

The Green Republic: A
Conservation History of Costa
Rica, 1838-1996

Part 2

by Sterling Evans

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A CONSERVATION HISTORY OF COSTA RICA,
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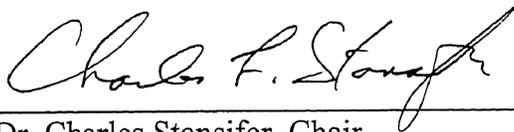
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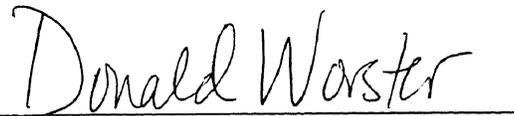
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Submitted to the Department of History
and the Faculty of the Graduate School
of the University of Kansas in partial
fulfillment of the requirements for the
degree of Doctor of Philosophy.

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7/24/97

Date Submitted

PART II:

BUILDING A
GREEN REPUBLIC

CHAPTER 8

ENVIRONMENTAL EDUCATION: FRAMEWORK FOR THE FUTURE

Environmental education has surfaced as an indispensable instrument to create conscience and to internalize our conduct, attitudes, and capacity to make decisions for the rational and creative management of nature's resources.

- Estrella Guier (1)

"Environmentalizing" the Public

History and its lessons are dynamic. To learn from past experiences and to plan for the changing needs of the environment, Costa Rica has implemented a strong educational program. Environmental education, according to Estrella Guier, who is a professor in the Environmental Education program at the National Open University, seeks to understand "the balance between the natural environment and that which was created by man." In Costa Rica, this has become an "innovative" process "oriented toward the solution of concrete problems . . . [and] serving as a link between social and natural sciences, which traditionally have been taught in a totally isolated form." Put another way, environmental activist/attorney Roxana Salazar writes that environmental education "is an essential element in all forms related to the environment and natural resources." Its overarching goal, she states, is "to forge a . . . conscience necessary for a true protection of the environment."²

While the independent, and often erudite, study and instruction of Costa Rican natural history and biosystematics can be

traced to the middle of the nineteenth century, environmental education is a relatively recent addition to the curricula of public schools and universities. Its legal foundation, however, goes back to the 1950's and 60's. The 1957 Fundamental Education Law (Law no. 2160) stated in Article 48 that the Ministry of Education had the obligation to ensure the instruction of methods to protect places of scenic beauty and to conserve and develop the historic and artistic patrimony of the nation. But the rather nebulous wording of the clause provided no specific examples of what was to be protected or how instruction could be integrated into the classroom.

Article II of the 1969 Forestry Law also mandated that the government be involved in the instruction process of natural resource use and protection. It required the Ministry of Agriculture to establish continuing education programs on the importance of forest resources, but again, spelled out no specific guidelines. Schools and universities have had to develop their own curricula for the instruction of the broader and more inter-related concepts of environmental education. Professor Guier referred to this as an "integrated approach" for the "environmentalization of the curriculum." She added that the idea was to conceptualize

environmental education as the integrating axis of other disciplines. . . . In other words, the environment should be considered with a holistic perspective where each variable should be considered within a total context, and forming a scheme of interactions. The fundamental characteristics of each environmental situation can be defined as

multi-, inter-, and transdisciplinary. (5)

A variety of programs has emerged in Costa Rica to address the need for an integrated approach to environmental education. The University of Costa Rica's School of Biology emphasizes applied ecology and instructs within many different biological disciplines. It maintains a tropical forest field station to allow students to gain hands-on experience with research projects. Its School of Agronomy deals with environmental issues in agriculture and sustainable development. Many of UCR's projects are in part funded by the National Council for Scientific and Technological Research (Consejo Nacional de Investigaciones Científicas y Tecnológicas, or CONICIT). The Legislative Assembly created CONICIT in 1972 as the grant supporting arm of the government. One of its important components is its Natural Resources Commission which has actively funded research on a variety of environmental and conservation projects.

The National University (UNA), located in Heredia, offers a more specifically integrated program through its much respected School of Environmental Sciences. According to one professor there, the school was established in response "to the urgency of educating the public which forced conservationists to discuss environmental themes and to give [them] dimensions of totality." With grant assistance from CONICIT, the school especially has been involved in researching forest and marine science issues. UNA has tried to fill an historic void in Costa Rican research on marine biology and maintains research stations in coastal areas.

The School of Environmental Sciences also offers degrees in wildlife management and is a leading institution for the identification, study, and protection of endangered species.⁷

In the mid-1980's UNA established a specific commission for studying and promoting environmental conservation. The "general objectives" for CORENAMA (the Commission on Natural Resources and the Environment) included "contributing in any positive way" to pro-environment campaigns and conservationist programs, contributing to research on national ecological issues, developing plans to increase environmental education nationally, and lending support to government conservation agencies. Alvaro Ugalde, as head of the National Park Service (SPN), took the UNA students and staff up on their offer and requested their service as members of a "planning team" for Chirripó and La Amistad national parks.⁸ UNA's School of Environmental Sciences also publishes a monthly environmental update called Ambien-Tico and maintains a large video library with over 150 films on environmental topics. The "videoteca" is open to the public.

The National Open University in collaboration with the conservation group ASCONA, founded the Program for Environmental Education in 1977. Mario Boza was its first director. This program grew out of the "emerging necessity for younger generations to study the relationships of their surroundings, [and] to create a conscience and an ability to confront the problems that they generate." The program was started to develop curricula, literature, and audio-visual aids which could be transferred to

classroom settings for a wide range of age groups. It has enjoyed popular support and high enrollment of Costa Rican students. Like their counterparts at UNA, UNED students and faculty are often called upon to assist in government conservation programs. In 1984, for example, a UNED team completed research on a fire management plan for SPN. Another UNED entity is CIDA, the Center for Environmental Information and Documentation. As mentioned in Chapter Six, CIDA was created by the Carazo administration as a joint function of UNED and the National Park Service (today SINAC), as a data collecting and storing service for information on natural resources.

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There are other schools of higher education and programs that offer environmental education. Costa Rica's Institute of Technology, primarily an engineering school, deals with industrial planning and environmental pollution and also has a Forestry Engineering Department which teaches students about environmental silviculture. The University for Peace has an integrated conflict-resolution/natural resource management program and students there can study for a Master's in Peace and Ecology. And most of Costa Rica's other colleges and universities offer some coursework in environmental sciences. And having research organizations headquartered in the country has been another useful source of disseminating environmental education. The Organization of Tropical Studies (OTS), Tropical Science Center (TSC), Agricultural School for the Humid Tropics (EARTH), Center for Environmental Study (CEA), and especially the

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Tropical Agronomical Research and Education Center (CATIE) have had ongoing training programs (via conferences and in-field studies) to advance new ideas in conservation and sustainable agriculture.

Environmental education in Costa Rica is not limited to the college level. The Ministry of Public Instruction is involved with disseminating environmental curricula to elementary and secondary schools. Based on his work entitled "Preliminary Considerations for the Elaboration of a National Environmental Education Plan," Orlando Hall developed the Center for the Improvement and Teaching of Sciences (CEMEC) within the Ministry and funded in part by CONICIT. CEMEC not only promotes the instruction of sciences, but also helps public schools educate people to know more about the care of their tropical environment. Another training program is the Latin American Center for Environmental Education (CLEA) which was founded in Costa Rica in 1982. Using Latin American and North American guest instructors, CLEA focuses on offering teacher in-service training on environmental issues. It prepares course materials, environmental books and guides, and field trips for teachers to acquaint them with how to teach environmental topics. Evidence of student involvement on ecological topics is seen throughout the country. Students' artwork often graces city walls and sides of buildings and is exhibited at the national zoo.

Other youth programs in environmental education exist. One of the more noteworthy ones is the National Youth Movement's in-

volvement with national parks in ecological projects, education, and maintenance of park services and forests. Information on, and field visits to, the national parks are part of the official programs of Costa Rican elementary and secondary schools. The Tico Times reported that one high school in Costa Rica, the Liceo de Alajuita, formed an Ecology Club in 1992 which was the first of its kind in the nation. Its members are involved with informational programs and environmental service projects.

Other Costa Rican media are utilized for the environmental education of the country. There is a definite proliferation of environmental literature including a host of journals and magazines that has flourished in Costa Rica. The principal ones are Biocenosis (publication of UNED's Program for Environmental Education), Brenesia (publication of the National Museum), Zurqui (periodic environmental supplement to the daily newspaper La Nación), Agronomía Costarricense, Revista de Biología Tropical, Tecnología en Marcha, Turrialba (a CATIE publication), and Neotrópica (of the Fundación Neotrópica). A myriad of nature guides, national park books, wildlife literature and, posters of endangered species abounds in book stores and tourism shops. Posters of the Costa Rican life zones (created and distributed by Fundación Neotrópica) or of pristine beaches and volcanoes (produced by Costa Rica's tourism institute, ICT) grace hotels, travel agencies, book stores, department stores, schools, offices, and and restaurants and continually remind citizens of their country's natural areas.

In the 1980's and 90's the print and electronic media kept active guard in keeping abreast of environmental issues and informing the public. Newspapers like La Nación, the Tico Times, and others maintained regular environmental features and columns. Costa Rican television aired many programs dealing with wildlife and nature. One station, Channel Six, proclaimed itself the "canal ecológico" (the ecology channel) and almost exclusively featured environmental programming. MIRENEM even used to maintain a national telephone "hot-line", called "teléfono ecológico," which citizens could call twenty-four hours a day to be updated on various environmental issues and to report abuses they observed. Its motto was "El bosque, patrimonio del futuro" (the forest, heritage of the future). Another commonly seen environmental slogan on billboards, buses, and bumper stickers was "Naturaleza, Belleza, y Paz: Todo en Uno--Costa Rica" (Nature, Beauty, and Peace: All in One--Costa Rica). There were other public and private campaigns to encourage recycling ("yo reciclo, y usted?"/I recycle, do you?) and to control pollution and litter ("no a la contaminación"/stop pollution).

Government proclamations of special days and weeks likewise have been a means to educate, inform, and alert the public. Arbor Day has been used for decades to encourage reforestation. As early as 1950, the government declared a National Week for the Conservation of Natural Resources. The fifth of June was named the "National Day for the Environment" and in 1992 it was honored as "World Environment Day" to correspond with the Earth Summit

taking place at the same time in Rio de Janeiro. Many Costa Rican boy and girl scout groups marked the day by planting trees in deforested areas. And the fourth Monday in July has been proclaimed National Wildlife Day with similar attention given to it by the media and environmental groups.

Environmental groups themselves have been another key source of environmental education in Costa Rica. A directory of non-governmental environmental organizations lists some fifty different groups across Costa Rica that engage in promoting environmental education programs. The groups offer workshops and courses to their members, to school children, and to the general public. Some of the more noteworthy groups in this regard include Fundación de Educación Ambiental (which trains teachers in rural areas and offers a variety of workshops for younger children), ECOJOVEN (whose goal is to develop an environmental conscience among youth via school programs and workshops), CEDECO (the Educational Corporation for Costa Rican Development, which promotes sustainable development and appropriate technologies), the Frente Ecológico Universitario (whose aim is "to mobilize university students for the defense of the natural environment"), and Enseñanza Mundial (an international organization that teaches alternative education via "the new curriculum" which stresses integrating environmental ideals into all aspects of life).

Many of these organizations have been involved with the many conferences and symposia on conservation topics that have been held in Costa Rica over the past twenty-five years. These confer-

ences also have stimulated media attention and a greater awareness of environmental issues. In 1974, the First Central American Regional Meeting on the Conservation and Management of Natural and Cultural Resources took place in San José. Topics there ranged from international border parks to preserving cultural and historic sites. In 1975 (also in San José) Costa Rica hosted the International Symposium on Forestry Science and Its Contributions to Development in Central America. The same year, it hosted the Symposium on Central American Ecology and Conservation. As a sincere attempt to plan for the future of the country, in 1977 the government organized the Symposium for Costa Rica in the Year 2000. Economic development tended to be the conference's general focus but it also included an important "round table" on natural resources. Noted Costa Rican conservationists like Luis Fournier, Rodrigo Zeledón, Mario Boza, María Eugenia Bozzoli de Wille, and others participated.

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Since then many other conservation conferences have taken place in Costa Rica and the trend seems to have continued into the 1990's. Journalist Shirley Christian noted that "here in Costa Rica, some kind of conference on the environment takes place almost every week." A sampling of these includes:

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- 1979, Second International Forestry Sciences Conference
- 1980, First National Symposium on Environmental Pollution
- 1981, First (national) Symposium on National Parks and Biological Reserves
- 1985, The Symposium on Natural Resources and Development in Costa Rica

- 1985, First National Environmental Congress
- 1986, First National Forestry Congress
- 1988, Second National Symposium on Environmental Pollution
- 1988, 17th General Assembly of the International Union for the Conservation of Nature and Natural Resources
- 1992, The Round Table on the Protection of the Environment as a Fundamental Human Right (jointly sponsored by the Costa Rican Supreme Court and the Regional Meeting of Human Rights in Latin America and the Caribbean)
- 1992, The Round Table on Guanacaste: Crisis and Perspectives of Development (sponsored by the University of Costa Rica)

One study links the origins of these conferences and meetings to Costa Rica's evolving development of a national conservation ethic, or at least as representing an indication of the government's commitment to dealing with environmental problems. 16

Certainly conferences draw from a wide spectrum of different professionals all adding expertise or advice to the topic area. And certainly the education gained, and the publicity stemming from, such fora can be viewed as a valuable vehicle for change. The obvious question to be asked, however, is whether the number and diversity of conferences on the environment has led to improved environmental standards or actions.

Criticism of this system has been levied on its inherent bureaucratic inability to translate ideas and decisions into workable, enforceable strategies for conservation and environmental protection. The country has suffered from what Costa Rican biologist Luis Gomez has called a "technocracy that tend[s] to neutral-

ize a potent electorate with bureaucracy." George Guess called the "Costa Rica-2000" conference a "a huge planning catharsis" and recalled that the Caribbean port of Limón was closed down for almost a year during the late 1970's due to build-up from topsoil erosion--a direct result of poor planning that allowed deforestation and overdevelopment with significantly negative national and local economic consequences--the very type of conditions the conference was trying to address. Another study cited how legislative and political barriers have effectively blocked implementation of the principles extolled at conferences. Inadequate funding for agencies to implement the suggested proposals also has impeded their complete success.

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But the alternative seems worse: the absence of continuing dialogue could potentially stifle creative thought and could lead to even greater governmental inaction. It could also decrease the opportunity for professional, interdisciplinary participation in the decision-making arena. Economist Jaime Hurtubia has suggested that environmental problems are hardly solved by biologists alone. He has argued for the the necessity of a "trans-disciplinary science" to include historians, sociologists, and other social scientists (as well as biologists) to join together to seek solutions to environmental problems. Wolfgang Hein, another student of the sociology of environmental problems in Central America, has agreed with this assessment and has written that because most of the literature dealing with ecological dilemmas was written by biologists, agronomists, and foresters,

"a systematic and extended analysis of the socioeconomic origins of the ecological crisis has not been included" in their suggestions for improvement. Estrella Guier has labelled what she believes is needed an "anthropocentric" approach that "would take into account the . . . social, economic, and cultural context" of the problem being addressed. Conferences, symposia, and workshops have offered a viable means to include "total participation of all sectors of society" in an open, professional forum that is essential to a democratic society. And the conferences have at least displayed an awareness of, and a willingness to deal with, the vast dilemma of development versus protection. Environmental education, national park development, socioeconomic park uses, research opportunities, and the government's emphasis on inventorying biodiversity have all increased markedly in the years since the first symposia, even if they have not been their direct results.

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Overall, the urgency to have an informed citizenry in Costa Rica has prompted a robust emphasis on environmental education. Former President Rodrigo Carazo stated that "the language of education is very strong" in helping to stimulate an ecological conscience. Luis Fournier recognized this link when he wrote: "The objectives of environmental education are fundamentally oriented towards forming an awareness among Costa Ricans that we are part of a complex environment, and that our survival depends on our use of the environment and natural resources."

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Critics, however, maintain that the goals have not always

been translated into reality. In 1984 Olga Brenes decried that environmental education in Costa Rica was "disperse . . . [and] voluntary." And seven years later Roxana Salazar argued that things were no better then: "[R]eality shows that [environmental education] has not fulfilled its stated objectives . . . it has not generated a change of attitude and behavior toward the environment." She advocated that the government play a bigger role in the direction and promotion of environmental education. The country's conservation record, however, speaks for itself and a framework is in place for future environmental successes. Gerardo Budowski has noted that "the system of public education in general, supported by excellent publications and audio-visual aids, has left a profound mark, and all of these have added to the growing conscience of the people regarding the importance of their wild areas."

From National Parks to a National Environmental Ethic

Which came first? Did a national environmental ethic lead to the development of national parks, or were national parks a catalyst for the development of an environmental ethic? This "chicken or egg" question can be analyzed only in light of Costa Rica's evolutionary conservation history and probably does not differ greatly from its avian counterpart: the ethic evolved over time from a simpler form with periodic mutations along the way.

That Costa Rica's geographic and historic uniqueness shaped the unfolding pattern of conservationist thought in the be-

ginning does not account for the surge in environmental awareness experienced in the last twenty years. It explains its background and indeed was a germ in its formation, but another element was surely at work to nurture its rapid growth. Luis Gómez and Jay Savage believe that a greater environmental awareness occurred through "the changes in Costa Rican national attitudes in the past two decades, the dedicated young biological scientists and conservationists who have helped in developing the nation's environmental consciousness, and the emerging national concern for basic knowledge of the environment and its biota coupled with planning for the benefit of both man and environment."

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But the reason that Gómez, Savage, and others so frequently cite "the past two decades" is because of that threshold legislation from 1969--the Ley Forestal which established the basis to create national parks. It was destined to be a cyclical phenomenon. Once parks were created they became, as Gerardo Budowski has described them, "a source of pride for the majority of Costa Ricans"--whether they necessarily visited them or not--which in turn inspired them to demand more protected areas and other environmental policies.

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One of the most important ways in which the national parks actively led to an increased environmental ethic among Costa Ricans was via their educational capacity. Mario Boza, speaking at the 1972 IUCN national parks conference, said that publicity via the national media and park visitor centers soon after the designation of the first two national parks (Poás Volcano and

Santa Rosa) was "a tremendous success in our country." Ten years later in a presentation entitled "National Park Interpretation: A Direct Form of Creating a Conservationist Conscience," Douglas Cuillard (a U.S. National Park Service liaison to SPN) told the delegates at the First Symposium on National Parks and Biological Reserves that creating a conscience was the most important mission of Costa Rica's national parks. He emphasized that interpretive facilities (i.e. "visitor centers, exhibits, hiking trails, guided nature walks or . . . virtually any planned activity intended to transmit the citizen's relationship to the parks"), television and radio programs, travelling exhibits, movies, and newspaper articles were "all understood by the public and [were] the best investment SPN [made] to create a conservationist conscience." Tactfully placed signs in national park areas remind visitors of their environmental stewardship. Examples include:

- "Costa Rica es nuestra casa, ¡no la ensuciamos!"
(Costa Rica is our home, let's not pollute it!)
- "¿Refleja su comportamiento diario esta responsabilidad?"
(Does your daily behavior reflect your responsibility?)
- "Produzcamos oxígeno, plantemos árboles."
(Let's produce oxygen, plant trees.)

Concerning endangered species:

- "Pero, ¿por cuánto tiempo más?"
(But for how much longer?)
- "Quedamos pocos, muy pocos . . . ¡protegemos!"
(We are left with few, very few . . . let's protect them.)

