protected area evolves from low to high volume tourism within a few years. The article discusses the development of national committees made up of government, private sector, NGO, and other interests to set national policies on tourism and wildland protection. The article discusses the Paseo Pantera Ecotourism Project in Central America.

Ashton, Ray E. Jr. 1991. Defining the Ecotourist Based on Site Needs. First International Symposium, Merida, Mexico. Ecotourism and Resource Conservation. Pg. 91-98. Ecotourism and Resource Conservation Project, Berne, New York.

As various forms of tourism emanate in to protected areas of the world, it becomes important both to the tourism industry and to protected area managers to understand the tourist mentality, their expectations, and the infrastructure that is needed to insure success in long-term efforts to attract tourists while protecting the natural and human resources. It is important that conservationists and managers understand the needs and potential of the various types of tourism into protected areas if they are to determine infrastructure and management techniques.

Ashton, Ray E. Jr. 1991. Trends and Problems in Ecotourism. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

This paper provides a functional definition of ecotourism. It discusses growth of the industry, problems with ecotourism and solutions to these problems from the perspective of wildlands conservation. Ecotourism can be used to provide direct financial support to the specific wildlands area, recognize and support sustainable development rights of local populations, foster appropriate planning, and establish buffer zones around wildlands.

Bermudez, Fernando. 1992. Evolucion del Turismo En Las Areas Silvestres 1982-1991. Ministerio de Recursos Naturales, Energia y Minas Servico de Parques Nationals.

This is one of the first comprehensive reports on tourism utilization of protected areas. It is an example of the type of information needed by park managers to determine what infrastructure is necessary in an area and potential for income generation through visitors.

Boo, Elizabeth. 1989. Ecotourism: the Potentials and Pitfalls. Vol. I and II. World Wildlife Fund. Publication address: P.O. Box 4866 Hampden Post Office, Baltimore, Maryland 21211.

Volume I of this publication demonstrates how the link between tourism and protected natural areas is becoming more and more apparent as the trend to integrate conservation with development increases worldwide. Growth in the tourism industry, particularly to protected areas, is a trend that is demanding research attention. National and international impacts of nature tourism are addressed focusing on benefits and drawbacks at the national, regional, local, and park levels. A comparison of the status of nature tourism regarding government policies and management, marketing and promotion, evaluation, and economic impacts at the national, regional, and local levels is presented for Belize, Costa Rica, Dominica, Ecuador, and Mexico. A comparison of nature tourism at the park level for these countries is done with regards to development of park infrastructure, changing needs in management, inadequate entrance fees, roles of tour operators, carrying capacity of protected areas, and private protected area tourism. The report makes several recommendations on tourism development in protected areas concerning strategies, planning, and management. It includes a checklist for participants in nature tourism development including government officials, tour operators, wildlands managers, international funding, and conservation organizations. Volume II presents case studies in Belize, Costa Rica, Dominica, Ecuador, and

Mexico resulting from questionnaires and airport surveys. Chapter categories include status of the tourism industry (e.g., history and growth, tourism attractions, policy, management, and promotion); status of protected areas, emphasizing demand and supply; impacts to protected areas (economic activities, environmental impacts, and sociocultural considerations); and obstacles and opportunities for growth of nature tourism. Each country's study concludes an analysis of two specific park/protected areas.

Boo, Elizabeth. 1991. Ecotourism, a Tool for Conservation and Development. 2nd International Symposium, Ecotourism and Resource Conservation, Vol 1. Pg. 54-60. Ecotourism and Resource Conservation Project, Berne, New York.

Tourism in the Caribbean region produces $5.6 billion annually with more than 300,000 people traveling each year. Studies conducted in 1988 in Belize, Dominica, and Costa Rica showed that there was little damage done to parks from tourists. During that study, no ideal ecotourism models were found. Needs and potential impacts vary too much to develop a good model.

Boo, Elizabeth. 1991. Making Ecotourism Sustainable: Recommendations for Planning, Development, and Management. Nature Tourism, Tensie Whelan (ed.) Island Press, Washington, D.C., pgs. 187-199.

This paper outlines some of the findings and recommendations on ecotourism from a World Wildlife Fund study. It describes a comprehensive framework for ecotourism and divides it into planning, development, and management phases. Recommendations for key players, including ministries, park managers, tour operators, and local conservation organizations, are provided for each phase.

Brooke, James. May 19, 1991. Brazil's Forests in the Balance. The New York Times. New York, New York.

This article covers the rise of nature tourism in the Brazilian Amazon, particularly in Manaus, and the accompanying development of infrastructure to support the influx of tourists. It discusses change in attitudes and policy by politicians and locals in Brazil and the necessity to monitor carrying capacity of natural area attractions to assure that tourism does not degrade the very resources it depends upon.

Brown, Noel. 1991. Adventure Travel and Ecotourism in the 21st Century. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

The United Nations considers travel as an inherent human right. International travel is a major contributor to national incomes. Ecotourism could make significant contributions to certain global environmental issues, including management of human reproductive capabilities, coastal and marine areas, biological production systems, and atmospheric resources. The loss of biological diversity, productive agricultural soils, and tropical forests are important biological issues that the ecotourism industry could help address.

Budowski, G. 1974. Fifth International Congress AIT, Leisure and Touring, Planning for Leisure, Final Report. Al Garve, Portugal.

This is a summary of the findings of the AIT meeting which discussed the impacts of additional leisure time and travel on people and the environment. The concerns and problems listed in this article, produced nearly 20 years ago, are similar to those being addressed in current literature.

Careless, Ric. 1991. Tourism Resource Inventory Methodology. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

This paper presents a system to inventory tourism resources. A hierarchial classification scheme is used to classify resource-based tourism activities into product sectors, product groupings, and products. In order to forecast future use patterns, each tourism product is categorized by three geographical factors: biophysical, human, and natural resources. The inventory components can be digitized and used in a Geographic Information

System (GIS) that then can accommodate the dynamic aspect of the inventory and can be used to generate capability ratings of tourism products at a specific site.

Ceballos-Lascurian, Hector. 1991. Tourism, Ecotourism and Protected Areas. First International Symposium Ecotourism and Resource Conservation, Vol. 1, Pg. 14-23.

This paper was a product of the Ecotourism and Resource Conservation Project in Berne, New York. According to George Washington University studies, tourism was projected to produce $40 billion in 1990. The drive of nature-based tourism is the increasing desire by people to get back to nature as human populations grow. Tourism has reached 2nd or 3rd in foreign exchange in Costa Rica, ranks highly in other Central American countries, and is $3.2 billion in the U.S. It is important that tourism use and conservation be balanced. The author discusses the economic effects of tourism in Kenya where in Amboseli National Park, 2,000 jobs are generated by tourism. Tourism planning should include input for private enterprise, local residents, and NGOs. These should be represented on tourism boards. Some preserves could be self-sustaining through funding from tourism. Ecotourism is four or five times lower in development cost than traditional high impact, hotel-based tourism. The author states that virtually no successful ecotourism models or case studies exist which indicates that it may not be a viable option.

Cifuenates, Miguel, et al. 1990. Capacidad de Carga Turistica de la Reserva Biologica Carara. Programa de Manejo Interegrado de Rescursos Naturales Servicio de Parques Nacionales, Costa Rica. Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE)

This is a report which attempts to determine the carrying capacity of Carara Biological Reserve in Costa Rica. It provides information on how to collect data and provides information on visitor use of this popular reserve.

Clark, J.R. 1991. Carrying Capacity: Defining the Limits of Coastal Tourism. Vol 1. pg. 117-131. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst. Newport, Oregon.

Land use planners and policy makers usually ignore carrying capacity when developing policies. It has been used in some U.S. National Parks but virtually has not been employed in coastal habitats. Carrying capacity should be looked at as a balancing mechanism between habitat protection and tourism use. Tourism has grown at a rate of 10 percent per year since 1980. Average Gross Domestic Product was $13,000 per employee. Major problems in the Caribbean caused by uncontrolled tourism include near-shore pollution from sewage, beach erosion due to sand manipulation, and destruction of reefs. Conflicts from other economic developments include agrochemicals, industrial wastes, and siltation. Cruise ships can be extremely hazardous to reefs. The greatest negative effect is overall decline in water quality. The self-destruct theory of tourism begins with a remote area that is promoted until there is mass tourism which leads to total degradation of habitat and ends in tourism loss. Clark summarizes Sadler's comments regarding the issues that governments must regulate and plan to sustain natural and human resources in the wake of tourism development.

Cook, R.J. 1991. The World Heritage Convention and Implications for Environmentally Sensitive Tourism Development. Second International Symposium, Ecotourism and Resource Conservation. Vol 2 Pg. 541-546. Ecotourism and Conservation Project, Berne, New York.

There are 135 nations with defined national parks. One hundred eighteen of these are signatories of the World Heritage Convention. As part of the definition, a world heritage site must permit public visitation. This is based on the Organic Act of 1916 which requires public access to U.S. National Parks. There are 322 sites which have been designated as World Heritage Sites. When these have been designated, there is an increase in public exposure and interest in the site which can lead to increased tourism. Visitor and human management and staff training to accomplish this are essential to protection.

Colvin, Jean. 1991. The Scientist and Ecotourism: Bridging the Gap. Second International Symposium, Ecotourism and Resource Conservation, Vol. 2 Pg 575-581. Ecotourism and Conservation Project, Berne, New York.

Scientists working in developing countries have an obligation to make their research part of the common life in the host countries. Only 7 percent of the ecologists working in developing countries are from those countries. Colvin proposes a code of ethics for researchers working in developing country wildlands. This includes using local students to provide information to local people and the country by providing reports in the local language and helping to distribute this information. He also advises that they participate in public education in schools and universities and educate tourists who are visiting the area. In addition, he advises that they hire local people to assist with projects and training local people as guides. Volunteer tourism groups and activities are outlined and travelers who participate in these programs are profiled. People who participate in these programs are willing to rough it and pay for meaningful experiences where they can be involved. They dislike large tour groups and want some physical and mental challenges.

Cornelius, Stephen E. 1991. Wildlife Conservation in Central America: Will It Survive the '90s? Transaction of the 56th N.A. Wildlife and Natural Resource Conference. World Wildlife Fund, Washington, D.C.

This paper reviews the status of protection of wildlands in various Central American countries. Conditions which have the greatest impacts on conservation include military conflict, debt crisis, national development policies, and social inequities. If these issues are not addressed soon, the natural resource base for Central America will be lost. The best way to accomplish this is through a regional strategy. Costa Rica and Guatemala have omnibus wildlife protection laws which address use and management. Panama and Nicaragua have laws which control hunting, while El Salvador and Honduras have no laws covering wildlife protection. Belize, Honduras, and Guatemala have a moratorium on wildlife use until further studies are made. All Central American countries are CITES signatories. Honduras in 1990 stopped wildlife export because the numbers being exported were far above the number planned and there was no real way to regulate export. Major problems with protection are low pay for staff, constant restructuring of conservation bureaucracies, training, and the fact that the majority of conservation departments budgets go to salaries and not to infrastructure. Sustainable development does not have any good examples in Central America. Some countries, such as Belize, are turning over conservation to NGOs. This may cause concerns over interests and ownership. Other countries are developing a decentralized approach to protection of lands and wildlife. This is being done in Costa Rica. The publication provides a table of protected areas by country.

Cutlack, Meb (editor). November 1990. Belize Review. News, Views and Ecotourism. Belize Review, LTD, 7 Church St., Belize City, Belize.