To continue the push, the National Park Service inaugurated an environmental education department in the late 1970's. An

important study coordinated by Esaú Chaves resulted in a 1979 report on the directions SPN would take to use national parks as tools of environmental education. One of its general objectives was "to develop an environmental ethic." The report concluded that it was "necessary to divulge knowledge of the environment among the greatest number of people possible due to the fact that our communities--the whole world, in fact--are being confronted with a serious threat: the degradation of the environment." It went on to suggest that "an environmental ethic" would enable citizens to understand their "relationship with the natural world" and would lead to a better understanding of how to take care of it. National parks would help "to immerse the people in . . . nature" and would thus lead to the "formation of an environmental conscience." To accomplish these goals, SPN would work with the Ministry of Public Instruction to use a variety of media to introduce Costa Ricans to the destruction of the environment--deforestation, pollution, etc.--to help them understand how and why to protect it. The report ended by saying that the national parks and other protected areas would "play a determining role" to fulfill the goal by being a part of the educational system, via curricula in both primary and secondary schools.

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In 1981 the role national parks play in disseminating education was the topic of a regional multi-week conference. SPN hosted the "Regional Mesoamerican Workshop on Interpretation and Environmental Education" (discussed more in detail in Chapter Six above) at Manuel Antonio National Park. It was designed specif-

ically for teaching representatives from other countries which interpretive services worked well at Costa Rican national parks and how those could be developed elsewhere. Again, emphasis was placed on how to familiarize the public with nature and to help people understand environmental stewardship.

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In the mid-1980's SPN joined hands with the National University's School of Environmental Sciences to develop a special course on the "Interpretation of Natural History." The course was designed to help students learn how to create exhibits, how ("and how not") to prepare and give slide presentations, and how to arrange field trips to national parks and museums. It also provided tours of radio and television studios to acquaint students with how to utilize the media for making spot announcements, special programs, and interviews.

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These and other programs were continued through the 1980's and into the 90's. In his annual report of 1983, SPN director Jose Maria Rodriguez wrote of how his Environmental Education Department had expanded the work of interpretation centers at national parks for "the conscience-ization [sic] of the public in terms of the rational use of valuable resources and of the natural and cultural heritage of the country." He listed a variety of conferences, workshops, television and radio programs, publications, and outdoor exhibits and booths that the department had been active in during the year. Topics of the publications and programs ranged from threatened and endangered wildlife species to the role of national parks in protecting the environment.

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By the late 1980's when SPN's direction shifted to "socio-economic park uses" and "sustainable development," special emphasis was placed on acquainting the people who lived near the parks with the parks' resources. U.S. Peace Corps volunteers became instrumental in this regard. They organized trips into the parks for local residents to develop support and to encourage the parks' recreational activities like hiking and sightseeing. One Peace Corps volunteer, Cyndi Hypki, prepared a training booklet entitled "Manual for Interpretation and Environmental Education" that the SPN used for many years. Estrella Guier stated that these plans were a way "to fortify" the national parks and a way "to project themselves into the nearby communities." Agreeing with that judgment, Susan Place, a geographer who has studied the impact of parks on the lives of Costa Ricans, affirmed that "local participation from the beginning of conservation projects was critical to their success."

Familiarizing local residents with the benefits of conservation areas and integrating them into the national parks' designs were never easy tasks. Former President Carazo explained that because Costa Rica was agriculturally steeped for centuries in a "European mentality for deforestation," there was a great deal of "legislative and community opposition" that slowed acceptance of park ideals by many citizens. Mario Boza claimed that the program developed "despite a persistent shortage of funds and of qualified personnel, and in the face of the belief, which most of the country originally shared, that nature conservation is

a superfluous activity." He later described this condition as "widespread apathy, particularly among decision makers." And, as Gerardo Budowski noted, many of the parks and protected areas that were established "went relatively unnoticed and even caused resentment in certain private and public sectors."³¹

However, little by little (and due to successful environmental education programs and the work of environmental groups) much of Costa Rican society came to accept and support conservation. By the mid-1980's many Costa Ricans had become what one Peace Corps volunteer called "patriotically proud" of how their nation was becoming a world leader in tropical conservation, even though many were not really "familiar with the parks themselves." According to Karen Olsen de Figueres this kind of "soft support" resulted from a growing environmental ethic even if it did not always lead to nationwide bandwagon activism for policy reform.³²

There have been many instances, however, of public activism that did help to shape policy. Certainly government leaders were well aware of the public's opinion on the Palo Verde National Park and oleoducto controversies. There was a great deal of public response to various versions of the Forestry Law. And university students by the late 1970's and 80's realized that they also could be a force for environmental reform. Not only did students petition the government against the Palo Verde separation and for passage of the Forestry Law (and other policies), but they also became involved with protesting pesticide abuse that was leading to non-point pollution. In 1984, for example, the University of

Costa Rica's Association of Biology Students complained to SPN officials that fumigations on cotton plantations in Guanacaste were adversely affecting Santa Rosa National Park. The students' findings showed that toxic pesticides had caused the death of certain park animals--facts that they hastened to the attention of the Legislative Assembly, the Ministry of Justice, the UCR School of Chemistry, the Colegio de Biólogos, and to radio and television stations. Over seventy students signed letters of petition to SPN chief Alvaro Ugalde demanding "an investigation and quick action" on the problem.

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In other cases, students have volunteered to be of assistance to the park service. The Mountain Climbing Club of the National University wrote Ugalde explaining that it was working with the Fundacion de Parques Nacionales on certain projects and would gladly assist SPN if needed. "Knowing the serious problems facing conservation in our country and the difficult legal battle to consolidate the system," a club spokesperson wrote, "we would like to show that . . . you can count on our complete support." The government also has taken advantage of a program designed to use school children in protected areas. Daniel Janzen pioneered the program in Guanacaste National Park and the idea has caught on elsewhere. One study reports that the program "enlists student volunteers in the protection and maintenance of national parks [and] as a result, the young people frequently become advocates of tropical forest conservation."

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The SPN (and now SINAC) has been an untiring leader in the

efforts to use conservation programs to educate the public about environmental issues. Its successes with park development, management, and education were discussed in Bali, Indonesia, at the 1982 Third World Congress on National Parks (an overt play on words indicating that it was the third in a series of ten-year conferences and that its theme was for encouraging park development in the Third World). Many changes had taken place in the ten years since Mario Boza had spoken of his country's new parks program at the IUCN-sponsored Second World Congress. In Bali, Craig McFarland, Roger Morales, and Jim Barborak presented a paper entitled "Establishing, Planning, and Implementation of a National Wildlands System in Costa Rica" and Gerardo Budowski and McFarland presented a "do's and don't's" strategy plan for conserving areas in the "Neo-Tropical Realm." Once again, Costa Rican conservationists had volunteered to share the strengths of their programs with other developing nations.

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Lest the ideals immortalized in these actions and words become stale, Daniel Janzen proffered the following advice for reminding a nation of its environmental responsibilities:

It is traditional . . . to identify biologically important habitats, obtain title, fence and patrol them and view the task as largely complete. Such an act is functional if society at large is pre-programmed to recognize the jewel thus bestowed upon it. . . . If not, and this is the general case in tropical conservation, the story is only halfway through the first chapter of a long book. Those areas we view today as endangered are probably already extinct, and those we view as securely preserved are at best on the endangered list. They will remain there until they are viewed in the same breath as churches, libraries, and democratic government. (36)

The question remains, then, are Costa Ricans such a "pre-programmed" people? There are no consistent answers. Luis Fournier posits that thirty years ago there were few who stood with him on environmental issues, but that now "in all parts of the country" there is a "very strong environmental conscience" despite how some individuals and groups are "more enthusiastic than knowledgable." He is encouraged by the growing campesino movements that advocate sustained uses of resources and the growing environmental law community. Gerardo Budowski agrees, but is more guarded. He sees an environmental ethic as a "nebulous and arbitrary" entity that is more characteristic of Costa Ricans with higher education--although he is quick to admit that Costa Rica has a very high percentage of high school and college-educated people. "There's less in the rural areas," he stated in a recent interview, "especially with older people there who are used to other uses of the environment, who have believed that

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'industry is always good.'

Alexander Bonilla recently stated that "yes, there's an environmental ethic, but it's poorly understood in certain conditions." His main point is that now people's conscience for the environment "needs to be oriented"--to be directed toward understanding how people fit into the larger picture of being a part of nature. "We need to involve everyone more so they can understand world environmental problems to survive on this planet," he added. And others, like historian and environmentalist Orlando Castillo, are not as sure that a true environmental ethic

exists. Castillo told this author that the ethic is more of a "cassette in the mind, in the imagination--a cassette made in the United States." Clarifying, he said that many Costa Ricans "admire natural beauty from a distance, say from the mall in San Pedro. . . . Only a few truly understand the natural harmony of the cosmos, of all natural landforms."³⁸

This diversity in thinking on conservation of the environment is manifest very clearly in the make up of Costa Rican non-governmental organizations. It is to the history and development of these groups that attention should be given next.

CHAPTER 9

THE NON-GOVERNMENTAL APPROACH

The expansion of the Costa Rican environmental movement and conservation organizations is a natural growth. [Like] a tree given roots, sunshine, fertilizer, water, and allowed to grow, the movement has become what it is today.

- Karen Olsen de Figueres (1)

The Active Role of NGO's

Non-governmental organizations (NGO's) abound in Costa Rica. Local groups, national associations, and international environmental organizations play a vital role in monitoring the government and working to lobby for (and to fund) conservation efforts in Costa Rica. There has been a very dramatic proliferation of NGO's in the last fifteen years. The 1994 Directorio de Organizaciones, Instituciones, y Consultores en el Sector de Recursos Naturales en Costa Rica lists eighty-eight non-governmental, non-university sponsored environmental groups that are active throughout the country. Historically, these organizations have stemmed directly from people's perception that the government has been unable to address adequately the country's deteriorating environmental conditions. They also have served to gauge public opinion, endorse or reject governmental policies, and encourage (sometimes pressure) the public to become involved. Mario Boza has written that because "[c]onservation is a heavy burden for the government of a developing country," the environmental groups are important for activating citizens to help through "associa-

tions, foundations, or clubs." The NGO's, he added, "play an active role in raising international funds, helping with protection, and developing environmental education programs."³

The Association of Biologists (Colegio de Biólogos), founded in 1968, is considered to be Costa Rica's oldest "environmental organization," although it was not originally created as such. It was organized by University of Costa Rica biologist José Alberto Sáenz as a professional association of biological scientists but soon became involved in lending technical advice, scientific experience, and professional assistance to conservation causes. It became an especially important entity in the 1970's and 80's for championing the defense of the Costa Rican environment. Members of the association lobbied the Legislative Assembly for environmental policies and national park designations and conducted and publicized research on a wide range of conservation topics.⁴

ASCONA (the Costa Rican Association for the Conservation of Nature) was the country's first "grass roots" environmental organization, that is, the first citizens' action group. It was established in response to the 1972 U.N. Stockholm Conference on the Human Environment by what Alexander Bonilla, one of its founders, called a "group of university youth whose goal was to foment a new attitude about man's relation with nature." Since its inception in 1972 it has been a volunteer organization made up of "all levels of the population." Its central focus has been to serve as a "watchdog" for environmental policy and to offer

assistance to both public and private sectors in the conservation of natural resources. According to a brochure from an ASCONA office, the group's five principal goals have been: to promote the rational use of natural resources--insisting on "development without destruction" (the group's motto); to help educate Costa Ricans about the importance of conserving the environment and its unique biodiversity; to promote the creation and enforcement of environmental protection laws; to collaborate with state and private institutions for the conservation of nature; and to monitor the restoration and protection of the "physical, biotic, and cultural environment for the benefit of present and future generations."⁵

In addition to being one of ASCONA's founders, Alexander Bonilla served as its first president throughout the 1970's and its conservation director in the 1980's. During these years, the group was involved in a broad range of issues which included the creation and protection of national parks, urban planning, reforestation, soil conservation, and watershed protection. ASCONA members lobbied the Legislative Assembly for such environmental policies as pesticide abuse laws, industrial pollution regulations, mining policies, and public health standards. They also were involved in performing environmental impact assessments and in providing sustainable forest management education to local campesinos. The group enjoyed a good working relationship with ICE (the electricity institute) on watershed and reforestation projects. Former National Park Service director Alvaro Ugalde

suggested that the group offered "a more critical" approach towards government programs and conservation efforts and that it was a "help to the cause in a different way." An outside study found that ASCONA "grew to be one of the most respected and powerful environmental groups in Latin America."⁶

Certain preserved areas are directly attributable to ASCONA efforts. The Puriscal, Quepos, and San Carlos reforestation projects were major ASCONA successes in the late 1970's and early 1980's.* The group also worked diligently to protect Costa Rica's ecologically vulnerable coastal mangrove swamps by working to pass a bill in the Legislative Assembly creating the Zona Maritima-Terrestre which also provided for oil spill prevention and clean up measures and coastal pollution controls. In fact, ASCONA is best known for its 1983 campaign against the trans-isthmian oleoducto proposal. It opposed the "dry canal" idea that the Monge administration and business leaders were planning as shipping companies were seeking ways around the expense and tankard size constraints of the Panama Canal. The oleoducto seemed like a viable alternative and a possible economic opportunity, but environmentalists warned of ecological disasters that would occur from the pipeline's construction through pristine

* In his book La situación ambiental de Costa Rica, Alexander Bonilla lists the re-amalgamation of Palo Verde National Park as an ASCONA success and calls the protected area "a national park protected by public opinion" (p. 139). The truth of the matter is that while Palo Verde represents a threshold in the history of conservation activism in Costa Rica (specifically against the Carazo administration), public opinion did not sway the Supreme Court's constitutionality decision on the case and did not affect the final resolution of the matter. (See pp. 217-236 above.)

Costa Rican forests and of the dangerous ecological and economic threats it would pose in the event of oil spills to Costa Rican shores. Thus, ASCONA was instrumental in helping form the National Committee Against the Pipeline and mounted a nationwide publicity campaign to educate Costa Ricans about the possible environmental consequences.

The Committee Against the Pipeline succeeded in preventing construction of the oleoducto, but ASCONA's involvement in the campaign caused its eventual demise. The group had been the recipient of financial support from the U.S. Agency for International Development (AID) which required that salaried staff be a precondition of aid. While this proved successful for some of its projects, it also led to the decline of its volunteer based organization and a big membership loss. AID funds to ASCONA were cut off during the oleoducto controversy because the U.S. government supported the pipeline's construction. This caused a split within ASCONA ranks as some members sided in support of the project. A Peace Corps volunteer working with ASCONA at the time recalled that "the pipeline got it [ASCONA] in trouble, from which it never completely recovered." And, as mentioned earlier, Bonilla is on record saying that the oleoducto/U.S. Aid dilemma was the death knell for any hopes of the group being effective in the future. Another study lamented that "ASCONA's successes were not transmitted to the development of a strong ecological movement, but on the contrary, conflicts basically of a partisan character within ASCONA, took the association to the brink of collapse."

ASCONA is still listed in the Directorio of active conservation groups and it does maintain a small office in Tibás (a San José suburb), but the scale of its activities is much reduced from its heyday of the 1970's and 80's. Research and legal action are still two of its primary foci, however. Projects in the early 1990's included conducting environmental assessments on coal mining in the Talamanca Mountains and on a road construction project in La Amistad National Park. It has also worked to investigate sources of pollution in the Tarcoles and other rivers. Recent priorities include monitoring the banana industry, researching ecotourism, and providing environmental education programs.

Other environmental groups were important assets on Costa Rica's conservation front in the late 1970's and 80's. Although the important roles played by Fundación de Parques Nacionales (founded in 1979 by Mario Boza) and Fundación Neotrópica (founded in 1985 by Alvaro Ugalde and Rodrigo Gámez) have been discussed in some detail in previous chapters, it would be remiss to omit mention of them here. Both organizations were formed specifically to support the development of national parks but have branched out to other conservation concerns in the past decade. FPN's mission has been to seek and distribute national and international funds (grants and donations) for national park projects. Much of the fundraising has been for purchasing private inholdings within national parks to ensure the ecological integrity of the area itself. It also has helped fund the development, manage-

ment, and protection of national parks and equivalent reserves. More recently it has funded sustainable development projects and environmental education programs.

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Fundación Neotrópica has promoted activities that are directly related to the conservation of Costa Rica's natural heritage. Among its goals have been the acquisition of private lands for nature reserves, protecting endangered species of flora and fauna, promoting ecological education through its publications branch--Heliconia Press (which publishes many of the guides to Costa Rican national parks), and promoting resources for scientific tourism. It has become known for its promotion of sustainable development in communities near the national parks by providing a market ("Nature Stores") for local artisanry and products made from forest resources. In 1988, Fundación Neotrópica, with the assistance of Conservation International, completed a very comprehensive study entitled Costa Rica: Evaluation of the Conservation of Biological Resources which specifically prioritized areas, resources, and wildlife to be protected. The organization has also been active in promoting buffer zone protection.

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In terms of grass roots activist organizations, the void created with ASCONA's decline was filled in many ways for the past ten years by the Costa Rican Ecology Association (Asociación Ecologista Costarricense, or AECO). According to the group's literature, AECO was formed in 1988 "to promote the development of an ecological conscience in Costa Rican society [by] facilitating knowledge and analysis to clarify the causes and effects of the

environmental crisis." Its two central objectives have been "to generate initiatives for dealing with the environmental crisis, and to stimulate "ecological practices that will renew man's traditional relationship with the environment, which in turn will allow a true and democratic participation of the people in the country's process of development."¹²

Using a "multidisciplinary and multisectorial vision," AECO has set out to accomplish these goals by attempting to be a very inclusive organization. Membership is open to "all people in agreement with [the group's] principles and objectives" and solutions are sought via open discussions with scientists and lay people, on both national and local levels, and taking into consideration the diversity of opinions on how development should proceed. The objective is to integrate not only "social, technological . . . and economic factors," but also to include ones that are uniquely "tico" into a formula for change. The underlying principle here is the belief that "environmental problems have their origins in the mistaken models of development [that were] imposed on [Costa Rican] society" and that thus require "a social transformation that changes the model [and] proposes alternative experiences . . . inspired by just social relations and the appropriate use of technology." To that end, the group has written an "Institutional Development Project" that traces the historic and "socio-environmental" nature of Costa Rica's past agricultural and economic history. It evaluates the history and ecological consequences of Europeanized agricultural develop-

ment and calls for a return to native, traditional crops and practices for the long-range sustainability of the country's economy.

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AECO has engaged this philosophy by promoting a variety of so-called "activities in the defense of the environment." These have included environmental education programs, research and training workshops, lobbying campaigns, sustainable development incentives, youth programs, and citizen involvement promotions. Specifically, AECO assisted the community of Tibas to fight for halting the pollution caused by a metal manufacturing firm. It has been involved in the continuing fight against the illegal importation of certain pesticides. It has fought against the "uncontrolled expansion" of the banana industry, campaigned for modifications of the tuna fishing industry, assisted the effort in northern Costa Rica to halt Tico Fruit's dumping of pollutants in the Aguas Zarcas River, and was successful in blocking Stone Container's plans to build a giant port facility in the Golfo Dulce. Likewise it has published several books on environmental subjects, including a poetry anthology called Dejen al sol brillar (Let the Sun Shine), and a book on the views of Latin American youth concerning the environment and development. It publishes a magazine called El ecologista. According to AECO director Alvaro León, the organization's current priorities are to work for improved forestry management plans and to work with local communities on fitting environmental policies into their local needs. The group is also monitoring

very closely the government's recent restructured and decentralized national parks and conservation areas management plans (SINAC) and has been critical of granting regional administrators too much authority on environmental decisions.

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There are too many Costa Rican NGO's to go into similar detail about here. Many of the groups are area specific in nature or are concerned with the conservation of a particular species or place. There are NGO's that concentrate specifically on alternative and organic agriculture, forestry issues, rural and urban social problems, national parks and other protected areas, sustainable development, pollution control, energy issues, environmental education, coastal resources, mining, indigenous issues, environmental legislation, ecotourism, and wildlife protection. Most seem to be identified with a requisite acronym. Some of the more prominent, national groups include:

- Asociación Protectora de Arboles (ARBOFILIA)
- Asociación Costarricense para la Protección de los Ríos (PRO RIOS)
- Asociación Naturista de Costa Rica (ASNAT)
- Asociación para la Conservación de los Recursos Naturales de Costa Rica (ACORENA)
- Asociación Preservacionista de Flora y Fauna Silvestre (APREFLOFAS)
- Asociación Pro Conservación Acuática de Costa Rica (APROCA)
- Asociación Pro Desarrollo y Ecología (APDE)
- Asociación de Voluntarios en Investigación y Desarrollo Ambientalista (VIDA)

- Asociación de Voluntarios para el Servicio de las Areas Protegidas (ASVO)
- Fundación Costarricense para la Conservación de la Naturaleza (AHORA)
- Fundación Forestal Costarricense

A development on the NGO scene in the late 1980's and 90's was the increase of attention given to environmental law. Fundación Ambio and the Center for Environmental and Natural Resource Law (Centro de Derecho Ambiental y de los Recursos Naturales, CEDARENA) were both formed in 1989 to concentrate on legal aspects of environmental problems. Fundación Ambio has organized training courses on assessing environmental impact and has been especially attentive to cases of pesticide abuse in the banana industry. Its director, Roxana Salazar Cambroner, is one of Costa Rica's leading environmental attorneys who has authored or co-authored a variety of books and reports on the legal aspects of pesticide abuse, public health, hazardous waste disposal, biodiversity, sustainable development, and environmental human rights. CEDARENA focuses on some of these same issues and is involved more with natural resource legal issues.

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Another species of NGO that has gained popularity in the 1980's and 90's are the volunteer organizations. Both ASVO and VIDA organize groups of volunteers to do conservation projects in national parks and biological reserves. ARBOFILIA volunteers work with local residents in various parts of the country to help teach alternatives to clearing forest. One newspaper article reported that ARBOFILIA members working on a project near Carara

Biological Reserve in 1992 "share[d] talent, time, and knowledge of agronomy and ecological biology . . . in exchange for the people's promise not to cut down the trees or burn the land." Other groups like Amigos de Lomas Barbudal (Friends of Barbudal Hills) and Asociación para la Conservación de los Cerros de Escazú (Escazu Hills Conservation Association) are responsible for managing conservation areas. And finally there is a growing number of youth organizations that organize conservation projects for children and teens. Among those are the Alianza de Niños para la Protección del Ambiente (Children's Alliance for the Protection of the Environment), Asociación Cristiana de Jóvenes (Christian Youth Association), Ecojoven (Ecoyouth), and the Boy and Girl Scouts of Costa Rica.

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In 1989 representatives from various NGO's met to consider forming an umbrella organization that would unite the environmental movement and promote increased cooperation and communication among the myriad groups. The result was the formation of the Costa Rican Federation for the Conservation of the Environment (Federación Costarricense para la Conservación del Ambiente, or FECON). FECON publishes the annual directory of environmental groups and works to coordinate interorganizational activities. It also sponsors workshops and conferences on a variety of environmental topics and has given technical and financial assistance on a number of conservation initiatives. There are nineteen member organizations.

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International NGO's also have had an historic and ongoing

role in Costa Rican conservation. Since its charter membership in the International Union for the Conservation of Nature (IUCN) in 1948, Costa Rica has welcomed advice, finances, and attention from the international environmental community. As described in previous chapters, international NGO's were of tremendous assistance to Costa Rica in the early years of national park development and during the years of economic crisis. This trend has continued into the 1990's as many international NGO's have tropical conservation priorities and often have research programs in or about Costa Rica. Some of these include The Nature Conservancy, Conservation International, IUCN, Audubon Society, Rainforest Alliance, Rainforest Action Network, Sierra Club, and the World Wildlife Fund (WWF) which maintains an office in San José.

Some international NGO's have Costa Rican chapters. Friends of the Earth (Asociación Amigos de la Tierra de Costa Rica) and the Audubon Society are active in the country. A more common trend is the affiliation of international NGO's with national and local groups. AECO, for example, has a close relationship with Friends of the Earth. Fundación Ambio is affiliated with the Canadian Association of Environmental Attorneys. And many different groups list WWF and IUCN as affiliate organizations from which they receive technical advice and financial support.

But while financial contributions from international NGO's, U.N. programs, and government lending agencies have been indispensable to Costa Rican conservation efforts, pitfalls have emerged in their type and scope. Mario Boza has written that the dona-

tions often have "serious drawbacks" when the NGO's and agencies "decide how they will be used." He cites how Costa Rica's greatest financial need is for acquiring more land--purchasing park in-holdings, expropriating buffer zones, and creating biological corridors. Yet the global environmental community, he explains, often avoids donating funds for land purchases. Instead they give money for research. He has calculated that "for the cost of technical advisory services by a United Nations expert for one month . . . we could purchase twenty hectares [fifty acres] of tropical forest to be added to a national park." He concludes,

It is clear that we have before us a tremendous challenge of "donor education." Many costly efforts are made to produce papers that wind up as little more than interesting additions to libraries of conservationists. On our bookshelves you can find reports, strategies, and other documents prepared at great cost in terms of both budgets and time. One such report was the document "Our Own Agenda," prepared by the Inter-American Development Bank and UNEP; another was the strategy called "Caring for the Earth," recently drawn up by IUCN, UNEP, and the World Wildlife Fund, which contains excellent principles and actions for sustainable living, but nothing more. We simply do not need to be told over and over again what we must do; instead, all the organizations interested in the environment should start looking for funds to make environmental conservation a reality. (18)

Other studies point out that social disadvantages can result from what might be called an overly North American or European attitude towards environmental conservation in Costa Rica. Jean Carriere, for example, submits that "the U.S. influenced environmental institutions . . . tend to see environmental protection in isolation from the social context, and would soon convert Costa

Rica's forests into fenced off green museums surrounded by starv-
ing peasant families." Carriere offers no precise examples of
where this attitude has prevailed and seems to avoid mentioning
all current NGO analysis of rural sustainable development and
socio-economic park uses that dominates the conservation litera-
ture and that certainly has been the trend in Costa Rica since
the late 1980's. Nonetheless, the sentiment reflects past nega-
tive experiences with North/South "scientific imperialism" from
the first half of the twentieth century and Boza's complaint of
strings-attached contributions.

Regional NGO's are a more recent addition to the Costa Ri-
can conservation scene. In 1978, the Mesoamerican Federation of
Conservationist Associations was formed at a regional gathering
of environmentalists in Guatemala City. In 1987, the Regional
Network of Non-Governmental Conservationist Organizations was
created at the First Central American Conference for Environ-
mental Action in Managua, Nicaragua. Costa Rica participated
in both and also is home to the offices of the Plan de Acción
Forestal para Centro América (PAFT-CA). Outside of Central Ameri-
ca exist two other NGO's which specifically address environmen-
tal issues of the region. The San Francisco-based Environmental
Project on Central America (EPOCA) investigates a wide range of
conservation issues, including ones pertinent to tropical conser-
vation in Costa Rica.* The other is Policy Alternatives for

* EPOCA has been specifically involved with the environmental
consequences of civil wars in Nicaragua and El Salvador.

Central America (PACCA) which is based in Washington, D.C., and deals with many political, social, and environmental issues. Likewise there are Central American offices of UNEP and the IUCN in Costa Rica and the Caribbean Conservation Corporation (CCC) is working on its pan-regional biological corridor project out of its San Pedro, Costa Rica, office.

Opinions vary on the twenty year history of NGO involvement in Costa Rica. "Twenty years ago there were no NGO's here," Alvaro Ugalde remembered, "and now there are heaps." Eighty-odd organizations, their conservation accomplishments, and their ability to stimulate grass roots public involvement cannot be ignored, yet the redundancy of their efforts is obvious. The unified and integrated efforts of FECON may continue to yield successful results on the conservation front and may generally benefit Costa Rica's conservationist community in the long run. A criticism is that most NGO members are highly intellectual and perhaps do not represent a broad cross-section of Costa Rican society. Luko Quirós, a professor of environmental sciences at the National University, suggested in 1989 that this cultural gap could be bridged by giving more attention to local groups and projects instead of concentrating on large-scale national agendas--a goal that has been in large part realized with the proliferation of such groups in the last decade. In a different study, Bill Weinberg faulted Costa Rican NGO's for their overattention to publicity-generating rainforest issues and insufficient attention to the "ecocide" occurring on the country's agricultural

landscape. His study showed that in the mid- to late 1980's the NGO's tended to be selective in their causes, especially with the orero controversy when an estimated 1,500 gold panners (with 3,500 legal mining permits) invaded areas in and around Corcovado National Park. "The environmental movement supported their ouster," Weinberg wrote, "but did nothing about the large mining companies nearby."²²

Finally, Alexander Bonilla, for years one of Costa Rica's most active leaders in the non-governmental environmental movement but who now is a private consultant, offers a particularly poignant analysis of the present state of NGO's. He divides the organizations and their members into four categories: 1. Those who "truly believe in conservation" and work with an "environmental spirit." These are the "merchants of conservation--the environment is their business." 2. The "Post-communist" conservationists who with "failed ideologies" are working to "re-enact their own agendas." These are the people who "use ecology to seize international [financial] resources [and] to defend indigenous groups," but whose lifestyles have not changed--"they still want to drive a Mercedes Benz" and have the benefits of a capitalist world system. 3. Those who want to "maintain the status quo." They support the government and are successful in soliciting funds for conservation projects, but they are not critical, they are not activists--"they do the easy part, the nice part." He mentioned that groups like Fundación de Parques Nacionales and Fundación Neotrópica fit this category. And 4. The research

branch of the conservation movement. People or groups who fall into this category are consultants, biologists, advisors, and other "environmental experts" whose research is used as proof for the need for policy changes, but who are not always the activists lobbying for them. This is a growing group in Costa Rica. The FECON Directorio lists twenty-eight pages of private conservation consultants.

Obviously not all NGO's and their members fit neatly into the Bonilla categories, but in general it is a realistic scheme for outlining the basic structure of the environmental movement. Likewise there is duplication of efforts and overlapping of goals among the groups, but repetition can also represent the breadth of national support for particular causes. Either way, the number and scope of the NGO's reflect the "greening" of the republic, even if the hue is not always consistently even.

Campesino and Indigenous Movements

In addition to the traditional environmental NGO's, Costa Rica has witnessed the growth of campesino and indigenous movements that focus on conservation in a different, but equally important, way. These groups have advocated a return to traditional agriculture in some rural regions of the country and have tended to support sustainable development of native crops to reach that goal. They are also active in promoting organic farming and other "agroecological" practices. Some of the principal groups involved are:

- Asociación de Pequeños Agricultores de Talamanca (APPTA)
- Asociación Nacional de Pequeños Agricultores Orgánicos (ANAPAO)
- Centro Nacional de Acción Pastoral (CENAP)
- Consultoria de Investigación y Capacitación para el Desarrollo Agrario Alternativo
- Coordinadora de Organismos No Gubernamentales con Proyectos Alternativos de Desarrollo (COPROALDE)
- El Productor R.L.
- Fundación Guilombe
- Taller Experimental en Producción y Comercialización Agrícola Alternativa (TEPROCA)

In the late 1980's (and into the 1990's), however, there were barriers that prevented full scale implementation of sustainable agriculture. Carlos Brenes Castillo, a sociologist at the Technological Institute of Costa Rica, posited a four point analysis of what stood in the way: an absence of capital which prevented initial investment, problems in dispersing available technology, "lucrocentric"* legislation that favored big corporations and monocultural production, and the problem of dealing with some Costa Rican cultures that were based on subsistence farming and

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seemed unwilling to diversify.

The good news was that different sectors of Costa Rican society started to grapple with these barriers. First, to deal

* Ingemar Hedström (¿Volverán los golondrinos?, 248) defines "lucrocentrism" as "the affinity for modern societies to dominate nature and convert its ideals into a thirst for wealth and irrational development." The result of this mentality, she states, is "the pauperization of the majority of the population [and] the degradation and contamination of nature."

with the issue of capital investment, the government provided tax incentives, and banks made loan credits more easily available to farmers practicing soil conservation and other sustainable methods. Likewise, the government urged forest industries to diversify their capital investments to include locally produced smaller wood products.

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Different methods were also introduced to make new advances in technology more available. NGO's like ARBOFILIA, for example, used trained volunteers to help teach area farmers about sustainable practices. The Programa de Diversificación near Turrialba was a similar program which showed farmers how to raise sustainable crops for export. Spices, nuts, medicinal plants, cacao, and natural coloring plants were examples of such crops that saw increased international demand. Also, Costa Rica's universities continued playing a lead role in researching, publicizing, and offering training in pesticide-free farming and integrated pest management (IPM). Recently, the University of Costa Rica has been actively exploring organic farming options through its experimental program TEPROCA. In this program, IPM experiments with frogs proved successful to control insects, and the program touted chicken manure as an effective alternative to chemical fertilizers.

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What Carlos Campos labelled a "lucrocentric" propensity of the Legislative Assembly (favoring large industry and corporate agriculture) was challenged by a different grassroots approach. To counter the influence of the large companies and to

join together in a united front, many small scale farmers formed agricultural unions and cooperatives. These unions strongly promoted natural fertilizers, sustainable crops, and the elimination of agrochemical dependency. They also pressed the government for tax incentives, professional training, and market expansion

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of local crops. One of the larger of these organizations, UNSA (the National Agricultural Union), became vocal in its efforts to get national attention and government support. UPAGRA (the Atlantic Coast Agricultural Cooperative), a small scale farmers' union, also led protests to seek support for sustainable development and against chemically dependent big agriculture. Likewise, among other groups, APROADAP was established as a campesino cooperative comprised of "agroforesters for agricultural diversification."

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The campesino movements likewise have addressed the fourth barrier, cultural opposition based on subsistence agriculture. Indigenous tribes historically have been rooted in traditional agricultural practices based on a subsistence model. Actually, instead of a barrier, Indian methods were an earlier contribution to sustainable agriculture. William Soto believes that the current agricultural dilemma "demands that we look not with nostalgia, but with respect and a clear sense for the future at how Costa Rican indigenous cultures solved the problems of survival." The problem was that native tribes had been forced to acculturate into an Iberianized Costa Rica. Left without many of their traditional lands and natural resources, some tribes clung to subsis-

tence methods which have not proven sufficient for life in contemporary Costa Rica. UCR anthropologist Maria Bozzoli de Wille laments that "the Indian can no longer make use of his environment in the way passed down from his ancestors; his lands are completely dominated by systems which treat the environment differently than the traditional indigenous ways." Thus, some native groups have sought help from the campesino unions and have experimented with agricultural changes. The Costa Rican government, via its National Commission on Indigenous Affairs (CONAI), has not been consistent in its help to these native peoples. In an interview with Dr. Bozzoli de Wille the government's policies towards Indians were called "ambiguous--sometimes helping the Indians and sometimes not."

The government formed CONAI in 1973. It is an autonomous agency (not under any ministry) created to be the government's link to Costa Rican indigenous people (by CONAI sources, 36,350 people*) and to oversee the administration of the nation's twenty-two indigenous reserves. (See map, Figure 1, for reserve locations, and Appendix 5 for "tribal" breakdown and populations.) An additional law, the Ley Indígena of 1977, established impor-

* CONAI divides the indigenous communities into three "ethnic groups:" the first is composed of the "most primitive" Indians (numbering about 7,000) who continue to live in very traditional ways with little to no influence from the greater Costa Rican society or western world. They do not speak Spanish. The second and largest is the "mixed group" composed of Indians who "share traditional and modern ways" and who for the most part speak Spanish. The final group are those Indians who have "indigenous physical features" but who have completely adopted Costa Rican society. (Interview with Mario Alvarado Sánchez at CONAI, 19 July 1996.)

Figure 1: Costa Rican Indigenous Reserves



(source: CONAI, used with permission)

tant legal parameters for the reserves. It stipulated that no non-Indians could own land on the reserves, but did not appropriate the funds to buy in-holdings owned by other people. "Buying the land is very difficult," CONAI official Mario Alvarado Sánchez admitted in an interview for research on this chapter, "but we must do it to refortify the indigenous presence--to give them more land for their own survival." He went on to explain that the government has the right to expropriate lands to be added to the reserves at market value prices, but that "it just does not allocate the money to do it."³¹

Land, agriculture, and survival are three of the big reasons that indigenous people have formed cooperatives and associations aimed at, as one organization of Cabecar Indians put it, "conservation of culture and of the environment." That group, KABEKWA (Federación de Organizaciones Cabécares), also provides legal assistance and education programs to support local, smaller indigenous groups in "strengthening communal and organizational" skills. Another group, Asociación Cultural Sejetko de Costa Rica, works "to strengthen Costa Rican indigenous culture, to orient education for the protection of the environment, to defend indigenous land, [and] to promote and develop the indigenous cosmovision." It hosts training seminars and workshops in native languages on environmental education and conservation topics. The World Council of Indigenous Peoples (Consejo Mundial de Pueblos Indígenas, CMPI) works on similar projects in Costa Rica and maintains an office in San José. Its focus is on indigenous

rights and on the international PIMA (Pueblos Indígenas y Medio Ambiente [Indigenous People and the Environment]) program. Most Indian groups are affiliated with the Costa Rican Association of Indigenous Peoples (Asociación de Pueblos Indígenas de Costa Rica). CONAI's Mario Alvarado estimated that there are nearly fifty local, national, and international indigenous groups active in the country.

The problem with the well intentioned international groups, however, is that their financial support often does not reach the indigenous people. Térraba Indian leader Anselmo Flores mentioned that "CONAI really helps us a lot, . . . but the money from the government or the international NGO's does not go to the Indians." He cited cases of contributions that ended up being spent on new office equipment for agency use in San José while Indians were struggling to come up with the resources to buy such needed supplies as seeds. Some of the nation's mainline environmental NGO's also claim to prioritize indigenous conservation issues. But as Flores mentioned, "the environmental groups really don't help." His concern was that the NGO's have no power to control the growing amount of logging that occurs near the Térraba Reserve in southern Costa Rica--the greatest threat to his people's goals of long term sustainability. "We believe in sustainable agriculture," said Flores, who is the president of the Association of Integrated Indigenous Development of the Térraba Reserve, "but we do not have all the necessary resources in each Indian community, . . . it's absolutely impossi-

ble to have complete agricultural subsistence."

In a different region of the Talamancas, however, a campe-
sino organization and an environmental group are working with
Bribri Indians to overcome "language barriers, trade bureaucra-
cies, and a lack of working capital" in their struggle to remain
physically and culturally alive. The Talamanca Small Producers
Association (APPTA) and the ANAI Association (a local conserva-
tion organization affiliated with The Nature Conservancy) have
assisted the Bribri in developing organic cacao and other Tala-
mancan produce for export to the United States. APPTA has helped
construct a community based cacao processing plant and storage
facility near the Bribri reserve and has helped them enter into
trade relations with North American chocolate companies who buy
organically produced cacao. According to one report, the region
has become the largest supplier of organic cacao to the United
States. APPTA also has worked with local people in the area to
diversify their crops to include organic bananas, ginger, nutmeg,
and cinnamon and has helped link these crops with markets in
Europe. "And that's just a step," stated APPTA's Walter Rodrí-
guez, "tomorrow's product is healthy communities."

Meanwhile, ANAI and The Nature Conservancy have included
the Talamanca region in their "Parks in Peril" project which
seeks to connect La Amistad International Park and its surround-
ings into a biological corridor stretching to the Caribbean.
ANAI's Bob Mack claims that the corridor project will protect

not only the region's complex biodiversity but also the region's Indian communities which comprise sixty-five percent of Costa Rica's indigenous population. The report concludes that

with the steep rise in earnings for area farmers, the stress on Talamanca's natural environment is lessened. Today Talamancans are clearing less forest in the higher elevations, and less silt reaches the water supplies in the lower villages.