This Bulletin covers breeding news and the other information from the "new" Belize zoo; expansion of Cockscomb Jaguar Preserve; "farm hotels" in Belize; purchase of a large land parcel on Ambergris Cay by the Belizean government for environmental protection; an update on drug trafficking and various conservation issues in Belize; and a classified section on workshops, property for sale, and advertisements.

Dangermond, Jack. 1991. The Application of GIS to Ecotourism and Adventure Travel: Policy, Planning, Decision Making, Management and Monitoring. Proceedings of the 1991 World Congress on Adventure Travel and Eco-tourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

This paper provides an overview of GIS technology. It also outlines how GIS can be linked with ecotourism development to analyze, plan, and monitor the large geographical areas that may be involved.

Dobias, R.J. and Bunpapong. 1990. Turn of the Tide: Making Tourism Work for Marine Park Conservation. Vol. I pg. 175-179. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst. Newport, Oregon.

This paper is a case study of the rapid tourism growth experienced by Ko Phi Phi National Park, Thailand. Issues pointed out include the change of traditional ways of life (fishing) and better-paying jobs in tourism. Land prices have increased several times over and have caused encroachment into the park. Small entrepreneurs are being pushed out by outside business interests which are better financed and which do not have ties to the local area or concern for long-term effects. The central government is taking more notice because of increased revenues. There should be a strong planning process which includes local people in the environmental and socioeconomic issues. Management of the park should be within the personnel and budgetary capabilities and all governmental agencies should cooperate in controlling tourism. It is important that the community leaders plan to use tourism to sustain conservation. Local leaders, park officials, and tourism officials should work together toward problem solving in the region. The park should have a liaison officer. The park should support infrastructure development, such as education, and set up shops for people to sell goods. The park should evaluate the socioeconomic status of the local people each year.

Doeleman, J.A. 1990. On the Economic Valuation of Marine Wilderness. Vol. II. pg. 413-421. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst. Newport, Oregon.

This paper surveys the theory of environmental valuation and questions the pragmatism of a microeconomic approach to environmental valuation. In a microeconomic approach, environmental values reflect the scarcity of marine resources resulting from the macro development of the economy. This economics paper establishes the economic basis for the permanent establishment of protected marine areas which are protected from politics and saved for future generations.

Drake, Susan. 1991. International Union for Conservation of Nature and Natural Resources. 1992. Protected Areas and Human Survival: Enhancing the Role of Conservation in Sustaining Society. Fourth World Protected Areas Congress - Draft program. IUCN. Avenue du Mont Blanc, 1196 Gland, Switzerland.

This paper outlines the program content, approach, and objectives for the Fourth World Congress on Protected Areas to be held in Caracas, Venezuela. Plenary presentations will involve contributions of protected areas to sustainability in society, protected area issues in the '90s, and expanding partnerships in conservation. Five workshops will be held focusing on 1) building partnerships for conservation (a cross-sectional approach including NGOs, private lands, and tourism); 2) social, economic and political issues (regional land use and the MAB program); 3) protected areas in a changing world (environmental impacts, restoration ecology, and research); 4) enhancing protected area management, expanding the global network (protected areas, corridors, buffers, coastal zones), managing protected areas (implementation of plans, technologies, data, training, and education), and managing genes and species (endangered species, reintroductions, and exotics); and 5) building broader support for protected areas (i.e., innovative funding, investment portfolios, international conventions, and cooperation).

ECLAC. 1985. Tourism and Environment in Caribbean Development with Emphasis on the Eastern Caribbean. Economic Commission for Latin America and The Caribbean, Subregional Headquarters for the Caribbean, United Nations Environmental Program.

Environmental and social stress are closely related to saturation, defined as the number of tourist arrivals which can be accommodated without undue stress on the physical environment. Saturation levels change and are interpreted differently by people, governments, and proprietors. Data limitations on tourism due to lack of funds or incentives lead to poor estimates on carrying capacities. Social tensions can be reduced by educational efforts. Carrying capacity calculations are difficult because of varying lengths of stay, seasonality, varying activities, and other variables. Tourism in the region has developed based on demand and there has been little environmental evaluation, regulation, or planning.

Ecotourism and Resource Conservation: First International Symposium, April 17-19 1989, Merida, Mexico and the Second International Symposium, November 27-December 2 1990, Miami Beach, Florida. Compiled by Jon Kusler.

These papers, compiled by Jon Kusler, form a large two volume collection of papers from two international symposia addressing nature-based travel as an incentive for the conservation of natural and archaeological resources. Overall topics include key players in the tourism industry; land-use planning, integrating conservation with development; the ecotourist; ecotourism and native cultures; local community and landowner involvement/benefits from ecotourism; perspectives from various nations; protected areas; ecotourism and coastal zone management; ecotourism and development; tour operator perspectives; journalism, publicity and ecotourism; and training and education. The appendix lists research interests of symposium participants, a code of ecotourism, U.S. federal agency assistance for ecotourism activities, press releases, and names and addresses of authors.

Eidsvik, Harold V. 1990. A Framework for the Classification of Terrestrial and Marine Protected Areas. IUCN-The World Conservation Union. Switzerland.

This report provides an important summary of the reasons for and the objectives of various types of protected areas worldwide. It points out that it is important to determine the purpose of protected areas before creating a management plan.

Eidsvik, Harold K. 1990. A Framework for the Classification of Terrestrial and Marine Protected Areas. International Union for the Conservation of Nature and Natural Resources (IUCN). Avenue du Mont Blanc CH-1196, Gland, Switzerland.

This paper delineates categories of protected areas and portrays practical benefits of the classification system. It describes six categories with associated objectives: scientific reserves, wilderness areas, national parks and equivalent reserves, natural monuments, habitat and wildlife management areas, and protected land/seascapes (ecosystem conservation areas). International area designations are also described such as World Heritage sites, RAMSAR (wetland areas), and Biosphere Reserves. The philosophical foundation of protected areas and conservation objectives is provided along with eight principles to integrate protected areas with other forms of resource utilization. Presents a summary of the IUCN general assembly resolutions from past international meetings.

Environment Bulletin: A Bi-monthly Newsletter of the World Bank Environment Community. Vol.2, No. 2. World Bank Publications, P.O. Box 7247-8619, Philadelphia, PA 19170-8619.

Several interesting articles appear in this newsletter including pieces on joint management of multilateral funds by World Bank, UNEP and UNDP on global environmental problems; a bank colloquium on methods to help disaster-prone developing countries; environmental challenges posing diverse resource management issues; deforestation and biological diversity addressed by bank-supported lending; environmental concerns of Europe, the Middle East, and North Africa that intensify bank responses to diverse environmental problems; environmental initiatives in Asia; and a new environmental assessment unit that promotes directives to share best practice experiences worldwide.

Environmental Profile of Honduras 1989 - Summary. Secplan and Desfil. A.I.D. Contract/DHR-5438-C-00-6054-11.

This paper presents an environmental profile of Honduras including basic data, scientific research, training, legal background, institutional coordination, and integrated management of critical ecological areas. It also outlines demographic, socioeconomic, and cultural contexts for development; water and watershed resources; agriculture resources; forest resources; coastal zone resources; wildlands and wildlife resources; environmental pollution; environmental education; and the institutional and legal framework for environmental protection.

Faust, Betty. 1991. Maya Culture and Maya Participation in the International Ecotourism and Resource Conservation Project. 1st International Ecotourism Symposium. Ecotourism and Resource Conservation, Vol. 1 Pg 178-221. Ecotourism and Resource Conservation Project, Berne, New York.

There is a need for formal impact assessments before developments are permitted within Indian communities. Projects fail in communities often because the people who are proposing the project consider the Maya to be ignorant. In fact, people who are not familiar with local customs, language, and culture make mistakes and wrong assumptions. In many countries, this also involves a caste system and prejudice. Tourism development should take into account or allow communities to decide on visitation and type of interactions between tourists and people in the community. A knowledgeable anthropologist should work with the community and the planner. There are problems with having too many tourists too often in the community. Possibilities for development include demonstration areas and tourist cabins. Agreements should be reviewed for fairness, budget and accounting procedures, and environmental protection. The article provides a list of activities and services that may work with Mayan communities.

Gennino, Angela (ed.). 1990. Amazonia: Voices from the Rainforest. Rainforest Action Network and Amazonia Film Project. 301 Broadway, Suite A, San Francisco, California 94133.

This paper begins with an overall description of the status of destruction in Amazonia, then explains how this action guide can inform individuals and groups how to get involved and stay informed on the issues and events. It presents an overall background on native Amazonians, forest gatherers, colonists, and support groups. The majority of the document is a directory of groups involved in biological and indigenous peoples protection in South America, North America, Europe, and Asia/Pacific. This publication is the result of questionnaires and interviews during the filming of "Amazonia: Voices from the Rainforest," a documentary for which this publication is to serve as a companion guide.

Gillis, Malcom. 1991. Tropical Deforestation in the Context of Global Environmental Problems. USAID RENARM

This is an excellent source of statistics regarding deforestation and the reasons for worldwide destruction of forests. It points out that no country has a sustainable timber-cutting program. Between 1950 and 1983, there has been a worldwide loss of 60 percent of forest and a 38 percent loss in Central America.

Gillis, Malcolm. 1991. Tropical Deforestation in the Context of Global Environmental Problems. A paper presented at the May 1991 RENARM meeting, Tegucigalpa Honduras.

The author of this paper introduces the patterns of tropical deforestation that are severely undermining prospects for sustainable development in tropical nations. An overview of the concept of sustainable development is presented, followed by a sketch of the dimensions of deforestation problems. Following these is an explanation of the four basic causes of tropical deforestation, and remedies for failure in government policies toward tropical forests. The author contends that powerful economic arguments can be used for curtailing natural resource waste and environmental degradation.

Gillis, Malcolm. 1991. Tropical Deforestation in the Context of Global Environmental Problems. Presentation -- USAID -- RENARM, Tegucigalpa Honduras.

This scholarly paper discusses the various reasons for deforestation including economic, social, and political influences. It also discusses the differences between sustainable and unsustainable development and reasons why the world should be concerned about the loss of forests.

Goldfarb, Gabriela. 1989. International Ecotourism: A Strategy for Conservation and Development? M.A. thesis. John F. Kennedy School of Government, Harvard University. Cambridge, Massachusetts.

This paper begins with an introduction on conservation-led versus development-driven ecotourism and national goals versus local impacts and then focuses on economic versus nonprofit impacts. It discusses international

tourism and its resources and distribution in developing countries and the role of governments in tourism development. It then addresses the goals and impacts of national-level tourism including generation of foreign exchange, employment, the "multiplier effect," promotion of regional development, and diversification of national economies. The determinants of economic impacts of tourism at the national level are brought forth, highlighting the extent and diversity of resources; government planning and management capabilities; bargaining power of the tourism industry; style of tourism development; volume requirements; international transportation and proximity to developed countries; and political stability. Finally, the report focuses on different components of national goals versus local impacts emphasizing volume requirements versus local carrying capacity, style, distribution of tourism benefits, reactive versus proactive planning, and vulnerability from dependence on tourism. The author cautions that nature tourism should be viewed as only a possible tactic and not a reliable strategy for many sites.

Haas, Glenn. 1991. Information Needs for Sustainable Tourism. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Englewood, Colorado 80111.

The Recreational Opportunity Spectrum, a comprehensive land-use planning approach, is extended into tourism. A recreational demand hierarchy is discussed within the context of a tourism opportunity spectrum. Levels within the hierarchy include recreational activities, recreational setting, recreational experiences, and recreational benefits. Using these tools along with Geographic Information Systems will help define information that is needed for a sustainable tourism industry.