And Walter Rodríguez added that personal and environmental health are at the heart of the organic agriculture/biological corridor project: "People concerned about their own health are buying our organic produce, yet they're showing concern for the health of the Talamancans and their environment."

35

The beneficial link between national parks and indigenous communities has been duly noted by other officials as well. CONAI's Mario Alvarado observed that "many of the national parks were created near indigenous communities in the South because of their [the Indians'] good maintenance of the environment." "What does this tell us?," he asked hypothetically, "that there is a narrow relationship--the Indians kept the land well." Juan Carlos Crespi, the president of Fundación Neotrópica in the early 1990's and an avid Talamanca Mountains backpacker, had similar praise. He told David Wallace in an interview that

If we're able to support the Indian reserves and the Ley Indígena, then we have very good buffers for parks. . . . I definitely think that . . . the traditional culture of the indigenous peoples . . . [is] good for the parks. We can use Indian reserves not only as protection of a culture but also for protection of the forest. . . .

He continued by suggesting that the Indians

have found the park system to be something of a benefit to them. For instance, on the Atlantic side of the Talamancas there are a couple of sacred sites, and they were saying, 'Let's make sure these sites are inside the park, because then we know they'll be protected. If they're in the reserve, we don't have the support, so they could be destroyed.' They know that in Costa Rica the national parks have been respected. . . .--they're not paper parks. In Costa Rica, we have developed--without knowing it, really--a respect for the protected areas in general. There are a lot of times when it's not true, but generally people have an idea of parks, and respect it, and the Indians know that. (36)

Friction between Indians and government conservationists (and NGO's) sometimes occurs, however, on the issue of indigenous hunting rights. Crespo noted that it was "the only real conflict between the parks and the Indians." Many conservationists have a difficult time appreciating such Indian practices as hunting tapirs, gathering turtle eggs, and eating "quetzal soup," but as Crespo pointed out, "their hunting is subsistence, not commercial or sport, . . . it is part of their cultural roots." The real problem with hunting, he continued, is in areas outside of reserves where non-Indians hunt with specialized hunting dogs. Mario Alvarado agreed and suggested that while some Costa Ricans have accused native people of "overhunting and overfishing," the truth is that they have "maintained an equilibrium like they have done for centuries; they really know the biodiversity." Put another way, "for us, development isn't roads and bridges," Bri-bri activist Doris Ortíz told David Wallace, "it's being able to hunt a guan for dinner."³⁷

These issues reflect the long history of misunderstanding be-

tween natives and non-native people. Mario Alvarado stated that the Indians live "in a different world; their way of living is very different which made it difficult for others to understand them." The German scientist and traveller Carl Hoffman, for example, wrote in the middle of the nineteenth century that "in general, characteristic of the Indians [of Costa Rica] is the fact that money is no attractive force to them. . . .Their character is to detest work, their inclination is to spend life in the woods and wander about from hither and yon." Gerardo Budowski observed that such attitudes led to the political "conquest" of the Indians and to "many losses" of land and power via "legal trickery."³⁸

Thus, more recently, indigenous people in Costa Rica have begun to fight back--to protest certain government policies, although it has been a movement slow in the making. Alvarado stated that for the most part Costa Rican Indians are "tranquil--their nature is not to fight much, but they are very concerned about logging and mining in and around their reserves." In June of 1992, for instance, a delegation of native people from the group La Voz del Indio (Voice of the Indian--one of the largest indigenous organizations in the country) travelled to Rio de Janeiro for the Earth Summit to make known their concerns and demands. The Indians called for more "tribal" autonomy, for more control over the natural resources in their domain, and for support in the production of more traditional, sustainable crops. One month later, there was an Indian protest march in San José.

Cherokee Indians from the United States and different native peoples from Mexico and Guatemala joined with Costa Rican Indians to protest logging on Indian reserves and to demand changes in government policy toward native people.

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The Indians marching in the 1992 protest called for the abolition of CONAI. Other Indians would rather reform the agency and grant more authority to individual "tribal" governments. Such was the message of one of the largest Indian protests in recent Costa Rican history which was staged on 3 July 1996 in front of the Casa Presidencial in the San José suburb of Zapote. Called the "National Indigenous March" and held in honor of "Garabito, King of Kings; Pablo Presbere, symbol of indigenous resistance; and Benito Antonio Saldana, last King of Talamanca," hundreds of Indians converged on the San José area from many parts of the country. Mario Alvarado mentioned that for many it was the first time they had been to a city and that "they were amazed at the tall buildings and other aspects of city life." They came with three objectives: to call on the Executive Branch to strengthen CONAI by purchasing more land for Indian reserves and increasing attention to education and health, to lobby the Legislative Assembly to respect indigenous rights, and to petition the Embassy of the Netherlands to suspend Dutch investments on industrial projects that were "dividing the indigenous community" in the Talamanca region.

40

The major complaints of the protesters centered around insufficient indigenous input into CONAI's administration and the

need for more land. Guido Rojas, chairman of CONAI's governing board of directors, admitted that Indians did not have control of CONAI but that the agency was working to include more indigenous representatives. Concerning land, Rojas mentioned that the government recently had purchased 300,000 hectares (741,000 acres) to be added to the reserve system. "We can't fix what has dragged out for five hundred years," Rojas admitted, "but we have fought to buy more land for the Indians and to promote the development of their communities. The problem is that we have insufficient funds to do all that is necessary."⁴¹

Nonetheless, one of the organizers of the protest, Alejandro Swaby of the Asociación de Talamanca, complained that CONAI was "a poor administrator" since it had "done very little for the indigenous people" and that the newly acquired reserve lands were "of poor quality." Other complaints were voiced concerning title and in-holding problems of some of the new parcels added to the reserve system. The protesters denounced how in "the majority of indigenous territory, more than eighty percent of the land was in the hands of whites" and that extraction of natural resources was continuing on Indian lands.⁴²

And thus the Indian struggle continues in Costa Rica. It is symbolic that only one Spanish language newspaper, Al Día (not one of San José's larger papers), reported the national protest. This was frustrating to CONAI officials who had worked with the Indians in organizing the event. "The press gave us very little attention," Alvarado lamented, "because they usually go for

things that sell more papers." Gerardo Budowski stated that the Indians had legitimate complaints and added that the government only pays lip service to Indian laws--"they really mean nothing." Most importantly, however, is that CONAI is working toward what Alvarado called "a double sharing" between the Indians and the agency officials; they are actively working to include a greater indigenous presence into the commissions's administration. "We have to respect the indigenous mentality,"
43
he advised.

CHAPTER 10

¡ORO VERDE!: ECOTOURISM FOR ECONOMIC GROWTH

"Yo visito y apoyo los parques nacionales, ¿y usted?"

(I visit and support the national parks, do you?)

- bumper sticker on car in San José

Tourism is one of the multiple use concepts under which Costa Rican national parks and protected areas are managed. While restricted access is still a fundamental tenet of the management plans, the parks and reserves are open to the public--a phenomenon that has sparked an exponential growth of Costa Rica's tourism industry since the mid-1970's. Mario Boza remarked that the role played by national parks and biological reserves in this economic development was that of being "the base of ecological tourism and of scientific research." A variety of terms has been used over the years to describe such activity. The "biotourism," "scientific tourism," and "academic tourism" of the early years of park development and tropical research projects have been replaced in the last two decades with "nature tourism," "adventure tourism," "selective tourism," "alternative tourism," and most importantly, "ecotourism." ¹ Hector Ceballos-Lascurain of the World Conservation Union (formerly the IUCN) has described ecological tourism, or "ecotourism," as implying

a relocation to zones that are relatively little altered and contaminated, with the specific purpose of studying, admiring, and enjoying the scenic beauty, the flora and fauna, and existing cultural aspects (past and present) found in the areas. [It] implies a scientific, aesthetic, or philosophical appreciation without the ecological tourist necessarily being a

scientist, artist, or professional philosopher. A principal point is that the person who practices ecotourism has the opportunity to enter into contact with nature, in a very different form than they [sic] experience in their urban or routine lives. (2)

Early into his conservationist career, Mario Boza started to understand how concepts such as Ceballos-Lascurain's could have a positive impact on Costa Rica's economy. When the Forestry Law that allowed for national parks to be created was up for debate in the Legislative Assembly in the spring of 1969, Boza, new at his desk at the Ministry of Agriculture, wrote a guest editorial in the San José daily La República in support of the proposed law. As if forecasting the future, Boza noted that

Although from a commercial viewpoint parks might seem an unnecessary investment, they could become one of the major sources of revenues for the nation. East Africa, by having more vision than us in this field, increased its annual income from tourism by fifteen percent. What couldn't our country do, being closer to the main sources of tourists in the world? (3)

What could Costa Rica do? Create national parks, capitalize on pristine beaches, advertise viewable wildlife, promote a tropical experience "and they [tourists from all over the world] will come" and spend millions of foreign dollars. Indeed national parks and the tourism they generate did become one of Costa Rica's major sources of revenue. By 1988, for example, tourism generated \$164.7 million in foreign currency for Costa Rica making it the third largest industry in the country--often referred to as "the industry without chimneys"--after coffee (\$316.2 million) and bananas (\$248.7 million). Four short years later, however,

statistics reconfigured the numbers to show that tourism was then the second largest industry (worth nearly \$500 million) following only bananas--which had moved to the number one spot.⁴ This kind of capital influx into Costa Rica, called oro verde (green gold), was the hope of people like Luis Fournier, Mario Boza, President Rodrigo Carazo, and others in the conservationist community, to make the parks and preserves become self-supporting and assets to the general economy and therefore more widely accepted among the public.

An important question to be asked here is whether all tourism in Costa Rica is ecotourism. Carole Hill, in a study she conducted on the topic, cites a growing faction of "cocoon tourists" --those who prefer "to be sheltered from the native physical and social environments" and who would rather stay in large resorts.⁵ The problem is in semantics and statistics. Many resort tourists choose to visit Costa Rica to experience the rainforests, watch birds, and go on day hikes but like to stay in comfortable accommodations. They are ecotourists made in a different mold than the backpackers and beach campers.

Tamara Budowski, the co-founder of Horizontes Nature Tours in Costa Rica and an industry spokesperson, has created a visitor taxonomy to classify ecotourists that is useful here to clarify this issue. She finds that there are two "relatively distinct groups:" 1. Scientific Tourists: "scientists and students who travel for education or research reasons and who therefore generally remain [in Costa Rica] for longer periods of time, make

use of regular services (family restaurants and public transportation), and stay in moderately priced hotels;" and 2. Nature Tourists: "people whose passion for nature is personal rather than professional." She divides this second category into three sub-groups: A. Hard-Nature Tourists--"bird watchers, horticulturists, and orchid lovers and so forth" who travel for a "specific aspect of nature" and who are willing "to tolerate rigorous conditions . . . , less sophisticated food and accommodations, and other discomforts as long as they can satisfy the expectations of their visit;" B. Soft-Nature Tourists--who travel "to observe the nature, wildlife, and culture of an area without particular emphasis . . . and are less tolerant of discomforts, such as bath without hot water, than the previous group;" and C. the Adventure Tourists--"who are less interested in understanding the interrelations of the diverse organisms in [Costa Rica's] forests" and whose stay "is linked to the practice of some sport, such as fishing, hiking, horseback riding, bicycling, surfing, skin diving, or white-water rafting."⁶

Budowski claims that the "soft-nature" sub-group is the fastest growing sector of ecotourists. They travel "more for 'fashion' than from a genuine interest in nature" and have less knowledge and preparation for the sites and parks they visit. The "adventure tourist" sub-group also represents a robust sector of the market although she argues that it is "debatable" whether these visitors "can rightly be considered ecotourists" given that sports like fishing "consume" part of a natural re-

source and other activities may "detract somewhat from the philosophy of 'observation without destruction.'" On the other hand, catch-and-release fishing is becoming more popular and, as she notes, "more adventure tourists are becoming interested in learning about the natural history and environmental problems of areas visited." All in all, nature tourism generates the most visits to Costa Rican national parks and other protected areas, and among U.S. tourists who travel abroad, is the fastest growing type of tourism.⁷

It can be concluded here, then, that they who come to Costa Rica to spend part of their time in the natural, tropical surroundings that they do not have at home are different than the crowd who tours, say, London, Paris, and Rome to visit museums, cathedrals, and open air cafés. In fact, visitor surveys and data from ICT (the official Costa Rican tourism bureau) support these points. One ICT survey conducted in 1985, for example, showed that seventy-five percent of the foreign visitor respondents claimed they visited Costa Rica for the natural beauty, sixty-six percent claimed culture and political environment, and thirty-six percent claimed flora and fauna. The first and third categories easily fit "ecotourism" definitions. In 1987, a different study showed that visitations to the principal national parks had increased by fifty percent in two years.⁸ Clearly, it is no coincidence that tourism in general in Costa Rica has increased so dramatically since the development of national parks. The majority of those people visiting are nature tourists.

The business and investment community in Costa Rica did not fail to notice this market niche. Ecotourism agencies, resorts, and lodges abound throughout the nation. As Yanina Rovinski (from the World Conservation Union's Central America Office) noted, "when Costa Ricans want to sell something, they paint it green" and "the prefix 'eco' is featured in almost any ad dealing with tourism these days." A sampling of these noticed by the author of this study include Eoadventure Lodge, Ecotourism Costa Rica, Ecodesarrollo (Ecodevelopment), and Eco-Lodge, S.A. Prospective tourists are lured to various agencies and resorts with such slogans as one lodge's "visions of man successfully joined with nature," or an expensive hotel and country club's "excellent service in unison with exuberant natural beauty." Or "for those who love the sea, the sun, and untouched nature," one can stay at the Punta Cocles Caribbean "Jungle" and Beach Hotel (which also offers "research and education in tropical biology") or get the "complete rainforest package" at the Casa Rio Blanco. The Selva Verde Lodge offers "a naturalist's paradise . . . to enjoy the wonder of the forest;" one can stay at the Punta Leona Hotel and Club "where the virgin forest meets the sea;" and, perhaps most uniquely, the Hotel Chalet Tirol comes "with the only private rain forest and a superb French gourmet restaurant" (emphases added).

A more recent innovation is the development of "eco-lodges" in Costa Rica. According to Fundación Neotrópica's Katiana Murrillo, an "eco-lodge" (or ecoalojamiento) does not necessarily

cater to ecotourism and is not a commercial term. It is a term used to describe "a hospitality establishment, such as a hotel or lodge, for tourists concerned about environmental protection and interested in getting to know and interact with local culture." They are built with "appropriate technologies . . . recycled materials, and products native to the region, [and are] constructed in harmony with the landscape." Costa Rica hosted the Second International Forum and Seminar-Workshop on Ecolodging in 1995 which drew specialists in architecture, design, and planning from many parts of the world. The event was sponsored by the World Ecotourism Society whose president is Gerardo Budowski of Costa Rica. One of the important conclusions of the conference was that "to ensure a rational use of natural resources in a region, tourism should not be viewed as an isolated productive activity [but rather] should complement other nature friendly activities that generate income" and that encourage the participation of local residents in nearby communities.

10

The history of how ecological tourism developed in Costa Rica is multidimensional with points in the governmental, scientific, and private sectors. It starts in 1955 with the passage of Law no. 1,917 which established the Instituto Costarricense de Turismo (ICT) under the jurisdiction of the Ministry of Industry and Commerce. The law authorized ICT to promote tourism in general and granted it the power to create national parks, although it never did. Its functions included protecting and promoting historic sites and scenic areas and making foreign tourists feel

welcome "in their search for relaxation, fun, or entertainment."

Scientists working on research projects through the Organization for Tropical Studies (OTS) may not have started coming to Costa Rica in the early 1960's for fun or entertainment, but their dollars added to the foreign tourist trade and helped to launch a thriving academic tourism business. With the establishment of its La Selva and Palo Verde biological stations and its Robert and Catherine Wilson Botanical Garden, OTS created a permanent base that came to host over 2,500 foreign biologists and students by the late 1980's. La Selva can accommodate seventy-five people at a time and has recorded an average of thirty-six persons per day studying and staying there. In 1989 alone La Selva counted 20,000 person-days (a formula of number of visitors and time spent at the place). By that time these figures translated into between \$2.9 million and \$10.2 million of annual transactions in Costa Rica with \$3.4 million being directly injected into the national economy and the remainder spread out as secondary spending through an economic multiplier. In 1990 that meant that OTS accounted for two to three percent of all tourism receipts and just under .03 percent of the nation's GNP. 12

Rovinski argues that this "financial impact of OTS-related ecotourism only represents a small part of the organization's overall effect on the industry." The research and publications generated at OTS, she believes, have "put Costa Rica on the map of the ecotourist--especially scientists, but many other types of

nature lovers as well." And another study showed that sixty per-
cent of OTS visitors have returned to Costa Rica and that sixty-
nine percent have persuaded others to visit also. Return travel
alone up until 1987 accounted for \$7.51 million worth of revenue. 13

Straight west of La Selva in northwest Costa Rica's Tilarán
Mountains is the country's number one ecotourist destination: the
Monteverde Cloud Forest Preserve. This 5,000-acre private re-
serve was established in 1972 by the Tropical Science Center
(TSC). It has been expanded several times since growing to five
times its original size, approximately 25,000 acres, by 1990. In
its first few years, only scientists and university students
(primarily from the United States) visited the area to conduct
research on tropical topics and to study such rare species as
bellbirds, umbrella birds, resplendent quetzals, motmots,
trogons, tinamous, jaguars, ocelots, kinkajous, and a wide
variety of trees, ferns, bromeliads, and other plants. The
biologists' publications on the tropical wonders of the area soon
started to attract the more casual nature tourists and from then
on tourism has boomed in the region. 14 Monteverde's dramatic rise
in popularity is clear from its visitation figures:

1973	-----	300	visitors	
1978	-----	1,616	"	
1980	-----	2,700	"	
1989	-----	17,574	"	
1991	-----	40,000+	"	
1995	-----	50,000+	"	(15)

While financial benefit figures like those for OTS were unavail-
able for Monteverde, the "off the graph" visitation numbers speak

for themselves in terms of the economic impact on local communities near the preserve and for Costa Rica in general.

Meanwhile, the government enacted other laws and policies that led to an increase in the country's ecotourism. The 1969 Forestry Law was the vehicle that prompted national park designations and the preservation of scenic and historic places as well as wildlife habitat. When national parks started to be developed in the early 1970's, tourists interested in nature started coming to see them, although the parks are in many ways different from their counterparts in North America, Europe, or Africa. They are not used as vacation spots in the same way they are in the United States, have far less human intervention, and support much more scientific research. Many of the parks and preserves are difficult to reach (i.e. Corcovado, Cabo Blanco, La Amistad, Guanacaste) which entails hiking for miles on unpaved roads which are often pure mud during much of the year. And most of the wildlife preserved in the parks is nocturnal and never seen by visitors--unlike the so-called charismatic megaspecies easily viewed in places like Yellowstone, the Galapagos, Kenya, and Tanzania.

The National Parks Act of 1977 (which created the National Park Service, SPN) also was a boon to tourism as it allowed more focus to be placed on the creation and management of parks and on visitor interpretive facilities at them. The government's shift to sustainable development and socio-economic park uses in the late 1980's also meant that protected areas could "pay their way"

(as is often cited in the literature) by boosting tourism and by creating new markets for local products and services. Guanacaste National Park represents this sustainable use model quite well as alternative tourism has been incorporated into its management scheme. Environmental education initiatives also clearly have led to an increase in nature tourism as young people and adults learned more about their natural heritage, national parks, and tropical conservation, and have visited the parks as a result. And to assist the government in general and the ICT specifically, in 1987 the Arias administration created a National Tourism Advisory Commission to advise policy makers and to coordinate activities between the government and private institutions (resorts, tour agencies, lodges, etc.) on the protection of natural resources.