International Union for Conservation of Nature and Natural Resources/United Nations Environmental Program/World Resources Institute. The Biodiversity Conservation Strategy Program--Program Description. 1990. World Resource Institute. 1709 New York Ave. N.W., Washington, D.C. 20006.

IUCN, UNEP, and WRI have organized this collaborative program with the overall objective of minimizing loss of biological diversity and implementing wise management of our resource base. Objectives include developing a biodiversity conservation strategy; developing and promoting a decade action plan; generating a biodiversity status report; analyzing causes of biodiversity loss; identifying and promoting skills, methods for management, and investments necessary to bring benefits from natural resources to local communities; cultivating methods for international cooperation to promote conservation of biodiversity; and promoting biodiversity conservation as a goal for development. A network of partner institutions based on various levels of involvement is proposed, followed by recommendations on research, workshops, and regional consultation.

Innovative Biological Technologies for Lesser-Developed Countries - Workshop Proceedings. 1985. Washington, D.C. U.S. Congress, Office of Technology Assessment, OTA-BP-F-29.

This paper covers a broad array of topics on alternative technologies including the potential of innovative technologies; the role of the Agency for International Development and associated need for cooperative ventures, field demonstrations, innovative research, program flexibility, and trained A.I.D. staff; under-exploited plant and animal resources for developing country agriculture; native plants as an innovative biological technology; multiple cropping systems as alternative agriculture; plant ecosystems that require low water and nitrogen for arid developing countries; low cost aquatic manure (Azolla) for agriculture crops; use of zeolites in agriculture; agrotechnologies based on symbiotic systems that fix nitrogen; mycorrhiza, agriculture technologies; low use of fertilizer as an approach to increasing tropical food production; and the gene revolution.

Integrated Management Program of the National Parks Natural Resource Service, Costa Rica and CATIE. 1990.

This paper describes tourist carrying capacity in the Carara Biological Reserve (Costa Rica) and presents an overview of the management of protected areas and their public use in Costa Rica. Management of the Carara Biological Reserve is outlined, including a management plan, zoning, general problems, visitor sites, and visitor control. Management capacity is discussed with reference to personnel, facilities, equipment, and financial resources. Various zones of the park are also outlined: areas for restricted use, scientific studies, special use,

and public access. The report addresses carrying capacity as theoretical, actual, and effective, and assesses carrying capacity for different sites.

Irema, Gerardo Abarca, M.A., M. Gonzalez, and M.T. Rivas. 1991. Investigacion y Analisis de las Causas y Effectos Consecuencias Negativas Para el Turismo. Instituto Interamericano de Tecnologia, Costa Rica.

The paper discusses the reasons behind and effects of deforestation, plus use of forest lands by various economic developments including tourism in Costa Rica.

Kuss, Fred R., Alan R. Graefe, and Jerry J. Vaske. 1990. Visitor Impact Management. Vol. I and II. National Parks and Conservation Association. Park Education Center. 1015 31st St. N.W., Washington, D.C. 20007.

Volume I is entitled *Visitor Impact Management-a Review of Research.* It addresses the impacts of recreation on soils, vegetation, aquatic and terrestrial resources (e.g., wildlife), and the visitors' actual recreational experience. It emphasizes the importance of understanding what land-use patterns will result in an environment/visitor experience consistent with impact standards selected for a specific area. It also emphasizes the need for consistent resource monitoring, particularly when management activities are changing. It highlights the importance of setting specific objectives and selecting appropriate indicators that are representative of optimal social and resource conditions. Volume II, *Visitor Impact Management-the Planning Framework,* presents several visitor impact management (VIM) principles that underlie the process of evaluating visitor impacts. It describes the VIM process as a means of providing a vehicle for systematic identification of visitor impact problems, their causes and solutions. These are followed by case studies from six parks and preserves in the U.S. Several appendices are included to assist managers and planners in applying the VIM process to specific situations. These include a checklist of VIM questions and solutions, tools for impact assessment, methods of classification for overall level of impact, a review of management and planning frameworks, and a summary of research considerations.

Kutay, Kurt. 1989. The New Ethic in Adventure Travel. Vol. 1, No. 4. Buzzworm: The Environmental Journal.

This paper documents the environmental and cultural woes created by tourism in developing countries and contrasts these to the positive developments in organizations to protect cultural and environmental features. Many worldwide examples are given such as the new breed of tourists that are working on their vacations to clean up the environment or to collect information as researchers, and it describes how tourism operators can contribute to conservation. Tourism is presented as a vital source of foreign exchange and efforts by international conservation groups to bring a strong alliance between tourism and conservation are highlighted. Emphasis is put on hopes to endorse the East African saying, "Wildlife pays, so wildlife stays" with examples of nature tourism bringing large foreign revenue to several countries. The necessity of providing local benefits and involving locals in parks and tourism management is discussed along with natural resource depletion resulting from tourism and how tourism can be properly managed.

Latin American University of Science and Technology (ULACIT), San Jose, Costa Rica. November 1990. Regional Graduate Program in Ecological Tourism - Informational Summary.

This paper describes the overall approach and justification for the ecotourism educational program, including degrees and certificates offered by the School of Tourism at ULACIT. The 2-year program in Ecotourism is outlined with these areas of concentration: neotropical biota, tourism, application of administration to tourism, and an alternative concentration in organization and group direction or administration and planning. The paper describes general and specific objectives of the program, outlines classes and credits available, and discusses professional options for graduates of the program.

Leakey, Richard. 1991. Kenya's Parks System and Ecotourism. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

The unplanned growth of tourism, increased wildlife poaching, and a demoralized, under-funded Kenya park service resulted in seriously degraded national park resources by 1989. The tourism industry that was developed around these parks was threatened; therefore, the government acted by creating the nongovernmental Kenya Wildlife Service. Other problems facing the service are elephants travelling into historic grazing areas beyond the park boundary which are now private agriculture lands. Management of the animals and protection of people and their lands is a difficult problem. Government funding for the Kenya Wildlife Service will cease in 1993. They intend to generate needed revenues through ecotourism. The ecotourism necessary to support the Kenya Wildlife Service is difficult to sustain without adequate infrastructure. Since national funding was not available for this, the Kenya Wildlife Service approached the philanthropic community of Europe and the United States to generate a $300 million fund to undertake infrastructure development.

Ledec, George and Robert Goodland. 1988. Wildlands: Their Protection and Management in Economic Development. The World Bank, 1818 H. St., N.W., Washington, D.C. 20433.

This paper addresses the need to incorporate wildlands management into preservation of biological diversity and production of environmental services (i.e., energy, agriculture, health, transport, and tourism). It describes various development activities that receive benefit from wildlands management, use of economic analysis (e.g., mitigation of conversion effects), and enhancement of total project benefits from wildlands management. Several appendices are included: World Bank wildlands management (WMA) projects, criteria and identification of WMAs (i.e., siting, size, and shape), WMA categories and management activities, international agreements of WMAs, a list of world heritage sites and Man and the Biosphere program, and a list of organizations concerned with wildlands management.

Leisher, Craig and Stephen Soltis. 1991. Ecotourism: The Greening of Global Travel. Washington Flyer Magazine.

This paper discusses the rise in popularity of nature tourism and its application to conservation. It also presents different organizations on Capitol Hill that are incorporating nature tourism into future planning. It describes travel agent involvement, makes recommendations on what travelers should investigate before signing on with self-proclaimed "green" travel agents, and lists books on the subject.

Leonard, H. Jeffrey. 1987. Natural Resources and Economic Development in Central America: A Regional Environmental Profile. Executive summary. International Institute for Environment and Development. Transaction Books, New Brunswick, USA.

This paper discusses the "crises" status and socioeconomic trends of Central American resources, focusing on environmental degradation (i.e., deforestation, land degradation, destruction of coastal resources, pesticides, and environmental pollution) and regional and international considerations of environmental management. It concludes that economic growth and equitable distribution will be a top priority for Central America in the coming decades but maintains that growth must be focused on diversifying the commercial agriculture base and increasing productivity with emphasis on domestic foodstuffs. It emphasizes that plans must be accompanied by new programs to maintain, protect, and rehabilitate the region's natural resource base. The paper stresses the necessity of offering economic alternatives to reduce pressure from expanding populations and recommends plans for conservation-oriented development, including agriculture and regional-level environmental management.

Leonard H. Jeffrey. 1987. Natural Resources and Economic Development in Central America. Chapter Three: Patterns of Land Use and Natural Resource Exploitation - International Institute for Environment and Development. Transaction Books, New Brunswick, USA.

This paper discusses labor economics, agricultural development, crop agriculture, livestock, forestry, fisheries, and overall land use. It predicts that economic conditions in Central America will necessitate dependence on production from basic natural resources, shows the economic conditions of peoples dependent on natural resources, documents the over exploitation of these resources, and demonstrates that this basic contradiction will be the challenge of the coming decades. It also indicates that current conditions in Central America signify that external economic circumstances will force land use change. The consequent opportunities for governments and landholders to reevaluate competing potential land uses will be significant, with far-reaching future implications.

Lillywhite, Malcolm. 1991. Low Impact Tourism. Sustaining Indigenous Natural Resource Management and Diversifying Economic Development. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., Englewood, Colorado 80111.

This paper defines low-impact tourism as supply driven tourism concerned with the social impact, economic development, and natural resource management of the destination site. Ecotourism is differentiated from low-impact tourism by being demand driven. The paper outlines the goals, characteristics, and benefits of low-impact tourism. A low-impact tourism plan is discussed and a model describes projected revenue distribution, including the concept of village equity.

Lindberg, Kreg. 1991. Policies for Maximizing Nature Tourism's Ecological and Economic Benefits. World Resource Institute. 1709 New York Ave, N.W., Washington, D.C. 20006.

This paper provides a definition of nature tourism and discusses the economic contribution of ecotourism to overall revenue in developing countries. Maintenance and increase in revenue are discussed in the context of open access to natural attractions, use of levies, indirect expenditures, control of leakage, decentralization and public-private partnership, and sustainability of development, education, and planning. Worldwide problems in nature tourism and resulting dilemmas are addressed such as over exploitation, the quasi-monopolistic approach, and lack of monetary reciprocity to parks and communities for benefits received. The latter point is addressed as a principle of scarcity, asserting that "suppliers" of tourism attractions are giving products away, and that benefits from tourism must be channeled back into the park and surrounding communities. The paper points out that capturing nature tourism's potential will also "level the economic playing field" on which decisions between ecotourism and other development options are made.

Lubeck, Laurie. 1989. Wildlife Tourism Impact Project (WTIP). 524 San Anselmo Avenue, Suite 103, San Anselmo, California 94960.

This paper presents a survey of safari tourism companies in the U.S. It provides operational tools for the travel industry to incorporate into business practices including education of clients regarding positive and negative impacts of tourism, and the importance of contributing financially to conservation or cultural projects at the tourist destination. It discusses issues leading to current concerns and problems (i.e., poaching, souvenir trade, lack of economic benefits to local communities) and solutions such as financial profits funneled towards preserves from tourist operators/businesses, raising park fees, distributing travelers codes of ethics, enforcement of regulations, monitoring wildlife, establishment of tourist fees targeted for the park(s), increasing communications between agents/operators, and establishing a true "green" directory of the tourism industry. The paper describes the philosophy of WTIP and methodologies for creating environmentally responsible safari tourism and finishes with a list of innovative actions which can be pursued for environmentally responsible tourism.