16

The history of these private ecotourist operations corresponds with government initiatives. Two of the "pioneers" in the field were Jack and Diane Ewing who created the Hacienda Baru near Dominical in southern Costa Rica "to give visitors nature." The Ewings had left the United States in the early 1970's to settle in this remote, tropical setting and opened up their "hacienda" to visitors for rainforest hiking, bird watching, and helping conduct wildlife studies with hired biologists. A 1993 newspaper article referred to the Ewings' operation as an example of "sustainable tourism."

17

Larger ecotourism outfits started opening in Costa Rica in the late 1970's. Michael Kaye was one of the first entrepreneurs

to market Costa Rican nature tours abroad and was instrumental in opening up the whole ecotourism industry in Costa Rica. He founded Costa Rica Expeditions in 1978 first as an agency to offer white water rafting adventures on the the Pacuare and Reventazón rivers. But the more Kaye's clients from North America and Europe enjoyed his river rafting excursions, the more he learned that they were looking for other nature tourism opportunities in rainforests, and at tropical beaches, volcanoes, and other "off-the-beaten-track" natural areas. Calling his work "pioneer lay tourism," Kaye mentioned in an interview with David Wallace that

the atmosphere that made [Costa Rica Expeditions] possible . . . was scientific tourism. The same things that make Costa Rica attractive for natural history enthusiasts to come here for two weeks made it attractive for people throughout the past two hundred years. . . . So I went out and promoted Costa Rica, and the most attractive, from my point of view, destinations in Costa Rica (which are all parks and reserves with the exception of the rivers) to the major natural history tourism marketing organizations in the United States, both the non-profit organizations like the Sierra Club and The Nature Conservancy, and the commercial ones. . . . [B]lack then you had to have a big product mix [and] I realized there was a big product mix in parks. (18)

By 1990 Kaye's firm was the largest ecotourism agency in Costa Rica. Seventy-five percent of his clients, representing some 20,000 visitors a year, came exclusively for tropical experiences and tours. One study reported that each client spent an average of \$148 a day while in Costa Rica--illustrating once again the impact of ecotourism's oro verde on the nation's economy.

Other outfits soon followed in Kaye's footsteps. Tikal Tour Operators, one of Costa Rica's larger tourist agencies, moved from general tourism to ecotourism in the early 1980's and marketed tropical experiences to foreigners with bright, colorful brochures and advertisements. Tikal's "ecoadventures" included birdwatching, natural history, rafting, biking, national parks, fishing, diving, and "trekking." Like Tikal, Central American Tours (CAT, with a jaguar as its logo) moved into ecotourism at about the same time. CAT promised "the most exciting tours to experience in Costa Rica" which included choices ranging from "jungle adventures" to tours of oxcart factories. The Rovinski study concluded that by the mid-1980's there were "over a dozen agencies" in the ecotourism market created by Costa Rican and foreign "businessmen, biologists, conservationists, and traditional tour operators."

Two individuals who started their own ecotourist facilities were Sergio Miranda, near Corcovado National Park, and Amos Bien, near Braulio Carrillo National Park. Miranda's Marengo private "biological reserve" and lodge was established to host visitors travelling to Corcovado who wanted simple cabin-like accommodations. At first Miranda thought he would market his place to scientists wanting to conduct research on the Osa Peninsula, but he soon discovered that U.S. travel agents were interested in marketing Marengo as a destination for nature tourists. Today Miranda offers "guided rainforest hikes," horseback riding, and bird watching on his 1,500 "private acres of virgin forest."

Amos Bien, a tropical biologist who came to know the Braulio Carrillo area from the time he spent doing research at OTS' La Selva, purchased land near the park and established a private reserve he named Rara Avis as an experiment in "rain forest conservation for profit." Guests at Rara Avis spend time in Bien's alternative forest crops (ornamental plants) and observe what he calls sustainable forestry practices. He estimates that Rara Avis generates approximately \$80,000 a year in revenues to the area and to the nearby community of Horquetas--making it one of the community's largest sources of income.

22

Another agency started by Ticos that deals exclusively with ecotourism packages is Horizontes Nature Tours. Tamara Budowski and Margarita Forero opened Horizontes "to serve the purpose of leading naturalists to the country's most attractive wildernesses." Their company, whose motto is "for natural encounters with tropical wonders," was established specifically to cater to scientists, students, and nature lovers and has become one of the major nature tour companies in the country. Budowski spent much of her childhood growing up in Switzerland where her father, Gerardo Budowski, was director of the IUCN. Rovinski reports that the younger Budowski enjoyed the beauty of the Swiss Alps and countryside but was "astonished" by its lack of wildlife. Returning to her native Costa Rica, she witnessed the combination of wildlife and beautiful scenery and decided to enter the ecotourism business.

23

In her essay "Ecotourism Costa Rican Style" (originally pub-

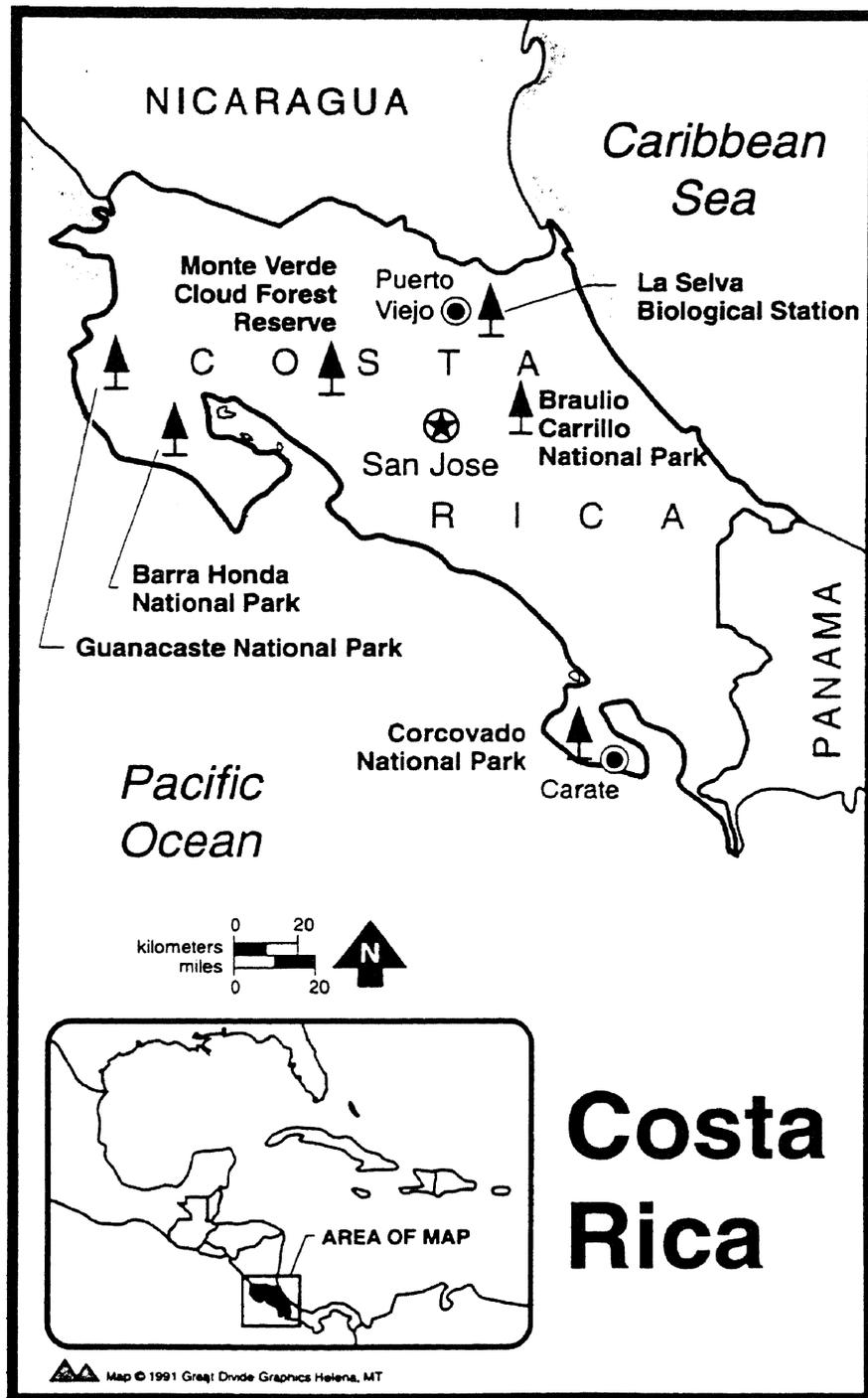
lished in Spanish as "Ecoturismo a la tica"), Tamara Budowski cites how ICT and the national airline LACSA became two of the country's biggest ecotourism promoters in the 1980's and 90's. ICT launched a major promotional campaign with the slogan "Costa Rica [with a fuscia orchid draped between the two words] is . . . natural." It printed thousands of large posters picturing some of the country's major national parks and scenic wonders and tens of thousands of brochures that were sent to travel agencies and tour companies throughout the world. ICT's aggressive "Escape to Paradise" advertising campaign in the 1980's brought thousands of foreign tourists, as Tom Barry has written, "seeking a peaceful tropical nirvana." And in the early 1990's ICT began a campaign aimed at bringing in more tourists during the off-season (Central American winter, May to November) which is usually quite rainy. Avoiding the rain image, ICT concentrated on that time period being the "green season" and printed literature welcoming tourists to "go for adventure in the Kingdom of Green--it's even more exciting in the green season." LACSA likewise published brochures and booklets extolling Costa Rica as a haven for nature lovers and dedicated ample space in its in-flight magazine LACSA's World to articles and advertisements on ecotourist establishments.

24

(See map, Figure 1, for principal ecotourism destinations.)

ICT and the National Park Service have always had a rather tenuous relationship. Over the years ICT certainly has promoted the national parks, but has not been involved in lobbying for park expansion, buffer zone protection, or any of the other eco-

Figure 1: Principal Nature Tourism Sites in Costa Rica



(Source: Yanina Rovinski, "Private Preserves, Parks, and Ecotourism in Costa Rica," in Tensie Whelan, ed. Nature Tourism: Managing for the Environment, Washington: Island Press, 1991, 40.)

logical mainstays of the parks' designations. Likewise conflicts occasionally have arisen between the two agencies regarding tourist zones (hotels and resorts) in and around natural areas and the whole question of defining ecologically-friendly tourism.

Also, there has been disagreement among park service personnel as to the role tourism should play in national parks. Mario Boza has generally supported it. As early as 1972 he requested information from Gerardo Budowski at the IUCN on how "scientific tourism operated in Africa" and how it could be applied to Costa Rica. And he is on record having stated that "the appeal of Costa Rica to people seeking to learn about and experience the wilderness is extraordinary. . . . Promoting this kind of tourism can demonstrate how, through conservation, we can put food in our mouths and make conservation a more attractive idea to politicians and [other] people alike." Nonetheless, there are few records showing much interaction his office ever had with ICT. Alvaro Ugalde generally opposed park based tourism when he was SPN director. In 1982 he told a reporter for the Tico Times,

I will not resort to tourism as a way to maintain parks. Management of the ecosystem in parks in perpetuity is the Park Service's main goal. My personal goal is to get public and governmental recognition of the parks program, so that when the average person says 'park,' he doesn't just think recreation. The word should call to mind the complex of values associated with maintaining life support systems within the parks. (26)

Ugalde later mellowed somewhat on this attitude. When he was between government positions in the late 1980's, for example, he served as a national parks guide for a San José based ecotourist

operator. And back at the helm as SPN director in 1992, he told this author that one of his most important roles was "to convince the legislature that national parks were a great help to the economy." Like with Boza, however, there are few records of ICT-SPN interactions during Ugalde's government tenure. Yanina Rovinski argues that ecotourism has never been an ICT high priority. The agency has promoted conventional tourist attractions like beaches and resort hotels. She goes on to say that "incentives provided for tourism investment by ICT rarely apply to the small kinds of development needed for nature tourism." Worse, conservationists and tourism officials have been unable to get together on defining what the ICT's role should be, "but it appears clear that it will remain on the sidelines."²⁷

Whatever ICT's involvement, ecotourism has continued to grow in a variety of market sectors. In her essay on the subject, Tamara Budowski disentangles some of the demographics of the industry. She argues that most ecotourists in Costa Rica are foreign "baby boomers," "yuppies," and "DINKS" (couples between their twenties and forties with double income, no kids) and that the market is rapidly expanding for retired adults. Likewise, national park use is becoming more popular with Costa Ricans, although Budowski admits that the visitors come from a well educated, middle or upper class segment of society."²⁸

An earlier study conducted by geographer Susan Place showed that "the majority of visitors to most Costa Rican national parks [were], in fact, Costa Ricans" which reflected their "increasing"²⁹

domestic interest in environmental issues and conservation of the country's unique biological endowments." During the early years of park development this was especially true since foreign tourism had not yet begun to expand into the Costa Rican market. At Poás Volcano, the country's first national park, for example, over eighty-two percent of the visitors between 1974 and 1978 were from Costa Rica. But while Poás is rather close to the major population centers of the Central Valley, records at parks at considerable distance from San José and without easy, drivable access also showed a Costa Rican visitor predominance. Susan Place found that the records at Tortuguero National Park revealed that from 1980 to 1985 2,850 Costa Ricans visited the park compared to 2,600 foreigners. And records at the Los Patos entrance on the far northwest side of Corcovado National Park (accessible only by foot three hours up the Rincon River or by path through the heart of the park) showed that of the 1,750 visitors registered there, seventy-two percent (n = 1,260) were Costa Ricans.³⁰

But as the data in Table 1 show, park visitations by Costa Ricans have hovered around half of the total in the past five years. Moreover, there has been some disparity between the parks Costa Ricans have selected to visit and those selected by foreigners. As Table 2 indicates, Costa Rican visitations range from as low as 3.6 percent of the total at Tortuguero National Park (as opposed to the Susan Place study of the mid-1980's when Ticos surpassed their foreign counterparts at that particular park), to 83.8 percent at Guayabo National Monument. And despite visita-

Table 1: Costa Rican vs. Foreigner National Park Visitations
 (Compiled from annual records, SINAC, Departamento
 de Mercadeo, July 1996)

	<u>Total no. visitors</u>	<u>Foreign visitors</u>	<u>Costa Rican visitors</u>	<u>Costa Rican pctg. of total</u>
1992 -	639,753	338,109	301,644	47%
1993 -	772,025	404,342	367,683	47%
1994 -	700,434	378,286	322,148	54%
1995 -	614,081	251,740	362,341	59%
1996*-	342,711	147,589	195,122	57%

*First six months only.

tions to the Los Patos station of Corcovado National Park, overall Costa Rican visitations to that park as a whole represented only 17.7 percent of the total. This seems to have been the case at other more "remote" parks also, for example at Cabo Blanco National Park where Ticos represented only 21.8 percent of its total visitors, but not at the most remote and expensive to get to park, Isla del Coco, where national visitation was nearly half the total. At the top three most visited national parks, Volcan Poás, Manuel Antonio, and Irazú, Costa Ricans accounted for nearly half of the visitations.* The same is true for national visits to the private reserve of Monteverde. In 1978, for example, 49.5 percent of the tourists there were Costa Rican.

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 * The great disparity between national and international visitors at Carara Biological Reserve is explained by the fact that large cruise ships often dock at Puntarenas and allow their North American and European passengers to have the opportunity to be bused to the park to view scarlet macaws and to have a tropical rainforest experience.

International tourism rapidly expanded in Costa Rica in the late 1980's. Industry officials suggest that the boom started in 1987 when President Oscar Arias was awarded the Nobel Peace Prize which drew a great deal of international media attention on Costa Rica as a stable democracy in a beautiful tropical setting in the

Table 2: Costa Rican vs. Foreigner Visitations to Selected National Parks and Equivalent Reserves, 1992 to mid-1996
(Compiled from annual records, SINAC, Departamento de Mercadeo, July 1996)

	<u>Total no.</u>	<u>Foreign</u>	<u>Costa Rican</u>	<u>Costa Rican</u>
	<u>visitors</u>	<u>visitors</u>	<u>visitors</u>	<u>pctg. of total</u>
Tortuguero Nat. Park	- 81,570	78,572	2,998	3.6%
Carara Biol. Reserve	- 159,167	132,694	26,473	16.6%
Corcovado Nat. Park	- 57,602	47,394	10,208	17.7%
Cabo Blanco Nat. Park	- 38,412	30,040	8,372	21.8%
Man. Antonio Nat. Park	- 655,907	412,928	242,979	37.0%
Isla del Coco Nat. Park	- 7,949	4,161	3,788	47.6%
Volcan Poas Nat. Park	- 811,712	372,301	439,411	54.1%
Irazu Nat. Park	- 538,320	207,670	330,650	61.4%
Santa Rosa Nat. Park	- 185,729	63,309	122,420	65.9%
Tapanti Nat. Wildl. Ref.	- 99,931	22,640	77,291	77.3%
Guayabo Nat. Mon.	- 94,644	15,287	79,357	83.8%

midst of a war-torn region. The image was further enhanced the next year when Costa Rica hosted the Twelfth General Assembly of the IUCN which drew delegates and press coverage from all over the world. ICT records based on tourist arrivals at San José's Juan Santamaría International Airport show that the number of foreign tourists in Costa Rica more than tripled in the decade between 1986 and 1995--from 260,080 to 784,610 arrivals. Table 3 reveals that the greatest number of these foreign travellers hailed from the United States followed by Central America, Europe (dominated by tourists from Germany, Spain, and Italy), and Canada. (See Appendix 7 for breakdown by country of international travellers.)

The large influx of foreign travellers has resulted in the economic boon (as noted in the financial figures reported earlier in this chapter) dreamt of by the tourism promoters. The goal, according to Rodrigo Gámez, former environmental advisor to President Arias, was "to make the conservation idea attractive to those Costa Ricans who fear[ed] that conservation would inhibit their economic prospects." In her study on the impact of national park development in Costa Rica, Susan Place warned that tourism had "to be organized in such a way that a large number of local people [would] benefit from the influx of tourists rather than merely bear the burden of its costs." Some residents living near Tortuguero National Park, for example, at first experienced a general decline in their standard of living when the park was created due to less available farm land, firewood, and game meat,

Table 3: Arrival Statistics of International Travellers, Juan Santamaría International Airport, 1986 to 1995
(Source: ICT, Departamento de Estadística, July 1996)

ZONAS Y PAISES	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
GRAN TOTAL	260,840	277,861	329,386	375,951	435,037	504,649	610,591	684,005	761,448	784,610
AMERICA DEL NORTE	93,105	104,841	123,551	153,112	191,284	223,126	274,061	302,741	332,602	349,307
Canadá	5,551	7,310	13,037	20,285	30,892	37,187	42,029	44,236	49,091	41,898
Estados Unidos	81,722	90,581	102,822	124,264	150,224	173,626	217,693	242,546	263,568	287,434
México	5,832	6,950	7,692	8,563	10,168	12,313	14,339	15,959	19,943	19,975
AMERICA CENTRAL	106,825	108,543	124,728	135,376	139,913	164,809	187,790	193,512	221,384	218,023
Guatemala	9,663	11,095	12,251	14,977	14,695	16,079	19,010	22,664	22,207	24,305
El Salvador	6,408	6,838	7,689	8,359	8,986	11,299	15,668	18,248	21,755	22,340
Honduras	8,687	9,429	10,203	10,066	8,894	10,475	13,238	12,930	14,925	15,876
Nicaragua	26,437	23,537	31,568	38,812	49,395	73,558	78,011	81,875	107,851	102,557
Panamá	55,630	57,644	63,017	63,162	57,943	53,398	61,863	57,795	54,646	52,945
CARIBE	3,957	3,438	5,103	4,387	4,192	4,679	5,344	6,442	7,425	7,125
AMERICA DEL SUR	21,272	21,768	26,150	28,644	32,575	32,891	42,657	52,921	54,043	58,600
EUROPA	29,026	32,354	41,396	45,355	57,177	67,319	88,301	113,943	129,580	132,057
OTRAS ZONAS	6,655	6,917	8,458	9,077	9,896	11,825	12,438	14,446	16,414	19,498

Place reported. Over the years, however, the economy of the area as a whole increased through "tourist trickle-down" businesses. "As a result", Place concluded, "both the people and the environment may face a more secure future."* Former Ministry of Natural Resources official Eric Ulloa referred to this as "arriving at a central line" between the long range advantages to the environment and the economic benefits to local communities. Moreover, the government raised foreigners' entrance fees to national parks in the summer of 1994. For years international visitors paid the almost ridiculously low fee of \$1.50 per person; SPN raised it to a more practical and revenue-producing \$6.00 a head which helped to cover expenses and maintenance.

But the influx of tourists also has created an economic/environmental dilemma. What Carole Hill has called "the tug between preservation and profit," and Tamara Budowski has referred to as ecotourism's "mixed blessing," are the dangers of oversell. With the millions of tourist dollars have come problems with sewage disposal, waste management, and inadequately regulated zoning. Because Costa Rica's rich coasts are attracting hundreds of thousands of tourists a year, environmentalists are worried that shorelines will become littered with cheap hotels and beach

* When Place conducted her study, the parks themselves rarely employed many locals as guards or wardens, as she noted, in fear they might allow friends and relatives to poach. They did create jobs for others from different parts of the country, however, with resultant spin-off benefits to the local economy. With the government's recently restructured and decentralized conservation system, SINAC has initiated efforts to hire more local people in and around the parks.

bars like those of Spain, Portugal, or Mexico. Their fear is grounded in the fact that, as the Tico Times reported, "only seven percent of Costa Rica's coastlines have any kind of regulatory plans." Roxana Salazar warns of health problems caused by the increase of garbage at beaches and other public places and of the effects on marine ecosystems of increased waste flowing into the seas. Her studies on tourist areas indicate increased levels of noise pollution caused by the rise in airline and vehicular traffic, an increase in "crime, drug addiction, and prostitution," and negative impact on the flora and fauna in and around areas of greatest tourist presence. The increase in foreign-owned and operated resorts likewise concerns her as a possible impediment that would preclude some of the promised economic benefits. The Tico Times article thus concluded that tourism is becoming the "the goose that laid the golden egg" in that the government has few comprehensive plans for tourism management. ³⁴

The dilemma came to a head in 1991 when the French firm Euro-caribena planned to build a large resort complex on the Caribbean near Gandoca-Manzanillo National Wildlife Refuge in extreme southern Limon province. Gandoca-Manzanillo is home to some of Costa Rica's finest Caribbean beaches and protects Costa Rica's largest and most diverse coral reef system not far off shore. The planned resort, according to University of Costa Rica marine biologist Jorge Cortés who completed a study of the area, however, would cause severe environmental consequences to the coastal and off-shore ecosystems. Moreover, construction of the com-

plex was proceeding without Eurocaribefña having conducted any planning studies on how it would mitigate the environmental impact--a scenario that Cortes called "pirate development." Cortes' study, as reported in the newspaper La Prensa Libre, recommended "absolute protection" for the fragile coral reef system, beaches, and mangrove swamps which meant eliminating contaminant-heavy run-off from streams and rivers that drained into the Caribbean from that region.

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Adding to the problem was Eurocaribefña's plan to pipe waste directly from the resort to the open Caribbean--a fact discovered by novelist/environmental activist Anacristina Rossi who owned land near the project under construction. "It's not possible that they were permitted to construct a drainage system without any knowledge of the soils, and that [drainage] from the septic tanks would go directly to the sea," she told a reporter for La Prensa Libre which ran a picture of the sewage ditch. Enraged, Rossi filed a complaint with the Forestry Directorate (DGF) and the Special Commission on the Environment and sent a copy to Mario Boza who at the time was Assistant Director of the Ministry of Natural Resources (MIRENEM). In her letter, Rossi demanded answers to a variety of questions related to Eurocaribena's designs. She wondered how what was supposed to have been a small development of only "two charming bungalows" ended up as a major resort project. She inquired "what DGF was planning to do with the sewage and soapy waters from a restaurant one hundred meters from the sea--how they would not contaminate the beach and the

country's most important coral reef. . . ." She also explained to the newspaper reporter that other residents of the area were offended by the plans. She said that the local people were of the opinion that "we can't go from being landowners to employees and let them destroy our land, too." She also believed that the Gandoca-Manzanillo situation represented Costa Rica's larger problem of "tourist development without planning."

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Anacristina Rossi went on to write a short novel called La loca de Gandoca that dealt with the issues surrounding the controversy at Gandoca-Manzanillo. Jorge Cortés mentioned in an interview that Rossi's descriptions of the event in her novel were "exactly right" although she changed the names of the people involved. Cortés remained closely involved with the situation and was disgusted at the Calderón administration's response. MIRENEM director Hernán Bravo ended up supporting Eurocaribeña, a move that made Cortés wonder "who got to him." The resort was built, but thanks to people like Rossi and Cortes, with stricter environmental standards.

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A similar scenario unfolded a few months later on the opposite side of the country--at Tambor on the Nicoya Peninsula. There, the Barcelona based investment firm Grupo Barcelo was proceeding with plans to construct a large beachside resort complex on the Pacific Ocean. To do so meant filling in a mangrove swamp, razing part of a tropical forest, and bulldozing the side of a mountain that faced the sea. The fact that ICT supported the project enraged conservationists. Representatives of the

environmental group ASCONA sought a probe of the resort project and threatened to file suit to stop it. Speaking on behalf of MIRENEM, Mario Boza even went on Costa Rican television and admitted that there had been "a lack of coordination" between MIRENEM and ICT on the issue. But despite these words and conservationists' angst, Grupo Barcelo was never stopped from building the resort.

The Tambor controversy, however, ended up generating some negative international press for Costa Rica. Two German environmental organizations, Robin Wood and Pro-Reganwald (the latter meaning Pro-Rainforest), awarded their annual "Environmental Devil Prize" in 1993 to ICT Director Luis Manuel Chacón for his support of such an environmentally unfriendly project. The prize, which included a trophy of a devil emblazoned with the words "for the most hypocritical ecotourism, to the government of Costa Rica," was handed to Chacón in person on a visit to Germany he was making, ironically, to promote Costa Rican tourism to Europeans. A shocked Chacón was quoted in La Nación as saying that he was "pretty astonished" by the award but that he was trying to "conceal his disapproval." The article quoted an ASCONA spokesperson who said that the prize was "ridiculous and offensive." The Tico Times quoted Chacón as having stated that the award "was based on information coming out of Costa Rica, but it's totally erroneous and tries to hide the efforts that we are doing in different fields." He went on to point out that ICT had forced Grupo Barcelo to halt construction on a different

project that was "within the inviolable fifty-meter mark of high tide." The Catalonian firm there had been accused of dredging rivers, removing beach sand (illegal since all Costa Rican beaches are supposedly public land), and filling in a swamp. 39

The dilemma is also very visible in places like Manuel Antonio National Park and Carara Biological Reserve which have suffered because of overcrowded conditions. Table 2 shows how nearly 150,000 people a year visit Manuel Antonio--one of Costa Rica's smallest national parks. Michael Kaye of Costa Rica Expeditions lamented that "people pollution" at Carara had caused an overall degradation of the tropical forest experience there with busloads of tourists clamoring to catch a glimpse of scarlet macaws. Yanina Rovinski reports that these conditions have caused some conservationists in Costa Rica to call for carrying capacity studies to be performed at national parks. "A park is like a movie theatre," she writes describing this philosophy, "if its capacity is 150, visitor 151 will not fit in and will endanger the security of the others." Managers at the Monteverde Cloud Forest Reserve completed carrying capacity studies when tourism there got out of hand in the late 1980's. In response to their findings they created different trails to help them manage the flow of hikers and constructed improved visitor facilities. 40

A newer dilemma that has developed is the recent surge in privately (often foreign) owned nature reserves, forest preserves, and "rent-a-parks." Some areas charge visitors up to

seventy five dollars a day which precludes use by most Costa Ricans. Fencing in these private reserves worries conservationists, but the government to date has not regulated the industry and supports the influx of capital it brings. AECO director Alvaro León said that the "tendency to privatize" reserves was "very dangerous" since the government lacks the regulations, manpower, and financial resources to monitor them. World Ecotourism Society President Gerardo Budowski claimed that in Costa Rica the private reserves represented less than one percent of all land protected in the country--most of which are adjacent to lodges and hotels that cater to nature tourism. In some ways they are positive, he argued, because they can provide buffer zones or be part of biological corridors and are better than deforested livestock pastures. The problem according to Budowski, however, is that some tend to be irresponsibly managed due to the lack of regulations. He cited the "dangerous" practice of "feeding wildlife" which can lead to a "false view of what a wild animal is." And forestry ecologist Luis Fournier mentioned in an interview that some private reserves were not managed for ecotourist use, but instead were strictly for ecosystem conservation and were good for helping to expand corridors for wildlife habitat. He lauded the University for Peace's forest reserve as a noteworthy case in point. And if nothing else, he added, the trees in the private reserves or ecotourist complexes were at least adding to the oxygen supply and increasing the hydrologic potential of the region where they

are found. Likewise, Fournier noted, many of the private reserve owners and ecotourism lodge operators have "a great love for nature" and know the ecology of their area.

Roxana Salazar agreed and claimed the whole private reserves dilemma was difficult. Jorge Cortés was of the same opinion but argued that they were "better than nothing, [and] better than development." Some reserves like Monteverde, he said, were well managed, but others were not--"what I don't know [about how they are managed] is what really worries me." To assist owners in this regard, environmental consultant Roberto Wells founded the Conservation and Management of Private Forests Association (Asociación Conservación y Manejo de Bosques Privados, or COMBOS) in 1992. COMBOS serves as a network of private reserve owners, implements programs on the industry's developments, and promotes ecological forest management. Only recently has MIRENEM (now MINAE) issued some policy guidelines and those are for private wildlife reserves. The regulations require prospective entrepreneurs to complete a formal application, accept that their facility be monitored by government conservation officials for an initial five year period, and abide by all national wildlife laws.

A related issue is that of private reforestation plantations. Since the 1970's teakwood plantations have sprouted up all over Costa Rica's lowland humid regions (on the Pacific and Caribbean sides). Typical of the industry is Reforestadora Buen Precio, S.A. in Limón province which advertises for people to

"Invest in Green Gold, tomorrow's most valuable asset: land/nature." Buen Precio's literature asserts that teakwood is a "promising answer for the XXI Century," especially since Costa Rica is the "ecological capital of the world" replete with all the "geographical, political-cultural, and social-economic conditions that are basic to fully guarantee, long range sustainable development." It states that Buen Precio believes in "integration of industrial reforestation" and that the plantation "has always been closely involved with proper management of woods and lumber"--making it "a new model for development and secure investment." Pictures of the plantations show neat, even rows of the tall, even height, quick growing teakwood and show tropically attired young women warmly embracing the trees. ⁴⁴

But while trees planted in straight rows that will be cut for export teak markets hardly seems like a project of ecological restoration, Luis Fournier admits that the trees at least retain the soil that otherwise may have eroded due to deforestation. "It's a complex problem," the forestry specialist suggested, the teak plantations "help with the soil now, but eventually the soil deteriorates with more cuttings." ⁴⁵

A final analysis of the long range effects of ecotourism and private reserves awaits time and future research. Conservationists and ecotourism proponents agree that the Costa Rican government needs a well regulated set of guidelines to monitor the industry. Roxana Salazar, Yanina Rovinski, and Tamara

Budowski all conclude that ecotourism cannot go unplanned or unchecked and that regulations for proper waste disposal, zoning, and environmental impact assessments are sorely needed and must be enforced. Rovinski writes that some ecotourism operators have come up with their own self-imposed regulations:

Nature-oriented tours are to be led by biologists or other natural history experts. Groups are to be kept small and manageable. Carrying capacity has to be respected for protected areas. Accommodations should be built at a considerable distance from parks and reserves, and money has to be spent as close to the wildlands as possible, in order to engender local support.

The problem, she points out, is that the rules are self-monitored with some regulations being respected and others not while "ecotourism continues to grow without planning or oversight." Likewise ICT has been incapable of regulating the industry. Rovinski refers to the agency as a "mammoth institution" preoccupied with such issues as transportation, infrastructure, foreign investment, and advertising.

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Some individuals and groups have called for improved ecological education for tourists and ecotourism operators. To that end, the Costa Rican Audubon Society hosted a series of "ecotourism seminars" in 1992. The group's director, Richard Holland, stated that the ecotourism "buzzword" was actually "nebulously defined" and "largely uncontrolled" and thus he called for greater monitoring of the tourism companies. Calling tourists "the natural allies of conservationists," Holland also believed that they should be properly educated for visiting Costa Rica.

The Audubon Society thus issued an eight point Code of Environmental Ethics for Nature Travel (see Appendix 8) which advocated responsible visitation with the overall goal of minimizing human impact. Many travel and tourism agencies in the country have promoted the code and have encouraged their clients to report violations.

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A common tourist complaint concerns Costa Rican roads. Indeed the country's "highways" are among the worst in all of Central America in terms of potholes, broken pavement (or no pavement), and general disrepair. It takes hours to go short distances. An editorial in La Nación in June of 1996 stated that the Pan-American Highway between San José and Puntarenas was so bad that it was starting to have a serious negative economic impact on the Pacific Coast tourism industry. Even President José María Figueres alluded to the bad roads in a televised national address in July of that year. Saying that he was "proud" of the country's 36,000 kilometers (21,600 miles) of roads, he pointed out that "of course now we have to concern ourselves with their maintenance."

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The dilemma surfaces, however, in that improved roads would bring even greater numbers of tourists to already overcrowded and overstressed national parks and preserves. The issue was debated by Monteverde officials as tourism agencies and foreigners complained of the long, bumpy, dusty road from the main highway to the cloud forest preserve. After considerable consideration of the matter, the Monteverde officials nixed the plans to im-

prove the road as they were already dealing with overly high tourist numbers. Roads were also the topic of a 1988 meeting of the Costa Rica-American Chamber of Commerce (AmCham). AmCham officials invited Jeb Bush (son of the former U.S. president) to advise them on how to petition the U.S. Agency for International Development (AID) for more tourism loans. Bush suggested that the Costa Rican government build more roads to beaches to hustle the tourists to the resorts. And finally, the roads dilemma surfaced during the legislative debates on the 1996 Forestry Law. Diputado Victor Hugo Núñez from Limón province argued strongly for roads to be constructed through Tortuguero National Park to the town of Tortuguero--accessible only by boat or air. "Sure, it's great; those who argue against the roads and have and enjoy their yachts and planes and their very luxurious transportation equipment," Diputado Núñez complained on the floor of the Legislative Assembly, "but the poor, humble folks there have to travel three hours on their old boats." He told the Assembly that it was his "responsibility" to see that Tortuguero "gets a road like every other Costa Rican city." No roads have as yet been constructed through the swampy plain.

Promoting nature is, as Alexander Bonilla has called it, an "unsubstitutable capital" resource for Costa Rica. But while "conservation for profit" is inadequately regulated now, the visible benefits to education, enjoyment, conservation, the economy, and as a vehicle to instill a sense of an environmental ethic can be the products of ecotourism and can certainly be con-

sidered part of the many factors in the building of a green republic. A balanced approach is incumbent for an ecologically successful program, but Tamara Budowski correctly concludes that "many people believe that if Costa Rica cannot, then no country will be able to succeed in . . . having tourism and conservation co-exist."⁵¹



Figure 2: The Parismina Lodge, near Tortuguero National Park
(Author's photograph)

CHAPTER 11

THE NATIONAL BIODIVERSITY INSTITUTE

We need to change people's attitudes to nature toward a greater level of complexity. To change attitudes, we need to know what we have, because one doesn't value what one doesn't know, and the tragedy of tropical forests has been that they have had no value more than the wood in them and the land they grow on. . . . [L]et's prove that we should conserve the biodiversity of the country because we know it and use it.

- Rodrigo Gámez (1)

In analyzing the conservation history of Costa Rica, it is fitting to conclude with a brief discussion of the most recent addition to the environmentalist make-up of the country: the Instituto Nacional de Biodiversidad (National Biodiversity Institute, or INBio). A discussion of this unique institution is included here because it is a direct result of the use of national parks and forests in the development of a national environmental ethic. In this case, the conscious protection of natural resources for the future environmental stability of the country starts with knowing (and understanding as much as possible about) exactly what organic resources exist.

According to an INBio brochure, the institute was planned by an inter-institutional commission that President Oscar Arias named in June of 1988

to specialize in understanding and helping society use . . . Costa Rica's extraordinary biodiversity. There are at least a half million species of organisms in Costa Rica . . . however, we understand only a minute fraction of these species. What they eat, what they do and how they do it, [and] how they can

fit into the agroecosystem diversification that Costa Rica must sustain, are unopened books written in strange languages. . . . By understanding biodiversity, we can protect it, manage it, and help society use it. . . . In this manner we confront the gravest threat of this century and the next--the potential loss of tropical biodiversity. Simultaneously we promote the growth of a society whose ethical and moral values are rooted in the respect for nature and the wise management of natural resources. (2)

Prior to INBio's creation, biological and social scientists often had cited the need to inventory biological resources for improved resource management in Costa Rica.³ That officials in Costa Rica developed a way to do this, the first tropical country in the world to do so, speaks to their sincere determination to secure the environmental welfare of the country. Or as internationally acclaimed botanist Peter Raven put it regarding INBio, "once again Costa Rica has emerged as one of the world's leaders in tropical conservation."⁴

To accomplish this goal, INBio was established as a private organization as recommended by the Arias commission. The INBio brochure explains that

[t]he current framework of government structures did not seem appropriate for many of the INBio tasks--such as the magnitude and complexity of the inventory, the publicizing of Costa Rican biodiversity, the urgent demand for speed, and the critical need for a flexible organizational structure designed for the task. (5)

Hence, in October of 1989 the INBio Association was legally registered with an Assembly of Founders and a Board of Trustees. The board hired former University of Costa Rica (UCR) botany instructor and Fundación Neotrópica president Rodrigo Gámez (who earned

a doctorate in plant pathology from the University of Illinois) as INBio director. To house the institute and to secure a place to perform laboratory and data storage operations, the board built a large facility in Santo Domingo, northwest of San José. A visit there in June 1992 revealed a busy, working, and very clean and efficient atmosphere. Staff members were friendly and eager to share information about INBio's activities.