Miller, Kenton R. 1978. Planning National Parks for Ecodevelopment: Cases and Methods from Latin America. Volume I and II. Center for Strategic Wildland Management Studies, The School of Natural Resources, University of Michigan, Ann Arbor, Michigan 48109.

This voluminous work covers many topics on wildland management with a wide variety of chapters. The first two in Volume I cover the conceptual framework for management of wildland resources and growth and development of national parks in Latin America (including appendices on historical landmark legislation). The third section delves into planning national parks for ecodevelopment in Latin America with subsections on steps and conditions for planning, methods of transforming conservation objectives into action, philosophies and methods of gathering field information, resolving conflicts for park use, establishing boundary lines, designing management programs, analyzing and evaluating proposals for alternatives, and establishing priorities for implementation. Volume I finishes with a chapter on the evolution of national park planning in Latin America with information on workshops and manuals. Chapters in Volume II are practical in focus with topics on applied methods; a checklist of steps, strategies and three fundamental concepts for park planning methods; formulation of strategy plans; human and institutional capacity to manage national parks with information on personnel required, training and organization behind preparing a National Park department for management; guidelines from park management experience in Africa; ten major problems facing national park management in Latin America; international cooperation and assistance in national park management; and a strategy for regional and global cooperation.

Miller, Marc L. and Jan Auyong (eds.). 1991. Proceedings of the 1990 Congress on Coastal and Marine Tourism. Volumes I and II. (25-31 May 1990, Honolulu, Hawaii, U.S.A.). National Coastal Resources Research and Development Institute, Newport, Oregon. 561 pp.

This Congress was convened in response to the growing need to bridge economic development and conservation of coastal zone resources. Congress presentations emphasize strategies, applications, and results by which to create and implement policy and management related to coastal and marine tourism. Volume I includes categories of papers on conservation, recreation and tourism in marine settings; successful tourism development; perspectives on managing Hamauma Bay (Hawaii); use, abuse and overuse - lessons learned; parks and protected area systems; sea level rise and global climate change; and natural resources and coastal and marine tourism. In Volume II the categories of papers are likewise diverse: sustainable use of nature for coastal and marine tourism; myths and truths about water quality - impacts and management; environmental planning and monitoring for tourism; recreational fisheries; perspectives on tourism; enhancing visitor experience; analytical tools for successful tourism; community involvement in tourism development; development alternatives; and finally a poster session and workshop summaries.

Miller, M.L. 1990. Tourism in the Coastal Zone: Portents, Problems, and Possibilities. Proceedings of the 1990 Congress on Coastal and Marine Tourism. Vol. I pg. 1-8. National Coastal Resources Research and Development Inst., Newport, Oregon.

Miller provides a collection of data on the Caribbean and other coastal zone tourism development. He indicates that generally tourism development has been unmanaged despite the fact that it has enormous economic influence around the world. He compiles figures from world reports are presented indicating that one out of every 16 jobs is tourism related and accounts for 5.7 percent or $515.6 billion in payrolls worldwide. The $403.6 millon international tourist arrivals reported for 1988 are more than double those in 1974. In 1988, 10.3 millon tourist arrivals comprise a 6.7 percent increase over 1987, which was 13.8 percent greater than the year before.

Mitchell, B.A. and J.R. Barborak. 1990. A New System of Marine Parks and Protected Areas in the Turks and Caicos Islands, BWI. Vol. I. pg. 225-235. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst. Newport, Oregon.

The newly developed national parks system in the Turks and Caicos Islands is presented as a case study in this paper. The paper points out that properly planned parks can enhance tourism while protecting special areas. The authors call for management with development that includes public and private sector involvement. Park staff must be trained in environmental science, education, and enforcement. Recommended is the development

of a national trust that would oversee protection of the parks. Such an entity allows for greater flexibility that draws from various nongovernmental, private, and governmental agencies. Recommendations for the development of protection of biodiversity and promotion of tourism include consulting and reviewing available literature, developing management plans with local community leader input, keeping planning in perspective with long-term goals, encouraging public and interagency cooperation and participation, placing a high priority on education, allowing sustainable uses of natural resources, using local manpower and resources, attracting appropriate assistance, building local support, and persevering.

Moore, Allen W. 1991. Planning for Ecotourism in Protected Areas. 2nd International Symposium, Ecotourism and Resource Conservation, Vol 2, pg. 563-574. Ecotourism and Conservation Project, Berne, New York.

Many tourism countries call themselves ecotourism providers when they are not. The major problem in protected areas is the need for management. Many areas are now managed as islands with no regional or national goals. Ecotourism can contribute significantly to local economies and management and protection of parks. There is a national need for policy on ecotourism. It is a new term but is an old activity which is often ignored. Economic pressures are growing. Galapagos Island provides $1 million to the management of the Ecuadoran park management. The private sector, local interests, experts, and government must be involved in management and planning. Protected areas should be zoned for various uses including intensity and type of use, ecological and physical impacts, and social and economic issues. Carrying capacities as they are now designed actually do little to provide data for actual situations. There must be methods of monitoring and handling local conditions and setting limits of acceptable change. Education of tourists and locals is a major failure and is looked at as a drain on profits.

Mudge, Susanna. 1989. Recommendations of the USAID/FEPROTUR Nature Tourism Working Group - Draft Report. Ernst and Young, 3000 K Street NW, Washington, D.C. 20007.

A working group of professionals including representatives from adventure tourism operators, scientific research institutions, universities, and NGOs were gathered 1) to develop strategies and priorities to promote scientific and educational tourism and research, and 2) to improve nature tourism opportunities and experiences in Ecuador. Individual working groups were established for the following geographical locations: the Cuyabeno Faunistic Reserve, Guayaquil and the coastal area, the Oriente, Jatun Sacha (research station), and Pasochoa (protected forest). Specific recommendations are made in the report for FEPROTUR (Ecuadorian Foundation for Tourism Promotion) regarding sponsorship and supportive roles versus implementor roles. The report concludes with general recommendations and criteria for the selection of project sites for USAID Ecuador and for the development and promotion of nature-based tourism and scientific research in Ecuador. Conclusions highlight the necessity of promoting mainland nature tourism, wildland protection and management, the role of tourism and scientific research within conservation, infrastructure development, promotion of inter-institutional cooperation, and marketing and promotion.

Mundo Maya Project - Executive Summary. 1989.

A program synthesis is presented in this executive summary including resources and geographical locations of Mundo Maya projects, followed by a discussion of tourism demand and the tourism sector. Objectives, programs in action, the organization, and funding are described along with methodologies and activities in Phase I.

Munoz, Oswaldo. 1991. Environmentalism and Ecotourism. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

This paper outlines concerns to which ecotourism projects must be sensitive, including possible impacts on natural resources, proper buffer zone planning, culture impacts to local people, involvement of local populations in planning, and equitable distribution revenues. Suggestions are included that would contribute to better ecotourism projects.

Nations, James D., et al. 1988. Biodiversity in Guatemala. Center for International Development and Environment, World Resources Institute, Washington D.C.

This publication thoroughly describes the biodiversity of Guatemala, including its problems with conservation, and recommends sustainable development and other methods of protection.

Oceanic Society Expeditions. 1989. Code of Adventure Travel Ethics (from the Ecumenical Coalition on Third World Tourism's Code of Ethics for Tourists). Fort Mason Center, Bldg. E., San Francisco, California 94123.

Eleven ethical principles for tourists traveling in Third World countries are presented with cultural sensitivity being the focal point, emphasizing an attitude of humility, listening, observing, and learning about local customs and beliefs.

Office of Forestry and Wildlife. 1990. Forestry Guidelines. Regulations of Forestry Quality. Direccion General de Bosques y Vide Silvestre, 7a Avenida 6-80, Zona 13, Guatemala, C.A.

This is a governmental document describing objectives and perspectives on general forestry guidelines, granting of permits, protection of forests and soils, development and management of forests, forestry practices, and reforestation. It presents options and fiscal incentives for small proprietors, as well as controls and regulations.

Postel, Sandra. 1990. Toward a New "Eco"-nomics. World Watch Institute, Washington, D.C. Vol. 3, No. 5.

This enterprising article discusses the separation between the environment and economy in our conventional economic structures and institutions. It asserts that reconciliation of economic rules and practices with dictates of environmental sustainability are essential for human survival. The fallacy that the GNP depicts improvement in human welfare is discussed, pointing out that deductions in the GNP are not made for environmental depreciation as is the case with capital depreciations. Therefore, an inflated value of income and wealth often occurs, creating the illusion that a country can sustain higher levels of consumption than possible. Examples of over-consumption in developing countries that are based on natural resource development are given, illustrating that a country may be headed toward ecological bankruptcy and still register GNP growth. Other economic principles and investment rules are discussed including discounting (denominating all investment choices in fiscal terms) and interchangeable natural and human-made capital. The article demonstrates that these economic principles ignore irreplaceable natural systems and the ecological functions they provide. The result is small measurable private gain that can lead to large unquantified social loss, while economic rules detect nothing wrong. In addition, the author illustrates that economic models guiding development processes are silent on questions of distributive justice and equity. Consequently, several billion people worldwide whose livelihood is dependent on abundance and quality of natural resources remain untouched by economic growth. The author proposes several solutions to this economic and environmental separation such as recalculating the GNP by deducting depletion of natural resources, revision of the United Nation's system of national accounts, supplementing the GNP with other indicators that monitor human welfare, reshaping investment criteria to conform with principles of environmental sustainability, and conducting thorough cost-benefit analysis of tropical development projects to demonstrate that certain practices such as clearcutting do not necessarily produce the highest yields. Final recommendations are no net loss of natural capital from development projects and implementation of a "green tax" to force private development to account for environmental costs, thereby making environmentally damaging practices economically unattractive.

RARE - Center for Tropical Bird Conservation. 1991. Program to Train Latin American Guides for Ecotourism. 1529 Walnut St., 3rd floor. Philadelphia, PA 19102.

The fact that extracting full economic benefits from ecotourism is dependent on infrastructure that is poorly developed prompted the RARE center to begin a model program to train Latin American guides for ecotourism. The training program emphasizes learning English, followed by acquiring a strong working knowledge of tropical natural history, delivering effective presentations, cultivating an understanding of the ecotourism industry and the needs of tourists, and providing mechanisms to prevent deleterious impacts from tourism. Guides are also

trained in techniques for developing outreach and environmental education programs in their local communities. Principles of management and development are incorporated into the curriculum.

Richter, K.L. 1990. The Politics of Tourism: Implications for Coastal Marine Tourism. Vol. I, pg. 40-45. Proceedings of the 1990 Congress on Coastal And Marine Tourism. National Coastal Resources and Develop. Instit. Newport, Oregon.

Richter points out that there are a lot of tourism statistics but that the methods used and validity are often suspect. In part, this may be due to the fact that so much effort and money is used to promote tourism that there is no effort to provide good statistics. Tourism is a weathervane of political relations between nations and grows with good relations. Many countries are working jointly to make tourism interchange easier. They need to work cooperatively to measure and control impacts. Political pressures are causing problems with areas like the Galapagos Islands and numbers are allowed to increase beyond capacity. If one country tightens environmental regulations on tourism, other countries who do not may benefit. Belize is an example where money is spent on tourism marketing but not on the country's infrastructure. Few benchmarks are set by politicians to measure the economic benefits compared to the real costs of tourism.

Robinson, John G. and Kent H. Redford (editors). 1991. Neotropical Wildlife Use and Conservation. University of Chicago Press, Chicago, IL. 520 p.