Rodrigo Gámez has been an outspoken and well publicized INBio proponent. His background leading up to his appointment as its director led him to understand the relationship that protected areas should have in the overall social economy of the nation. He had worked closely with the national parks system via his service as an advisor to Fundación de Parques Nacionales and co-founder and president of Fundación Neotrópica. He explained that he got to know Mario Boza, Alvaro Ugalde "and others of what might be called the 'conservation cartel'" who put him to work on fundraising and guiding visitors to national parks. "I was very impressed with what had been created there, by Mario as initiator and Alvaro as consolidator," Gámez told David Wallace in an interview,

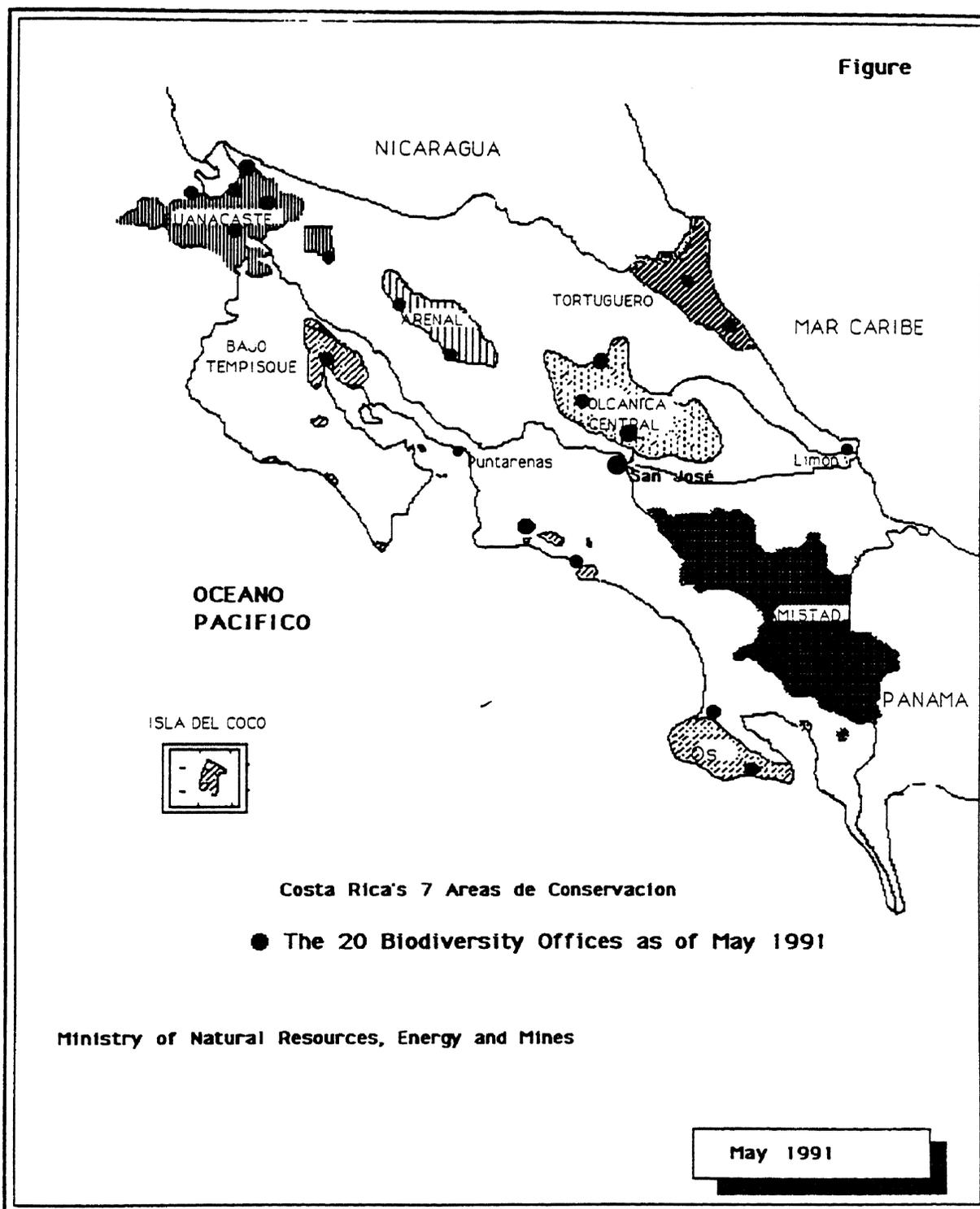
[b]ut I asked myself, 'Why do we want parks? What do we want to do with them, really? Make them a part of Costa Rican society? Are parks really part of us, or a luxury, something for the few? . . . The Park Service was like an army, invading these strange countries, living on very low salaries under poor conditions, but supported by a mystical sense of purpose But I felt it was essential to see things in the whole socioeconomic context. The problem of parks wasn't biological, it was social, political, and economic, and if we didn't

pay attention to that, the parks wouldn't have any future. (6)

Gómez also has written that "preserving areas does not guarantee perpetual conservation" and that the environment will only be protected by a "multiparticipatory effort . . . conducted by the people responsible for and expected to benefit from the conservation of their own biodiversity." To put this belief in motion, he developed a three point credo for INBio: save biodiversity, know what has been saved, and put it to work for the improvement of society.⁷

Protecting biodiversity in Costa Rica is not necessarily a new phenomenon. Costa Rica's system of national parks and equivalent reserves has saved countless species from the extinction records. INBio, however, seeks to inventory the species and preserve representative voucher specimens of each. It uses the national parks and forests to find the species and has developed twenty biodiversity field offices to aid in their processing (see Figure 1). The institute's mission is to stem the tide of species endangerment in Costa Rica, which according to a Fundación Neotrópica and Conservation International study includes 157 "critically endangered" species, 325 "very threatened" species, and 278 "rare and vulnerable" species. But while Costa Rica was the first country in Central America to be party to the CITES treaty on listing and prohibiting the taking and trafficking of endangered species in 1974, poaching and illegal exports have continued. INBio is working to save what is left

Figure 1: INBio Biodiversity Stations



(Source: INBIO office, Santo Domingo, Costa Rica)

and to research and publicize the species' interconnectedness
8
with the environment.

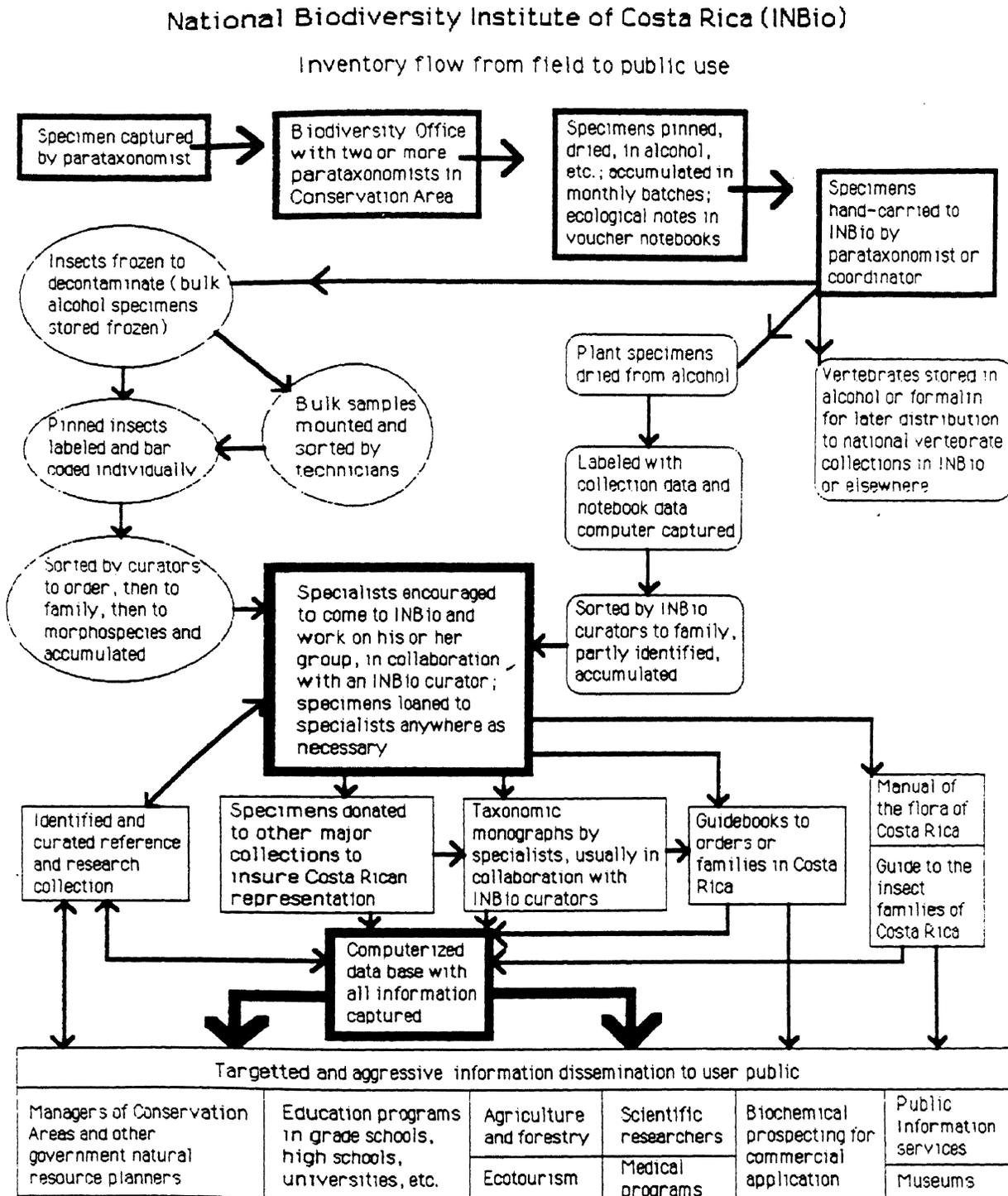
The second step, knowing what's been saved, involves what journalist Chris Wille referred to as a "Noah's ark--where INBio is identifying and cataloguing every living thing in the country." Gámez's goal is to have this completed by the year 2000. While this may seem insurmountable, especially considering Costa Rica's small number of field biologists and professional systematists, INBio developed an innovative program using "parataxonomists" and local assistants. Parataxonomists are not trained scientists; they are university students, government employees, or most often local individuals who live near the wildlands being studied, who become salaried collectors of flora and fauna. They work closely with professional taxonomists and what they collect is processed into the INBio data banks. This system of using lay people to assist in collecting biological data was created by Daniel Janzen as part of the push in the 1980's for socio-economic park uses and sustainable development
9
in Guanacaste province.

By the early 1990's, INBio employed over thirty such individuals who were required to take a six month training course in botany, entomology, and ecology. Chris Wille asserted that these employees "have gathered more species in the past few months than the Costa Rica Natural History Museum had collected in the last century." The Tico Times reported in 1992 that INBio had graduated its third class of parataxonomists--mainly local lay people

who ceremony speaker Dan Janzen said "instinctively" knew where to look for specimens. And INBio board member Carlos Valerio wrote in 1992 that "our estimate is that a steady pool of 100 to 200 parataxonomists working through INBio for about ten years can put well over ninety-five percent of Costa Rica's diversity into our National Biodiversity Collections." He estimated that a full time worker trapping insects could "conservatively" produce 500 "properly pinned specimens per day for twenty days per month, or 10,000 specimens per month." (For a chart of collections operations, see Figure 2.)

Insufficient time has lapsed to gauge accurately the success of the third step or goal, but some things are in place to show how saving biodiversity will work for the improvement of society. First, INBio has been an obvious economic boost in employing many scientists, lay parataxonomists, and field assistants. Yet even more economically hopeful is INBio's role in the developing industry called "chemical prospecting." Defined as "the notion that nature can teach chemists a few tricks about how to design drugs," medical and pharmaceutical research is taking on new meaning through chemical prospecting in tropical nations. Lynn Llewellyn reports that one half of the modern medicines in use today are derived from the natural world with most of those coming from tropical forests. INBio and three universities (UCR, Cornell, and Strathclyde of Glasgow, Scotland) have arranged a joint research program to identify, study, and experiment with plant and insect extracts and to perform prelimi-

Figure 2: Flow Chart of INBio Collections Operations



(Source: INBio office, Santo Domingo, Costa Rica)

nary bio-assays of chemical compounds. Analytical techniques like mass spectrometry and magnetic resonance spectroscopy are then used to determine the extracts' chemical structures for their possible pharmaceutical values. The arrangement is that INBio will receive a sixty percent royalty from any such patentable compound or a fifty-one percent royalty from a compound that requires significant chemical modification. INBio, in turn, will release all profits generated through this program to conservation causes in Costa Rica.

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Much of this plan was originated by Thomas Eisner, a chemical ecologist at Cornell University and one of the world's foremost researchers of tropical medicines. Eisner believed that if pharmaceutical corporations could join up with tropical countries both sides (and mankind in general) would benefit. One such company that agreed was Merck & Company of Rahway, New Jersey. In 1992-93 Merck paid INBio one million dollars for the opportunity to search for drugs that could possibly cure Alzheimer's disease, high blood pressure, AIDS, and other maladies.* In addition, Merck donated \$135,000 in chemical extraction laboratory equipment to INBio and sent chemists there to help train INBio staff. The money generated by Merck was turned over to the Ministry of Natural Resources (MIRENEM, now MINAE) for support of Isla del Coco National Park.

13

* Interestingly, Merck's research and development budget of one billion dollars was nearly the same as the entire operating budget of the Republic of Costa Rica in 1991.

Thus Gámez is realizing his three point goal. To finance such an undertaking required government assistance and outside help. Initial support came from the Central Bank of Costa Rica, U.S. AID (which also financed the second parataxonomy project through the efforts of AID tropical ecologist Gary Hartshorn), the MacArthur Foundation, the Swedish government, Pew Charitable Trusts, and other foundations. Money from Merck also supports administrative costs. (See Figure 3 for a breakdown of an early INBio operating budget.)

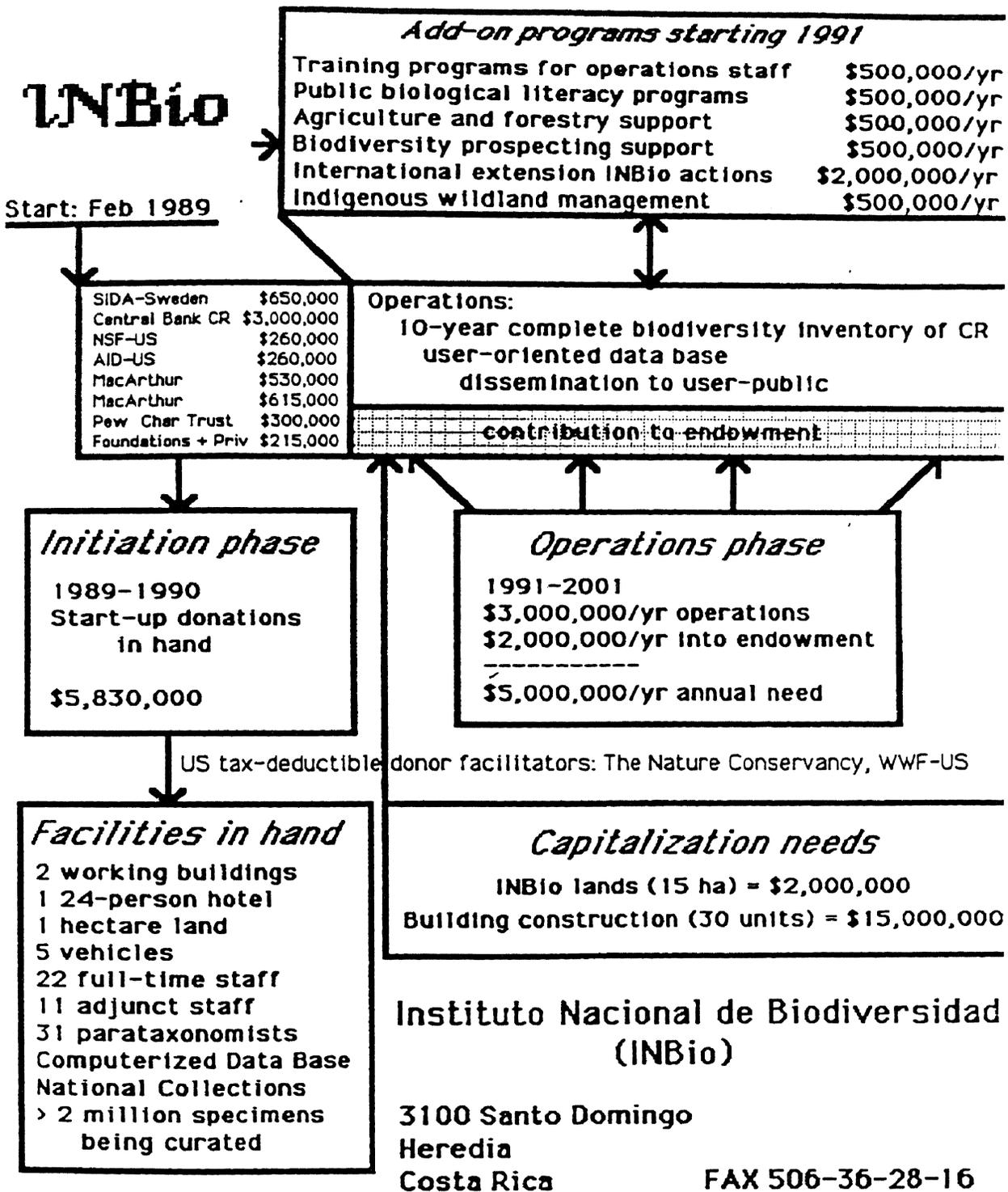
Generating money for research is another INBio advantage. According to Gamez, National Museum personnel were at first "horrified" about chemical prospecting, but warmed to the idea in view of the economic benefit. Microbiologist Anna Sittenfeld, who heads INBio's biodiversity prospecting division, stated:

The idea is to create alternatives for economic development, and alternatives for jobs. Then there will be less pressure against the land that is now protected [and] benefits will accrue even if the prospectors fail to find a billion dollar drug in the rainforest. (15)

Daniel Janzen agreed but warned that "if people say biodiversity has value then it will fall under the social rules that all other things that have value do. You bargain for it, you hide it, you steal it, you put it in the bank. It's no longer the toy of the English rich." INBio therefore has established safeguards to ensure companies using forest products do not claim that the re-sources are synthetic to avoid paying royalties.

Still, the philosophy behind "selling nature" bothers some environmentalists. Ivannia Mora has asked what the price on

Figure 3: The 1991 INBio Operating Budget



(Source: INBio office, Santo Domingo, Costa Rica)

natural resources should be, who is to determine it, and how some resources will be classified "invaluable" and others of "relative" value. To her, the program seemed like yet another case of rich, northern countries being able to buy their way to the natural resources they need at the expense of the struggling, developing countries of the South. Others have criticized how INBio has "ceded intellectual property rights" to Merck and Co. Journalist John McPhaul pointed out that critics have questioned "the right of any private entity to exploit natural resources" and have petitioned the government to regulate biogenetic research in the country.

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But according to Alsio Piva, INBio's director of inventories, the critics have exaggerated the importance of the Merck deal. "Everyone has paid attention to the contract with Merck, perhaps because it's something new," Piva surmised, "but for us it represents only twenty percent of our budget for the year." He went on to point out that the deal was for two years only and involved a "relatively small number of genetic samples for which the company will retain no rights after the contract expires." Likewise, the contract is non-exclusive meaning that INBio may contract with other companies. "If we are going to propose developing the country's genetic resources, it doesn't make much sense to think about trying to market medicinal herbs; we have to play in the big league," Piva concluded.

18

Some critics find fault with INBio's novel "parataxonomist" program also. In some ways INBio officials have been condescend-

ing or paternalistic regarding who and why they hire their research and collections assistants. Note, for example, how INBio board member Carlos Valerio described the program:

It should be emphasized that the parataxonomists are not thought to be embarking on the first steps to becoming Ph.D. biologists. Rather they are learning a trade. . . . Experience is showing us that the parataxonomists view their new trade as an enlightened and intellectual step upward, and that they are truly moved up from a static position in society.

Alsio Piva mentioned that "we don't expect them [the parataxonomists] to have the skills of scientists, but they will be excellent assistants." ¹⁹ But a question remains regarding what they might do with these skills after the proposed ten year collections period is over. Will they be dumped or gainfully employed?