This volume of 28 papers discusses economic development and use of wildlife in the neotropics. Most of the topics involve ranching and farming of various forms of wildlife. Several papers discuss hunting, fishing, and ecotourism as sustainable uses of wildlife. The work is extremely important for those involved in wildlife protection in the neotropics since the work provides an excellent summary of the information, infrastructure, and problems involved in developing sustainable development using wildlife resources.

Rosote, Raul M., R. Smardon, and S. Moan. 1991. Developing Principles of Natural and Human Ecological Caring Capacity, and Natural Disaster Risk Vulnerability for Application to Ecotourism Development in the Yucatan Peninsula. First International Symposium, Ecotourism and Resource Conservation, Vol 2, pg. 740-772. Ecotourism and Conservation Project, Berne, New York.

Ecotourism should contribute to maintaining ecological processes critical to the economic well-being of local economies, support protected areas, and protect endangered and threatened species and indigenous cultures. Ecotourism projects should be evaluated based on their effects on the ecology, sensitive species, and social and economic benefits to local communities. Most literature on tourism impacts and carrying capacity has little relevance to tropical environments. There are a number of recommendations on how local communities can work with the tourism industry by developing cooperative goals which encourage enjoyment and education, produce income, and give the community say in the development. The paper provides detailed lists of considerations which should be considered during the planning, evaluation, and implementation of ecotourism.

Rovinski, Yanina. 1991. Private Reserves, Parks, and Ecotourism in Costa Rica. Nature Tourism, Tensie Whelan (ed.) Island Press, Washington, D.C., pgs. 39-57.

This paper reviews the development of the Monteverde Cloud Forest Reserve, associated tourism, and its effects on the community. Monteverde is the earliest and best example of ecotourism in Costa Rica. Also discussed is the role of private enterprise, primarily operators and investors, in providing the infrastructure for tourism in areas around protected lands. Principal agents in promoting Costa Rican ecotourism were the biological field stations operated by the Organization for Tropical Studies. This consortium of educational institutions has three research sites, including La Selva Biological Station near Puerto Viejo. The popular and scientific publications generated by the large number of students visiting these areas has helped attract ecotourists to Costa Rica. The rapid growth in ecotourism had led to a need to regulate the industry. The current situation is that little control exists due to fragmentation of responsibility by various ministries within the government. Efforts are underway to address these needs through the formation of a cooperative board on ecotourism.

Ryel, Richard. 1991. Ecotourism: An Economic Alternative for Natural Resource Destruction. Second International Symposium, Ecotourism and Resource Conservation, Vol 1, pg. 31-44. Ecotourism and Conservation Project, Berne, New York.

This paper defines ecotourism from an outbound operator's point of view. An economic resource ecotourism pyramid is presented and the author points out some of the economic realities of the tourism industry. Through an example, the article demonstrates how tourism can work to place a value on wildlife and habitats and how this value can provide economic support for local communities. Inbound and outbound operators and the ecotourist are defined.

Rymer, Todd M. 1991. The Growth of the U.S. Ecotourism Market from 1980-1989 and its Future in the 1990's. M.S. thesis. Florida International University, Miami, Florida.

This study assesses the growth of the U.S. ecotourism market in the 1980s and estimates this growth for the 1990's relative to the total U.S. tourism market. The author discusses problems of ecotourism growth and lack of monitoring in the U.S., presents a review of related literature, and defines the population of the U.S. ecotourism market. A review of environmental impacts from tourism is presented delineating difficulties in environmental impact statements and methodologies for studying impacts of outdoor recreation. Inherent principles of ecological studies of recreation impacts are discussed along with solutions to specific environmental impacts. Future trends of growth in ecotourism and its industry are presented. The author makes several recommendations on control and monitoring of ecotourism at the industry and park levels, on education, and on interpretation. The appendices include a cover letter and sample response form from interviews of ecotourism operators and a case study from Everglades National Park demonstrating monitoring and assessment of visitor environmental impacts.

Salazar, Mauricio, P. Palmer, W. Barthel, and J. Reed. 1991. Local Participation in Ecotourism Development, Talamanca, Costa Rica: Opportunities and Obstacles, 2nd International Symposium, Ecotourism and Resource Conservation, Vol. 1, Pg. 371-381. Berne, New York.

This article describes a case study on current and proposed development organized by the Asociacion Talamanquena de Ecoturismo y Conservacion. The people in the area were looking for methods to halt the destruction of indigenous rainforests. The objectives of the organization included promotion of responsible tourism, promotion of ethnic pride and authentic cultural expression, and facilitation of local management of ecotourism facilities and services. Promotion of tourism was directed to tourists who wish to learn about tropical ecology, meet local people, and learn about new cultures. ATEC has produced a bilingual brochure, beach cleanup campaigns, and tourism surveys, and has lobbied government for public sanitation facilities. ATEC relies on dues and donations from local and international resources.

Sherman, Paul B. and John A. Dixon. 1991. The Economics of Nature Tourism: Determining If It Pays. Nature Tourism, Tensie Whelan (ed.) Island Press, Washington, D.C., pgs. 89-131.

Economics will likely drive decision-making regarding use of natural areas. Two key questions are whether nature tourism will pay as a business venture and whether it will pay as a social investment. The paper discusses social welfare considerations in a cost-benefit analysis of nature tourism. It also discusses the potential of nature tourism for profitable local and national economic development. Examples of economic analyses of nature tourism are provided including the Caribbean, East African wildlife parks, Thailand, and the Philippines.

Stankey, G.H. 1990. Conservation, Recreation, and Tourism in Marine Settings; The Good, Bad, and the Ugly? Proceedings of the 1990 Congress on Coastal and Marine Tourism. Vol I. pg 11-17. Nat. Coastal Resources Research and Develop. Inst., Newport, Oregon.

Many researchers have accused tourism of destroying the environment and have advocated locking up natural areas. An alternative is creating a symbiotic relationship where tourism and the environment benefit from each other. Many tools used to evaluate and regulate human use such as carrying capacity are full of too many assumptions to be more than academic models. Stankey proposes the concept of "Limits of Acceptable Change"

(LAC) which includes natural infrastructural and social change brought on by various levels of tourism use. To create the LAC, he suggests procedures to follow including definition of issues, defining zones where certain conditions are set, identifying indicators, inventorying resources and social conditions, specifying standards for each opportunity class, identifying management actions, evaluating and selecting alternative actions, and finally, implementation and monitoring.

Tabata, Ray. 1991. A Case Study in Ecotourism Development and Resource Management. Proceedings of the 1991 World Congress on Adventure Travel and Ecotourism, The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

Scuba and snorkeling dive travel is a significant and important part of ecotourism in certain regions of the world. Divers are typically well-educated, young, and financially secure. In Hawaii, recreational diving is big business, reporting gross sales of $19.8 million in 1986 as reported by dive operators. A survey was conducted to help identify various factors which influence the selection of dive sites by Hawaiian dive operators. Important factors include outstanding marine life, good underwater visibility, and good underwater photography.

Thomas, P. 1990. Coastal and Marine Tourism: A Conservation Perspective. Vol. I. pg. 18-22. Proceedings of The 1990 Congress on Coastal and Marine Tourism. Nat. Coastal Resources Research and Devel. Inst. Newport, Oregon.

A select group of tourists are attracted by the marine and coastal environment. Development of infrastructure for tourism causes wildlife losses and degradation of the overall environment, sewage and dredging being major problems. Some problems occur in the post-development phase and are often related to numbers of tourists. Examples are overuse of coral reefs with physical damage due to divers, boat anchorages, and species loss from exploitation. Conservation and tourism must develop a symbiotic relationship. The industry is dependant on environmental quality for its existence. This will require regulations on development and how tourism is conducted.

Thorsell, J. and S. Wells. 1990. A Global Overview of Tourism Activities in Coastal and Marine Parks. Vol I, pg. 221-224. Proceedings of the 1990 Congress on Coastal and Marine Tourism. National Coastal Resources Research and Develop. Inst., Newport, Oregon.

In 1990, 90 countries had designated 1,001 marine parks. Activities in these parks cover nature-based tourism to recreation and sports activities. Mass tourism tends not to be directly involved with the resource base while nature-based tourism uses the parks for snorkeling, diving, and similar activities. Great Barrier Reef cost is estimated to be $117 million annually. Key Largo in Florida is the most heavily visited water park in the world with 1 million visitors and revenues of $1.6 billion. Pure nature tourism, like bird and whale watching, is being promoted to many marine protected areas. Often protected areas attract people due to the guarantee of habitat quality. This leads to over usage. Thirty-four of 135 Caribbean protected areas report damage directly from tourism. Tourism development has also caused indirect damage (such as over-fishing) to many others. Methods incorporating conservation and tourism should include integrated planning and protected areas should be expanded in size and number for tourism. All protected areas should have management plans for tourism and should determine the level of use while maintaining visitor satisfaction and with minimal environmental impact. Environmental impact assessments must be required for all tourism development, educational facilities should be provided, and construction and operations should be monitored, and we should continue to add to the World Heritage List.

Tibbets, John. 1991. Coastal Heritage. Vol. 6, No. 3. South Carolina Sea Grant Consortium. 287 Meeting St., Charleston, South Carolina 29401.

This is a local newsletter covering various tourism topics: preparing for the increase in tourism; including solutions to over-expansion; saving South Carolina's special places; building local culture; coastal attractions drawing nature-based tourism; residents profiting from tourism, including taxes, training, and local ownership/management; and specialist workshops on finance and management.

Urena, Gerardo, Marco Antonio Marin Gonzalez, and Mirna Torres Rivas. 1991. Investigation and Analysis of the Causes and Effects of Deforestation in Costa Rica and Negative Consequences of Tourism. Interamerican Institute of Technology. Costa Rica.

Objectives and methods of this study are outlined in this paper followed by causes of deforestation in Costa Rica. These include expansion of cattle raising, agriculture, selective harvest for timber, inadequate laws and enforcement, traditional forestry, and construction of roads without planning. An analysis of the effects of deforestation includes extinction of flora and fauna, soil erosion and river sedimentation, tree importation, loss of gene banks, and change in climate. Governmental responses are explored focusing on reforestation and integration of "political ecology." The negative consequences of deforestation on tourism activity are portrayed with several conclusions and recommendations for sustainable development.

USAID. 1990. Environmental and Natural Resource Management in Central America: A Strategy for A.I.D. assistance. ROCAP, USAID.

This study points out the loss of future economic potential due to the selling of natural resources at lower than world market values. The report also outlines political and institutional problems involved in planning and changing current policies. Major constraints in changing natural resource programs are current policies, institutions, cultural and social history, and lack of technology.

U.S. Congress, Office of Technology Assessment. 1987. Aid to Developing Countries: the Technology/Ecology Fit. U.S. Government Printing Office, Washington, D.C.

In the introduction, this document discusses the ecological underpinnings of development assistance. Following is an explanation of problems and solutions, including factors leading to selection of ecologically inappropriate technologies, conditions internal to development assistance, organizations that perpetuate inappropriate technology choice, and holistic as well as piecemeal approaches to mechanisms of change. A diverse array of subsections within these categories are discussed. Following is a list of these topics: improvements to project planning and flexibility, hiring appropriate personnel in adequate numbers, use of in-house expertise, increasing personnel motivation and accountability, improving selection of consultants, relieving pressure to transfer funds, streamlining ecological technology for specific priorities, encouraging research with cautious innovation, restructuring technical resources, and strengthening selection of technological expertise. Appendices include recommendations for improved resource and environmental management in the Third World, a listing of necessary conditions for successful transfer of technology, a summary of A.I.D.'s environmental strategies, and procedures to incorporate environmental considerations in development assistance.

U.S. Congress, Office of Technology Assessment. 1985. Integrated Renewable Resource Management for U.S. Insular Areas. U.S. Government Printing Office, Washington, D.C.

This paper covers geography, renewable resource history, and integrated resource systems of insular areas that are affiliated with the United States. It discusses opportunities and constraints to sustainable development and delineates many strategies and development goals for agriculture, agroforestry, and forestry, including protection and support for nonmarket agriculture; developing smallholder agriculture, subsistence, and small scale fisheries; intensive commercial farming and aquaculture; commercial forestry; and research programs relative to island needs. It integrates technologies which support sustainable resource development such as preharvest control, food preservation and processing, markets, cooperatives, soil conservation, fisheries regulation, park establishment, traditional management, and promotion of resource recovery such as energy-integrated farms and waste treatment. Recommendations are made for the U.S. government's role in planning, policy, and information management, as well as the government's role in international research, education, extension, and training.

U.S. Congress, Office of Technology Assessment. 1983. Sustaining Tropical Forest Resources, Background Paper No. 2. U.S. Government Printing Office, Washington, D.C.

This paper explores the roles of national, regional, and international institutions as well as the private sector in developing and implementing technologies to sustain tropical forests. The paper explains mechanisms by which

the U.S. and international institutions affect development and implementation of technologies to sustain tropical forest resources. It reviews capabilities of several world institutions including developed and developing countries, funding foundations, and private sector organizations. The paper also discusses constraints and opportunities faced by these institutions including lack of communication, funds, adequate technologies, knowledge, and political, cultural, and institutional constraints.

U.S. Congress, Office of Technology Assessment. 1987. Technologies to Maintain Biological Diversity, OTA-F-330. U.S. Government Printing Office, Washington, D.C.

This paper discusses the status and options of the U.S. Congress in maintaining biological diversity on national and international levels. It addresses the importance of biological diversity to ecological processes, research, cultural heritage, recreation and tourism, agriculture, and harvested resources. It also examines the causes of diversity loss, followed by an explanation of management systems that conserve diversity. Technologies to maintain biological, animal, plant, and microbial diversity are discussed in the national and international arenas, including design, planning, maintenance, management, and development assistance.

Valencia, Isabel, and Phillip Young. 1990. Environmental Profile of Honduras 1989, Summary. USAID.

One of a series of USAID environmental profiles of Central American countries, this publication provides information on the current status of natural resource conservation in Honduras.

Vickerman, Sara. 1989. Watchable Wildlife: A New Initiative. Defenders of Wildlife. 46 pp. 434 S.W. Iowa, Portland, Oregon 97201.

This paper reviews specific examples of existing watchable wildlife programs, makes recommendations on implementing a program (e.g., establishing viewing networks), and includes several appendices with names of contacts. It discusses the need for specific policies (i.e., goals, objectives, conflicting land use strategies, enforcement, entrance fees), agency guidelines for designation and management of viewing areas, and incorporation of wildlife viewing into land use planning systems on regional and national levels.

Weaver, Glenn (Project Director). 1991. Tourism USA, Guidelines for Tourism Development: Appraising Tourism Potential, Planning for Tourism, Assessing Product and Market, Marketing Tourism, Visitor Services, Sources of Assistance. University of Missouri-Columbia, Department of Parks, Recreation and Tourism. 233p. Available through Tourism USA, Department of Commerce, H1862, Washington, D.C. 20230 ($5.00).

This publication is a practical guide for tourism planners, protected area personnel, and local communities. It provides step by step instruction on evaluating, planning, and establishing programs. Forms are provided for planning and management exercises. This publication should be a part of every training program on sustainable tourism development.

Weiner, Eric. 1991. Ecotourism: Can it Protect the Planet? The New York Times. New York, New York.

This article reports the growth of "green" tourism and its potential to contribute to conservation of biological resources, particularly through the increase in foreign revenue. It also discusses potential conservation strategies such as increasing gate fees and limiting numbers of tourists allowed in parks. It examines policies of ecotour groups and describes their conservation activities, such as discouraging large-scale environmentally destructive development projects, dispersing environmental education material, and developing codes of ethics. It also portrays problems wrought by ecotourism such as environmental pollution, impacts to wildlife species, and exploitation of local communities. The article also presents a "sampling of tours," describing the nature of individual tours, costs, and the leaders/staff conducting the tours.

Wells, Michael and K. Brandon, 1992. People and Parks, Linking Protected Area Management with Local Communities. The World Bank, World Wildlife Fund, USAID, Washington, D.C. 99 pp.

This report lays out the "Integrated Conservation-development Project" concept. It provides the framework for protected area management plans which expand management to include the needs of local populations. The work provides 23 case studies related to protected area management, buffer zone development, and local and social economic development. This work provides valuable information on redeveloping protected area management programs.

Whelan, Tensie. 1991. Ecotourism and its Role in Sustainable Development. Nature Tourism, Tensie Whelan (ed.) Island Press, Washington, D.C., pgs. 3-22.

Ecotourism, when done well, can provide employment and income to local communities and needed foreign exchange to national governments and can educate travelers while protecting the resource base. When done poorly, it can destroy both the local community and the natural resources. This paper discusses some case studies as well as provides recommendations for properly planned ecotourism projects. It also discusses problems of local participation, generation of funds to manage protected areas, considerations of carrying capacities, differing management goals by various involved agencies, and proper education of the ecotourist.

Williams, Wayne T. 1992. Trip Report-Ecotourism and Buffer Zone Management at Monte Verde Reserve, Costa Rica. USAID ROCAP, Guatemala.

This report provides an excellent case study of the local impacts of rapid nature-based tourism development. It points out the need for stakeholder communications and cooperation. It also points out that the reserve contributes to the $6 millon annual national income from nature-based tourism and supports 3,000 local residents. It brings out the importance of detailed natural history studies on species important to tourism, such as the Powell's studies on the Quetzal.

Winterbottom, Bert. 1991. Urban Models Worldwide. Proceedings of the 1991 World Congress on Adventure Travel and Eco-tourism. The Adventure Travel Society, Inc., 6551 S. Revere Parkway, Suite 160, Englewood, Colorado 80111.

This paper defines tourism, ecotourism, and adventure tourism. Documentation is provided on the growing importance of worldwide tourism as well as the increased visitation of foreign visitors to U.S. cities. Trends in tourism include travelers seeking "back to nature" experiences. Outdoor recreation is becoming a more important part of tourism, and adventure and ecotourism travel will experience continual growth. A description of successful tourism development is outlined.

World Bank. 1983. World Tables - Vol. II Social data. 1818 H St., N.W., Washington, D.C. 20433.

The paper provides information worldwide on population, demographic characteristics, health, nutrition, education, employment, income, and consumption. It compares social data from developing countries by income group and geographic region.

Youth, Howard. 1990. Ecotourism: Loving Nature to Death? World Watch. Vol. 3, No. 5.

This paper depicts problems from tourism such as environmental destruction and social injustice caused from lack of using local people as guides in the Galapagos Islands. In contrast, the article presents figures from growth in nature tourism and foreign revenue provisions to developing countries. It discusses the necessity of conservation zoning in tourism areas, similar to the biosphere reserve concept, and focuses on the importance of planning and management.

Ziffer, Karen. 1989. Ecotourism: The Uneasy Alliance. Conservation International. 1015 18th St. N.W., Washington, D.C. 20036.

This paper provides a definition of ecotourism and outlines natural and potential markets. The article discusses the marketplace focusing on market size and growth, customers, industry structure, suppliers, and economic variables that affect the impact of tourism on a destination. It outlines key success factors of an ecotourism program: an integrated approach soliciting input from all key players; economic and land management planning with provisions that the ecotourism project begin slowly; education and training for customers, tour operators, and the local community; maximizing local benefits; and evaluation and feedback. Finally, the author recommends a three-pronged approach to make nature tourism a more constructive force for less developed countries and an environmentally sound development program: consumer education and awareness, tour operator cooperation and industry organization, and host country ecotourism planning and development.

APPENDIX B

Personal Communication

APPENDIX B

PERSONAL COMMUNICATION

The authors wish to thank the following individuals for their time and assistance in providing advice, information, support, and review*. Dr. Hugh Putnam, Kirk Stage, E. Lynn Mosura, Dr. William Zegel, Jill Oglesby, Lorna Solis, and the support staff at Water and Air Research. We also wish to extend a special thanks to Leslie Haysmith, who worked hard on an earlier draft and part of the bibliography, and Henrique Pinto de Costa for giving insight into user needs. We would also like to thank Wildlife Conservation International for their help and patience.

The following have provided reviews and comments throughout this process:

Claudia Alderman
Environmental Consultant
1708 19th St. NW
Washington, DC 20009

Joann Andrews, Presidente
PRONATURA
Capitulo Yucatan
Calle 13 No. 203 A
Garcia Gineres
Merida, Yucatan Mexico 97070

William Aspinall, Director
Monteverde Cloud Forest Reserve
P.O. Box 8-3870
San Jose, Costa Rica

*Ana Baez, National Director
Paseo Pantera Ecotourism Program
P.O. Box 966-1000
San Jose, Costa Rica

*James Barborak, Technical Advisor
Paseo Pantera
Apartado 277
3000 Heredia
Costa Rica

Amos Bien, President
Rara Avis
Apartado 8105
San Jose, Costa Rica 1000

*Maria Antionetta de Bogran, Director
Honduras Institute of Tourism
Tegucigalpa, Honduras

*Elizabeth Boo
World Wildlife Fund
1250 24th St. NW
Washington, DC 20037

Tamara Budowski
Horizontes Nature Tours
P.O. Box 1780-1002
San Jose, Costa Rica

*Steve Cox, Executive Director
International Expeditions, Inc.
1 Environs Park
Helena, Alabama 35080

Allan Greenberg
Generente Desarrollo Organizacional
COHEP
Apodo. 37-4339
Tegucigalpa, Honduras

Charles T. Greenwood
Banco Interamericano de Desarrollo
Edificio Los Castanos, 50 Piso
Tegucigalpa, Honduras

Alberto Riona Gutierrez,
Executive Secretary
Mundo Maya
7A Ave 1-17
Centro Civilo
Guatemala, CA

*Leslie Jarvey
Mountain Travel/Sobek
6420 Fairmont Ave.
El Cerrito, CA 94530

Michael Kaye, President
Costa Rica Expeditions
Apartado 6941
San Jose, Costa Rica

Richard Leakey
Kenya Wildlife Service
P.O. Box 40241 Langata Road
Nairobi, Kenya Africa

*Kreg Lindberg
Ecotourism Society
1709 New York Avenue NW
Washington, DC 20006

Marilyn Lisowski
Dept. of Education
Eastern Illinois University
Charleston, IL 61920

*Suzanna Mudge
Ernst and Young
1010 North Glebe Road
Arlington, VA 22201

Oswaldo Munoz,
Comision de Ecoturismo
Fundacion Ecuatoriana de Promocion Turistica
Tamayo 935 y Foch
Quito Ecuador

David Parry, President
Academic Travel Abroad
3210 Grace Street
Washington, DC 20007

*Tatiana de Pierson
National Director, Paseo Pantera Ecotourism Project
Honduras Institute of Tourism
Tegucigalpa, Honduras

*Carlos Resch, President
CANATUR
Apartado 828-1000
San Jose, Costa Rica

*Richard Ryel, President
International Expeditions, Inc.
1 Environs Park.
Helena, Alabama 35080

Rafael Sagastume, President
STP Guatemala
2a Avendia 7-78 Zona 10
Guatemala, CA

*Sebastian Salazar
Director of Ecotourism Program
Universidad Latinoamericana
de Ciencia y Tecnologia
APBO 10235
San Jose 1000, Costa Rica

*Kalash Shankala,
Director, Project Tiger, Retired
c/o Tiger Trust
Suite 206, Rakesh Deep. 11
Commercial Complex
Gulmohar Enclave, New Delhi 110 049

Hans-Gerd Spelleken
Cambio CA
Apodo, Postal 2
Trujillo, Colon
Honduras, CA

*Alfredo Toriello, President
Izabal Adventure Tours
7 Avenida 14-44 Zona 9
Edificio La Galeria
Guatemala City, Guatemala 01009

E. Howard Wenzel
Apartado 465
Panama 9A
Panama, CA

Megan Epler Wood
Ecotourism Society
P.O. Box 755
North Bennington, VT 05257

Fallet Young, Sanctuary Manager
Community Baboon Sanctuary
Bermudian Landing
Belize District, Belize, CA

*John Yost
Mountain Travel/Sobek
6420 Fairmont Ave.
El Cerrito, CA 94530

*Karen Ziffer
Conservation International
1015 18th St. NW
Washington, DC 20036

APPENDIX C

The Organization of the
Paseo Pantera Ecotourism Project
and National Ecotourism Councils

APPENDIX C

THE ORGANIZATION OF THE PASEO PANTERA ECOTOURISM PROJECT AND NATIONAL ECOTOURISM COUNCILS

The following document includes the guidelines and framework which have been used by the Paseo Pantera Ecotourism Program staff in the development of three National Ecotourism Councils (NEC). As each NEC developed, deviations from the plan in varying degrees occurred in order to adapt to the conditions and desires of each group.

Each NEC has developed its own list of priorities in regards to the issues and the needs for each country and the stage in which ecotourism has been developed within the country. The lists of priorities are presented for Costa Rica, Honduras, and Guatemala.

In May of 1992, representatives from each country in Central America were invited to participate in an informal meeting to be held in Belize to discuss regional issues pertaining to tourism and conservation. Within a year of this meeting, a formal regional Paseo Pantera Ecotourism Program meeting will be held to discuss and work toward developing methods of resolving these issues.

STEPS IN DEVELOPING THE PASEO PANTERA ECOTOURISM PROGRAM (PPEP), NATIONAL ECOTOURISM COUNCILS

Purpose

The purpose of the National Ecotourism Councils (NEC) is to develop a forum to discuss and carry out the ecotourism goals of the Paseo Pantera Program within each country and throughout the region. The goals include:

1. Develop a strategy that will allow economic development of tourism in order to support wildlands conservation permanently.

2. Establish a regional plan to protect wildlands and natural resources from tourism development throughout Central America.

3. Develop plans for programs which will educationally promote conservation through tourism.

4. Establish methods of considering the problems of and developing solutions for tourism development in wildlands throughout Central America.

5. Promote equitable sustainable socioeconomic development based on these resources.

Procedures

1. Paseo Pantera Ecotourism Project National Representatives

The national representatives for three countries, Costa Rica, Guatemala, and Honduras will be selected and charged with development and administration of National Ecotourism Councils in each country.

2. Identification of key individuals and organizations to form a steering committee.

The PPEP director, under the technical advisement of key resource people in each country, will arrange meetings with representatives of the conservation community, government, tourism industry, and NGOs that represent local indigenous or rural communities and conservation organizations in

each country. The purpose of these meetings is to encourage these individuals and organizations to participate on the steering committee and the NECs, to explain PPEP goals, to exchange ideas and suggestions, to learn about their involvement in ecotourism.

3. Steering Committee Meeting

The national representative in each country will arrange a steering committee meeting. The committee will consist of individuals and organizations contacted by the PPEP director, and will develop the NEC and set the first meeting's agenda. The steering committee agenda will include:

a. Review of the NEC goals.
b. Identification of additional participants for the NEC.
c. Organizing individual and organizational efforts within the NEC.
d. Structure of the NEC (e.g., chairman of stakeholder groups and officers of the NEC).
e. Setting meeting date of NEC.

4. National Ecotourism Council (NEC) Formation and Meeting

The NEC will be formed according to the recommendations of the steering committee, using the Paseo Pantera goals and objectives as basic guidelines to direct the NEC's efforts. The goal is to establish an inclusive group which will develop, discuss, and work toward the issues related to tourism and wildlands conservation. The basic concept of developing stakeholder groups is to bring together individuals and organizations with similar interests and concerns so the issues can be viewed from their unique perspective (Table 1). The results of their deliberations are taken to the NEC where they are combined with those of the other stakeholder groups. The representatives then establish a program which will lead to some action by the NEC on the issue.

5. Regional NEC Meeting

A meeting of NEC representatives from all countries is tentatively planned at the Belize International Ecotourism Conference on May 2, 1992. To prepare for this and to carry out the goals of the Paseo Pantera project, each NEC should, as part of the agenda, consider regional tourism/conservation issues. Periodically, each council will receive a newsletter from the other NECs. As part of this communication, there will be an update on the international issues being addressed by each NEC. The goal will be to develop a list of issues and recommendations by each NEC to be discussed at the regional conference.

6. Fund-raising

As part of the agenda to be considered by the national representatives and the NECs, is the need for economic support of current and future functions of the committee's work. The national representative in each country should actively work toward obtaining in kind, pro bono, and economic support from any avenues which present themselves. This may include the development of grant proposals or working with the government to receive economic support from international sources. Any funding from sources outside AID support will be handled by the NECs and are not made directly to Water and Air Research or the Paseo Pantera Project.

Paseo Pantera Ecotourism Issues

Paseo Pantera project, along with SITCA meetings and the input from key individuals have the following issues to be considered by the NEC's. The priorities and manner that these issues are developed may vary in each country and as PPEP representatives begin structuring their plan issues may change. Therefore, this list will serve as a guideline for the development of important issues.

1. The economic support by tourism for wildlands conservation.

   A. Development of fee structures that will sustain protected areas.
   B. Development of impact fees and tax systems to support infrastructure development in the region or communities impacted by tourism development.
   C. Developing methods to channel user fees back into protected areas to support protection enforcement, infrastructure, and maintenance.

2. Develop resource based land use planning in wildlands.

   A. Encourage proper placement of all forms of economic development including all types of tourism.
   B. The protection of sensitive areas from improper development in the future by establishing buffer zone planning as well as internal planning of the parks for tourism use.
   C. Safeguard tourism development from other forms of economic development.
   D. Develop a Central America (regional) comprehensive land use planning system.

3. Develop methods that will allow government (national or local), individuals, NGOs and others to evaluate the environmental and social impacts of tourism and other economic development in wildlands.

   A. Create regulations that require developers and communities to adhere to land use plans.
   B. Implement regulations that require developers to provide reports on environmental, economic, and social impacts of their planned development and create a system within government that will be responsible for establishing the EIS system.
   C. Design systems that require infrastructure development plans of within protected areas to go through a public review process.

4. Develop guidelines that will give agencies the ability to develop parks, protect areas, and control privately owned wildlands.

   A. Develop regulations that allow public and private lands to be fully protected in their natural state.
   B. Consolidate protected area responsibilities into one agency.
   C. Develop legislation which will allow agencies to regulate visitation into protected areas based on carrying capacity and infrastructure development.
   D. Establish protected areas that are designed for public use as well as the maintenance of biodiversity.
   E. Create positions within park systems that deal with tourism and the concerns of citizens who reside peripherally to the protected areas.

5. Local community involvement in tourism development.

   A. Establish ethical guidelines for tourists dealing with local communities in wildland tourism development.
   B. Establish regulations that require tourism to provide community support (i.e., jobs, infrastructure payment, protection from inflation) based on the impact to that community.
   C. Create regulations that would require contractual arrangements between tourism developers and communities.
   D. Establish rules and regulations that protect the rights of tourism developers and wildlife from community encroachment into park areas.

6. The NEC must implement educational methods where industry, government, and communities can learn about wildlands tourism development.

   A. Establish methods to educate the tourism industry regarding wildlands protection.
   B. Establish guidelines for training operators and guides in each country. Review alternatives to establish a Central American training institution.
   C. Establish training systems to educate local communities in the environmental assessment process for tourism development.
   D. Establish a training system for NEC personnel which would address industry and individual tourist issues in the development of infrastructure and other significant environmental impact via current regulations.
   E. Establish a system where natural history information developed by the tourism industry can be used to enhance public education within the country and region.

7. Tourism Profitability. The NEC must focus on the need for development of successful tourism. Throughout the process of establishing regulations the NEC should balance industry needs with those of conservation and of human resources.

   A. Establish guidelines and educational information that demonstrates the natural and infrastructure needs for success to the industry government, NGOs.
   B. Establish guarantees for profitability through economic liabilities development.

APPENDIX D

National Profiles Status and Ecotourism Planning in Central America

96A

APPENDIX D

NATIONAL PROFILES STATUS AND ECOTOURISM PLANNING IN CENTRAL AMERICA

BELIZE

Importance of Tourism

Current Level of Nature-Based Tourism: High
Current Level of Mass Tourism: Medium and Increasing
Overall Importance of Tourism in Economy: Second in foreign exchange earnings.
Trend: Decline in quality of nature tourism; growth continuing in nature-based and mass tourism.

Tourism Planning

Overall National Plans: Few current programs being funded by US AID.
Agencies: Minister of Natural Resources and Tourism, Belize Tourism Board, BTIA.
Land Use Planning, Environmental Impact Analysis Program, and Regulations: Some efforts; no national plan or standard enforcement.

Tourism and Protected Areas

Overall Protected Area Planning: Moderate; a number of programs underway.
Fee Structure: Entrance fees to some areas, bed tax is currently in place. Policy being reviewed to increase tourist fees are via airport taxes.
Protected Area Management: Currently being undertaken by the Belize Audubon Society

Strengths and Weaknesses

Strengths:

Organization of tourism industry and concern for good policies by Belize private sector, local communities, and conservation groups.

Some outstanding programs including Hol Chan Barrier Reef National Park Programme for Belize, and some archeological sites.

Strong international interest in Belize and strong tourism market.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected area tourism planning is poor. Many areas over-utilized.

No established system to produce infrastructure to support tourism and protect natural resources.

Lack of trained personnel in tourism and protected area personnel.

Lack of funding for, and infrastructure in protected areas.

EL SALVADOR

Importance of Tourism

Current Level of Nature-Based Tourism: Low
Current Level of Mass Tourism: Low, Except International Family Travel
Overall Importance of Tourism in Economy: Low
Trend: Regional tourism has increased considerably.

Tourism Planning

Overall National Plans: Increased governmental interest in nature-based tourism.
Agencies: Salvadorean Institute of Tourism, Fundacion Ecologica Salvadorena Activo.

Land Use Planning, Environmental Impact Analysis Program and Regulations: Some efforts, but no national plan or standard enforcement.

Tourism and Protected Areas

Overall Protected Area Planning: New efforts by Fundacion Ecologica Salvadorena.

Fee Structure: None; plans being developed

Protected Area Management: new project Promesa underway and funded by U.S. AID.

Strengths and Weaknesses

Strengths:

The development of the new Fundacion Ecologica.

Increased concern regarding the environment.

New program to develop plans to restore and protect natural areas.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected Area Tourism Planning: Poor, Many areas over-utilized by local tourists.

Establishing a system to produce required infrastructure to support tourism and protect natural resources.

Lack of training programs, trained personnel in the tourism industry, and protected area personnel.

Lack of funding and infrastructure in protected areas.

International Market: Not competitive with other countries in the region.

GUATEMALA

Importance of Tourism

Current Level of Nature-Based Tourism: Low to Medium
Current Level of Mass Tourism: Medium to Moderate.
Overall Importance of tourism in economy: Growing, second in foreign exchange earnings.

Trend: Growth continues in nature-based and mass tourism; new areas beginning to develop.

Tourism Planning

Overall National Plans: INGUAT has convinced all the actors in the tourism industry to define the criteria and set the parameters for the development and implementation of a sustainable tourism development plan.

Agencies: Instituto Guatemalteco de Turismo (INGUAT), Camara de Turismo de Guatemala, Consejo Nacional de Ecoturismo, Organizacion Mundo Maya, Secretaria de Planificacion Economica.

Land Use Planning, Environmental Impact Analysis Program, and Regulations: All development projects are required by law to present an impact analysis study to INGUAT. Isolated efforts are being made at different administration levels to develop tourism. Very weak regulations enforcement.

Tourism and Protected Areas

Overall Protected Area Planning: Low. Most efforts are being made in the Maya Biosphere Reserve only.

Fee Structure: Only one park with admission fee in the country (Tikal). Money goes to central government.

Protected Area Management: Different NGOs working in parallel in the Maya Biosphere Reserve without actual coordination.

Strengths and Weaknesses

Strengths:

Leading participation in regional programs like Mundo Maya.

Highest concentration of natural and cultural attractions in the region.

Common borders with four different countries which facilitate international tourism.

Weaknesses:

Bad international image due to political issues and alleged human rights violations.

Poor communications infrastructure at all levels in the country (roads, telephone, bus, air, etc.).

Nonexistent or very little information on the cultural and natural attractions.

HONDURAS

Importance of Tourism

Current Level of Nature-Based Tourism: Low
Current Level of Mass Tourism: Low to moderate.
Overall Importance of Tourism in Economy: Growing
Trend: Growth starts in nature-based and mass tourism; new areas are also beginning to develop.

Tourism Planning

Overall National Plans: Several programs underway

Agencies: Institute of Tourism, National Ecotourism Council

Land Use Planning, Environmental Impact Analysis Program, and Regulations: Some efforts; no national plan or standard enforcement.

Tourism and Protected Areas

Overall Protected Area Planning: Moderate; a number of programs underway.

Fee Structure: Entrance fees to some areas. Policy being studied to apply tourist fees.

Protected Area Management: Currently being revised

Strengths and Weaknesses

Strengths:

Organization of tourism industry and concern for good policies by private sector, local communities, and conservation groups.

Strong international interest in Honduras and opportunity to plan an adequate marketing strategy.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected Area Tourism Planning: Poor. Many areas presenting conflicts concerning actual and potential land use.

No system of producing required infrastructure to support tourism and protect natural resources.

Need for training programs and trained protected area personnel.

NICARAGUA

Importance of Tourism

Current Level of Nature-Based tourism: Low
Current Level of Mass Tourism: Low
Overall Importance of Tourism in Economy: Low
Trend: Interest in tourism development from international market growing rapidly.

Tourism Planning

Overall National Plans: None

Agencies: Minister of Tourism, Nicaraguan Institute for National Resources

Land Use Planning, Environmental Impact Analysis Program, and Regulations: None

Tourism and Protected Areas

Overall Protected Area Planning: Low. A number of programs underway.

Fee Structure: None.

Protected Area Management: Currently being revised; a number of programs are underway.

Strengths and Weaknesses

Strengths:

Strong interest by the Minister of Natural Resources in protected area management and the role of tourism as a revenue source.

Potential for world-class nature-based tourism.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected Area Tourism Planning: Poor. Many areas over-utilized.

No system of producing required infrastructure to support tourism and protect natural resources.

Need for training programs and trained protected area personnel.

COSTA RICA

Importance of Tourism

Current Level of Nature-Based Tourism: High
Current Level of Mass Tourism: Moderate; growing.
Overall Importance of Tourism in Economy: May be largest industry in the country.
Trend: Nature-based tourism is in jeopardy due to lack of proper the infrastructure and decline in experiences. Mass tourism is growing.

Tourism Planning

Overall National Plans: None (Note: A number of plans have been developed by various international development agencies and NGOs, none have been adopted.

Agencies: Minister of Tourism, Minister of Natural Resources and Mines, CANATUR.

Land Use Planning, Environmental Impact Analysis Program, and Regulations: Some statutes exist but are not enforced. The public has recently expressed concern about the need for stronger measures.

Tourism and Protected Areas

Overall Protected Area Planning: Some protected areas have excellent plans, others virtually none.

Fee Structure: Fee structure poor. Is under review.

Protected Area Management: Due to recent budget cuts, poor to moderate. Some are best in region.

Strengths and Weaknesses

Strengths:

Strong interest of the Minister of Natural Resources in protected area management and the role of tourism as a revenue source.

World-class nature-based tourism.

Number of sustainable tourism education programs.

Strong bank of baseline information on wildlands and natural history.

Strong private sector; Minister of Natural Resources interested in sustainable tourism development.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected Area Tourism Planning: Poor. Many areas over-utilized.

No system of producing required infrastructure to support tourism and protect natural resources.

Need for training programs and trained protected area personnel.

Turf battles between tourism ministry and other elements required for developing sustainable tourism. Uncoordinated efforts between conservation NGOs and international development agencies.

PANAMA

Importance of Tourism

Current Level of Nature-Based Tourism: Low
Current Level of Mass Tourism: Moderate; growing.
Overall Importance of Tourism in Economy: Low
Trend: Nature based tourism is in jeopardy due to loss of natural habitat. Mass tourism is growing without control or plans.

Tourism Planning

Overall National Plans: None

Agencies: Institute of Panamanian Tourism, Fundacion de Parques Nacionales y Medio Ambiente

Land Use Planning, Environmental Impact Analysis Program, and Regulations: Some statutes but they are rarely enforced.

Tourism and Protected Areas

Overall Protected Area Planning: Some protected area plans are being established.

Fee Structure: None

Protected Area Management: Poor

Strengths and Weaknesses

Strengths:

High potential for sustainable tourism development.

Weaknesses:

Poor national policy of land use planning, zoning, and evaluation of impacts of tourism development on natural resources.

Protected Area Tourism Planning: Poor. No system of producing required infrastructure to continue to support tourism and protect natural resources.

Need for training programs and trained protected area personnel.

APPENDIX E

Wildlife Desirability of Some Central American Species Relative to the Tourism Industry

APPENDIX E. Wildlife Desirability of Some Central American Species Relative to the Tourism Industry

Species	Marketing Value	Observation Satisfaction	Total Value
Mammals			
Water Possum	3	5	8
Lesser Anteater	5	7	12
Three-Toed Sloth	7	8	15
Two-Toed Sloth	7	8	15
Squirrel Monkey	8	8	16
Spider Monkey	8	8	16
Coyote	5	5	10
Ring-Tailed Cat	7	7	14
Kinkajou	6	7	13
Tayra	7	3	10
Otter	7	8	15
Jaguar	10	3	13
Puma	8	3	11
Margay	8	3	11
Tapir	9	4	13
Peccary (sp.)	7	6	13
Brocket Deer	7	5	12
Agouti	7	3	10
Paca	6	3	9
BIRDS			
Jabiru	8	8	16
Wood Stork	6	7	13
Ocellated Turkey	7	5	12
Spoonbill	8	7	15
Tiger Heron sp.	6	7	13
Boat-Billed Heron	8	8	16
Heron sp.	4	6	10
Limpkin	6	6	12
Jacana sp.	6	7	13

Species	Marketing Value	Observation Satisfaction	Total Value
Birds Continued.....			
Sunbittern	7	5	12
Sungrebe	7	5	12
Chachalaca sp.	6	6	12
Great Curassow	7	5	12
Crested Guan	8	5	13
Black Guan	8	4	12
Tinamou sp.	6	3	9
King Vulture	8	4	12
Great Black Hawk	6	4	10
Solitary Eagle	7	8	15
Black-Hawk Eagle	7	7	14
Kite sp.	6	7	13
Caracara sp.	6	6	12
Falcons sp.	7	7	14
Harpy Eagle	9	3	12
Pigeons sp.	4	5	9
Scarlet Macaw	8	7	15
Great Green Macaw	7	7	14
Parrots sp.	5	6	11
Parakeets sp.	4	5	9
Potoo sp.	4	5	9
Spectacled Owl	6	7	13
Pheasant Cuckoo	5	6	11
Hummingbirds sp.	7	6	13
Resplendent Quetzal	9	8	17
Trogons sp.	8	8	16
Jacamar	6	6	12
Kingfishers sp.	6	6	12
Motmot sp.	7	7	14
Lineated Woodpecker	5	6	11
Pale-Billed Woodpecker	5	6	11
Woodpecker sp.	4	5	9
Aracari sp.	6	7	13
Toucans sp.	8	8	16
Puffbirds sp.	5	6	11
Woodcreepers sp.	5	5	10

APPENDIX E. Wildlife Desirability of Some Central American Species Relative to the Tourism Industry

Species	Marketing Value	Observation Satisfaction	Total Value
Birds Continued.....			
Antbirds sp.	5	5	10
Manakins sp.	8	7	15
Cotingas sp.	5	6	11
Three-wattled Bellbird	7	7	14
Bare-Necked Umbrellabird	7	7	14
Kingbirds sp.	5	6	11
Flycatchers sp.	4	6	10
RoyalFlycatcher	7	5	12
Wrens sp.4	5	9	
Thrush sp.	4	5	9
Robins sp.	4	4	8
Jays sp.	5	5	10
Vireos sp.	4	4	8
Warblers sp.	5	4	9
Orioles sp.	7	7	14
Oropendolas sp.	8	8	16
Cacique sp.	7	7	14
Blackbirds sp.	3	5	8
Euphonia sp.	4	5	9
Tanangers sp.	5	6	11
Grosbeaks sp.	5	6	11
Finches sp.	5	6	11
REPTILES			
Crocodiles & Caimen	7	7	14
Sea Turtles sp.	9	9	18
Boa Constrictor	6	7	13
Bushmaster	4	7	11
Other Snakes	4	7	11
Freshwater Turtles	3	5	8
Green Iguana	6	7	13
Spiny-Tailed Iguana	6	7	13
Basilisk-Lizards	6	7	13
Casque-headed Lizards sp.	5	7	12

Species	Marketing Value	Observation Satisfaction	Total Value
Reptiles Continued.....			
Anolis sp.	4	6	10
Gecko sp.	4	5	9
Skinks	4	5	9
AMPHIBIANS			
Marine Toad	4	6	10
Other Bufonids	5	6	11
Rana	5	6	11
Other Frogs	4	5	9
Tree Frogs	5	6	11
Red-Eyed Tree Frog	7	7	14
INVERTEBRATES			
Butterflies	8	5	13
Beetles	6	5	11
Other Showy Insects	7	6	13
Spiders	4	6	10
Large Showy Invertebrates	5	6	11

LEGEND

Marketing Value:
Ability to draw tourists by us in marketing material.

Observation/Satisfaction:
A combination of viewing potential and the desire of tourists to see that species.

Total Value:
Combined marketing and satisfaction factors provide a relative disability factor for that species. The higher the value, the greater the importance of that species.

SOURCE: Ashton 1991.