Currently INBio is involved with other on-going projects in addition to biosystematics and chemical harvesting. Staff training, public biological literacy programs, wildlife management, and support for sustained agriculture and forestry are among its priorities. Likewise, INBio is serving as a model to help other countries develop a biodiversity survey. Representatives from Chile and China have made serious inquiries and have visited the institute.* U.S. Congressman James Scheuer of New York drafted a bill in 1992 to establish a biodiversity institute

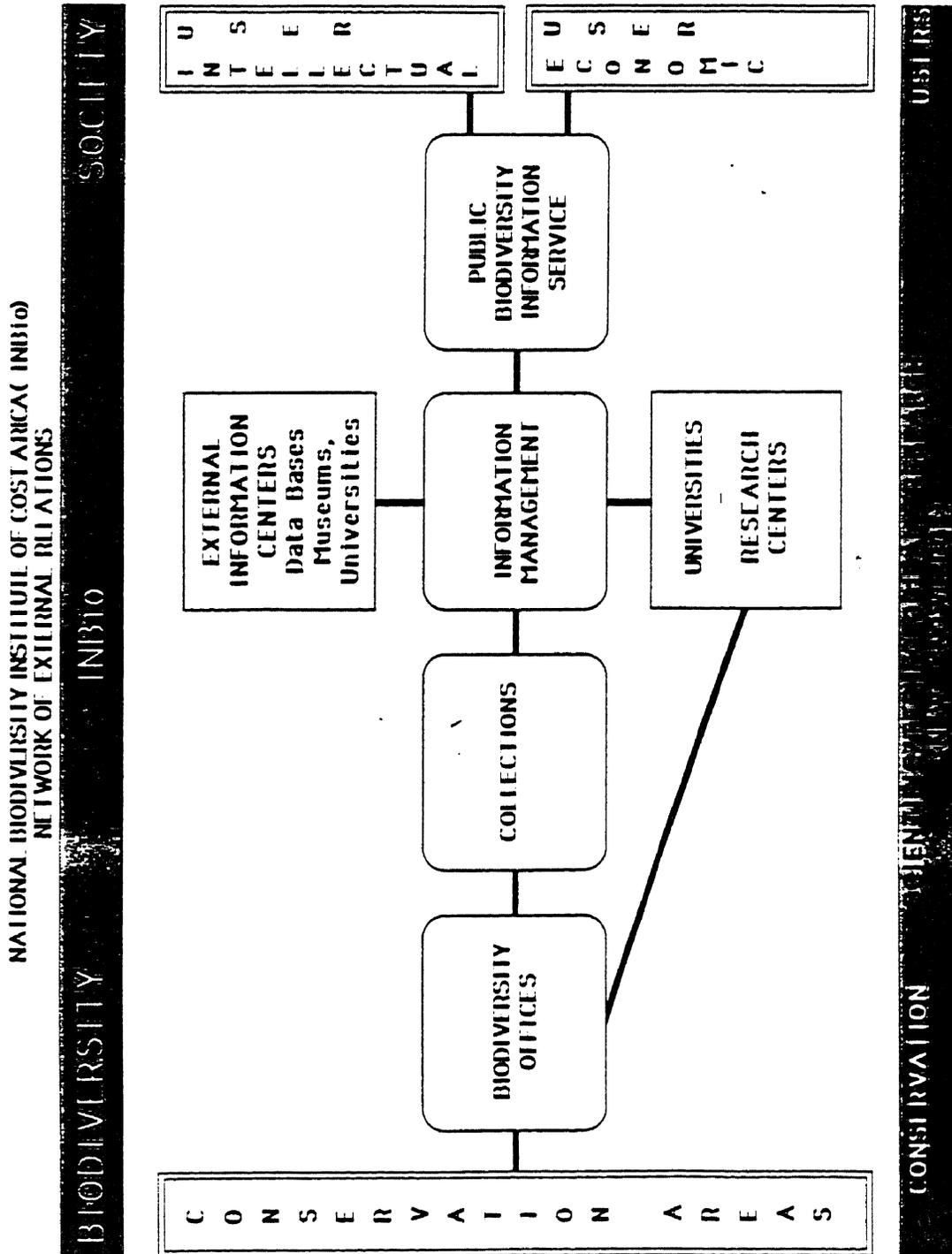
* Some specialists warn that the model may not necessarily transfer to all other regions of the world. Costa Rica's stable democracy and commitment to conservation are rare in the tropics where chemical prospecting could lead to resource exploitation and increased degradation of the terrain without profits going to conservation causes. (See Leslie Roberts, "Chemical Prospecting," Science [26 May 1992]) for more complete details.)

in the United States based on his staff's visit to INBio. Gámez has visited Italy and East Africa with his message of how to protect and capitalize on biodiversity. In her research on INBio, Laura Tangley adds that "amid all the bad news that has come out of the tropics in recent years, Costa Rica stands out consistently as an example of what can work well in tropical conservation."²⁰

In conclusion, INBio is perhaps in some ways Costa Rica's most poignant manifestation of an environmental ethic. As Luis Diego Gómez has written, "biological diversity is the password²¹ in today's conservation." The realization that protecting the environment means first knowing as much as possible about it, and then using and marketing that information to benefit the country and pay its own way (without taxing the citizens of the country), is unique to Costa Rica in the tropics, and in the world may only be surpassed by Australia's biodiversity inventorying system. In addition to the economic spin-offs, the information from INBio is disseminated to various centers around the country making it available to a wide range of users. (See Figure 4.) In the meantime, Costa Rica's conserved areas are being used developmentally but safely in a manner that gains more public support than if they were just fenced off preserves. One writer referred to this as a kind of "biological OPEC" in which Costa Rica could control²² its resources on its own terms. But biodiversity research has implications beyond the borders of Costa Rica. The Smithsonian's Thomas Lovejoy accurately addressed this when he stated, "he who supposes that we live on a well explored planet is not only fool-

ish but arrogant; the protection and investigation of our biological resources, especially those located in the tropics, should be an item of high priority on the human agenda." INBio proves that it is a high priority in Costa Rica.

Figure 4: INBio's Network of External Relations (source: INBio)



CONCLUSION: "Picking up the Gauntlet"

If we examine the past, it is undeniable that every day a greater number of Costa Ricans, as well as foreign residents in the country, are picking up the gauntlet. What this tells us is that more persons are contributing to the forging of a better Costa Rica for this and future generations, as well as undertaking the role that corresponds to a civilized nation, resolved to safeguard its natural heritage and extraordinary culture, on this little piece of planet Earth.

- Gerardo Budowski (1)

This work has attempted to show the multidimensional history of conservation in Costa Rica. Research revealed that it was the combination of the country's unique biogeography, legacy of scientific inquiry, and reliance on primarily locally owned and relatively small agricultural units that provided the foundation for the development of a conservation ethic. But while this outlook on land stewardship for renewable natural resource use became skewed with the advent of developmental (i.e. capitalistic) export agriculture--not to be omitted or analyzed lightly in a review of Costa Rican environmental history--the nation responded with a conservationist agenda. INBio's Rodrigo Gámez attributed the successes since 1969 to four principal factors: the opportunity that Costa Rica had to establish a system of protection "while there was still some time left to save substantial portions of the country from destruction"; the initial "enthusiasm and commitment" of a large percentage of the population; the "stability of an unarmed democracy and its satisfactory attention to the basic socioeconomic needs" of the people; and "the politi-

cal support that conservation has received from the five administrations since the system was established." Luis Fournier emphasized the improvement of higher education (especially at the University of Costa Rica in the 1960's and early 1970's when there was a general paucity in environmental thinking) and "the better dispensation of funds for scientific ecological research." All of this, he added, created "a better comprehension on the part of Costa Ricans about the practical importance of ecology."²

In tracking the emergence and development of this pattern, this work has attempted to show how the government and society in general have reacted to conservation concerns and what framework has been created for future environmental protection (agencies, NGO's, education, etc.). But there are pressures on this model that will test its very core. The most pronounced of these is the pressure of growth--demographic and economic.

While the population of Costa Rica historically has been low (and today is just over three million) the rate of growth is what worries social scientists. Jeffrey Leonard reported that by 1987 Costa Rica's density had reached eighty-five persons per square mile--the third most dense in the region, behind El Salvador and Guatemala. From 1960 to 1980 the country experienced the most dramatic demographic growth (four percent a year) largely due to the government's excellent health care and resulting low mortality rate. By the 1990's the population density was 155 persons per square mile despite having the third highest rate of birth control in the world just after Singapore and Taiwan.³

Of course growth means pressure on natural resources. The link was shown most graphically by Fournier who directly matched population increases with the rate of deforestation. Others have discussed the long term disadvantages of spiralling growth to both the environment and the economy. The goal, then, is for balance. Can Costa Rica rise to the challenge as it has in the past? Will the "seductions of the American way of life," as referred to by Raúl Prebisch, impede the work for sustainable development?⁴

These and other questions must be addressed by the public and the policy makers in Costa Rica. In fact, they are part of the larger picture of Costa Rica's grand contradiction: the juxtaposition of conservation with destruction. The literature is consistent about Costa Rica's admirable (and much publicized) work to protect one fourth of the country while millions of other acres were being systematically deforested. "Paradise on the brink," "ecological contradiction," and "environmental myth" are the kind of pat terms so commonly used to describe this ironic condition. John Vandermeer and Ivette Perfecto's study perhaps best exemplifies this thinking:

Costa Rica has been held up as one of the world's best examples of rain forest conservation. Its internationally recognized conservation ethic, its position of relative affluence, its democratic traditions, the remarkable importance of ecotourism to its national economy, its willingness to adopt virtually any and all programs of conservation promoted by Western experts make it the most likely place for the success of the traditional model of rain forest conservation. The fact that the model has been an utter failure in Costa

Rica, where it had the greatest chance of success, calls the model itself into serious question.. (5)

Will there be any natural areas outside of parks and preserves by the year 2020? Or will it be like Vandermeer and Perfecto predict, that Costa Rica's landscape "will be converted into isolated islands [national parks and biological reserves] surrounded by a sea of pesticide drenched modern agriculture?" And even the word "model" for Costa Rica has been called into question. Marjorie Sun reported that "representatives of American conservation foundations shy away from calling Costa Rica a model for other countries because of its unusual political and social achievements." She quoted The Nature Conservancy's Geoffrey Barnard, who for many years was involved in the country's conservation efforts: "We hesitate to use the term 'model' [for Costa Rica] because it makes teeth grate in other developing countries.* They like to say they're different."

But Vandermeer, Perfecto and others who assert that Costa Rica's "model" has failed have not considered the alternative. It does not appear that they have comparatively considered what Costa Rica's landscape (or economy, for that matter) would look like without its past conservation record. The Tilarán and Talamanca mountains no doubt would be completely denuded if not now, by soon into the twenty-first century. Endangered species would be extinct. The tropical dry forest would be gone from the

* And yet it was Barnard himself who published an article only six years before with the title, "Costa Rica: Model for Conservation in Latin America." (See TNC News 32:4 [1982], pp. 7-11.)

globe. Some of the most beautiful shorelines might look like Torremolinos (Spain), Cancún, or South Padre Island. Instead of green, Costa Rica would be a brown republic. No, the national park system, while not without challenges, has reversed the tide and protected places that can be studied for their biological and biogenetic riches for years to come and that can be (and are) enjoyed by Ticos to understand and better appreciate their natural heritage and by foreigners to taste the wonders of the tropical world.

Thus, picking up the gauntlet for a balanced, sustained and environmentally protected Costa Rica is the agenda for the conservationist community and society as a whole. Costa Rica has an indisputable advantage in the framework that is already in place and that has made dynamic strides in accomplishing this goal. Its emphasis on protecting wild areas, inventorying biodiversity, and educating the public will reap valuable rewards in the continuing process of preserving the environment. In addition, research must continue and new information must be constantly published. Existing parks and protected areas should be expanded and improved. New areas and small reserves of fragile environments should be developed. Many sectors of society should be involved in this process. Broad support is a requisite. Some sectors of society may have to change their traditional views of privately owned and developed land. The economic values of conservation must be further projected into society. Because the "pragmatism of economic man, and especially

the pragmatism of the Latin culture," as Luis Diego Gómez and Jay Savage put it, cannot and should not be ignored in Costa Rica, compromises on the part of environmentalists may have to continue to be made. Rodrigo Gámez concludes:

The Costa Rican park system has survived so far because three million people have their basic needs met. But what happens when we reach six million? The fact is that a park, in addition to protecting the species, has to be socially viable. And it may be that we will have to sacrifice some of the biodiversity in order for conservation to be more socially acceptable. (7)

And Costa Rica's "conservation cartel" recognizes the challenges. Mario Boza has written that "future concerns for the national parks of Costa Rica include the economic situation, conservation education, the need to demonstrate the monetary value of conservation, population growth, the need for citizen involvement, and the need for effective environmental legislation." He also has suggested that "a likely and desirable development in the near future would be for a U.N. environmental organization to be given power to set international standards, just as similar U.N. agencies now set international health and labor standards . . . [and] be empowered to infringe on the sovereignty of individual states in environmental matters. . . ."

One employee of the U.N.'s Environmental Program Office for Central America, Alvaro Ugalde, concurs with Boza's assessment. On demographics, Ugalde fears that "Costa Rica will double its present population . . . in twenty-five years, and I see no way to change that." Thus he has called for a system of "optimal

parks" that would continue to protect representative selections of all biological regions, would protect biodiversity and genetic wealth, and "would strive to save all the parts without exception" although he admits that "the challenging question" here is "how to choose priorities when we cannot save all the parts." "How do we save parts that are becoming increasingly separated," he wondered, "the parks of the next century will be shrunken, highly mixed fragments of nature." Therefore, more "political battles" will ensue, the park staff will have to be "more scientific and education oriented," and a "conservation philosophy" must continue to be "embedded in our societies as a new kind of institution, heavily linked to education, to aspects of everyday life, and to local economies."

9

Alexander Bonilla lists six specific goals for the future: to reduce the bureaucracy that produces redundancy in effort and slows conservation; to enforce management plans that already exist; to regulate urban sprawl; to control slash and burn farming; to eliminate poaching; and to reduce dependency on industrial agriculture. Luis Fournier stated that the biggest challenge is to control the borders--to stem the tide of illegal immigrants pouring into Costa Rica (primarily from Nicaragua) who "cause pressure" on protected areas. Roxana Salazar disagreed with Fournier, citing that most Nicaraguan immigrants are assumed into the banana labor force ("their level of poverty justifies their coming here") and are "not an ecological problem." Instead, she suggested that urban problems, pollution, and toxic

industrial waste control are the most serious environmental
10
concerns that the country faces.

The call is also out for people in the "developed" countries of the North to do their part. Bonilla stated that "northerners have no right to complain"--that their lifestyles must change to help protect endangered ecosystems in places like Costa Rica. Vandermeer and Perfecto assert that North Americans and Europeans are "slicing up the rain forest [of Costa Rica] on [their] breakfast cereal" and that they should reconsider their tastes and demands. And a recent study by Russell Greenberg, of the Smithsonian Institution's Migratory Bird Center, found that rapid expansion of unshaded coffee farms in Central America has accounted for an alarming drop in song bird numbers. Greenberg cites how Costa Rica has converted forty percent of its coffee plantations to "sun coffee"--coffee plants without tree shade that live twelve to fifteen years, compared to "shade coffee" plants that live fifteen to fifty years and whose trees overhead shelter a diversity of passerines that winter in the South. His findings, however, show that the exponential rise in demand for "gourmet coffees" is good for the birds and the environment as they are shade grown varieties. He, like Vandermeer and Perfecto, then, has called on North Americans to do their part and
11
drink more gourmet blends.

There are other innovative ideas in the works that could help make conservation more economically attractive and therefore more marketable to the public. It was reported in the summer of

1996 that the Costa Rican government had struck a deal to sell oxygen produced in rainforests to the Kingdom of Norway. Paying ten dollars per ton, officials agreed to purchase an initial 200,000 tons to be shipped to Norway. La Nación hailed the deal as the first of its kind "to export environmental services in the entire world." René Castro, Minister of Environment and Energy (MINAE), said the money from the sale would go to start a National Forestry Financing Fund and that MINAE would start looking for other international clients for its "environmental services."¹²

In addition to the prospects for "shade tree coffee" and selling rainforest produced oxygen, some of Costa Rica's deforested pastures may be on the rebound. Forestry consultant James Barborak explained that "although in places like the Amazon it's appropriate to say that once you cut the forest down you may never get it back, that's obviously not the case with the fertile volcanic soils in most of Costa Rica." He pointed out that, for better or worse, much of the country is becoming urban--people are leaving areas of poor soil never suited for agriculture and that trees are beginning to crop up. "Ten years from now, an awful lot of Costa Rica's going to be in second growth," especially in places like the Nicoya peninsula, he said.¹³

Costa Rica may be so on the environmental rebound that one of its prominent citizens has called on the whole country to be declared the first "world park." Robert Muller, chancellor of the University for Peace and a former Assistant Secretary General

of the United Nations, stated in an interview that because of its working conservation system and lack of military, Costa Rica would be the prime country for such an experiment. He envisioned the Costa Rican World Park to be replete with an environmentally friendly monorail system, more national parks, efficient alternative energy use, culturally sensitive indigenous reserves, and other ideas that, to this author, smacked of Ernest Callenbach's Ecotopia. Muller proffered that such a concept would attract a great deal of attention to world environmental problems and could be a financial boon to the nation.

14

While Costa Rica is a long ways from becoming a tropical ecotopia, it has been blessed with a variety of conservation successes in a short period of time. How those have occurred, the key individuals behind them, the stumbling blocks along the way, and the framework set to confront the environmental challenges of the future have been the topics of this work. Future research will have to qualify the long range successes or shortcomings of Costa Rica's conservation program. But that the framework is in place is one of the most important considerations. And as a "model" (if that word dare be used), future research is wide open to measure conservation successes in other regional countries. Panama, for example, is ripe for research in this genre of conservation history. How that nation arguably has surpassed Costa Rica in national park and biological reserve designations in an even far shorter period of time deserves careful historical inquiry. Any conservation successes in tropical America are to be

applauded for the biological wealth, natural heritage, and enjoyment they will preserve for future generations. Placing this green republic of Costa Rica in perspective, Luis Gómez and Jay Savage reminisce:

We remember the bright blue skies, the white clouds, the almost black forests on the slopes of the volcanoes, the driving rain, the green complexity of the forest canopy viewed from a mountain slope and our own tininess within the forest's grasp. . . . Can we truly believe that man is so foolish as to completely destroy this special world? We cannot let it be so! For once gone, something special and basic about ourselves will be gone too--and afterward man himself will not survive. ¡Viva Costa Rica! (15)

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10. Young, Field Guide, 10.

11. Alexander Bonilla, Situación ambiental de Costa Rica (San José: Instituto del Libro [Ministerio de Cultura, Juventud, y Deportes], 1985), 9; Hall, Geographical Interpretation, 1; Young, Field Guide, 12. For Holdridge's life zone classification system, see Leslie Holdridge, Life Zone Ecology (San José: Tropical Science Center, 1964); and Leslie Holdridge, Forest Environments in Tropical Life Zones (New York: Pergamon Press, 1971).

12. María Eugenia Bozzoli de Wille, conversation, 19 July 1996 (San Pedro, Costa Rica). Dr. Bozzoli's new findings dispute her earlier demographic data in El indígena costarricense y su ambiente natural: Usos y adaptaciones (San José: Editorial Porvenir, 1986) which were based on the standard work by Bishop Augusto Thiel, Monografía de la población de la República de Costa Rica en el siglo XIX 2nd ed. (San José: Editorial Costa Rica, 1977). Her research also disputes the data of fellow University of Costa Rica anthropologist Marcus Guevara and UCR historian Hector Pérez Brignoli who suggest the indigenous population was around 400,000. For information on Guevara's research, see John McPhaul, "No Indians?: 'White Myth' Was Common Until Recently," Tico Times 7 August 1992, 4. For further data on the 400,000 figure, see Hector Pérez Brignoli, La población de Costa Rica según el Obispo Thiel (San José: Universidad de Costa Rica, Instituto de Investigaciones Históricas, Avance de Investigación, no. 42, 1988); Eugenia Ibarra Rojas, Las sociedades cacicales de Costa Rica, siglo XVI (San José: Editorial Universidad de Costa Rica, 1990); and William B. Denevan, ed. The Native Population of the Americas in 1492 2nd edit. (Madison: University of Wisconsin Press, 1992). When I asked Mario Alvarado Sánchez, an official at Costa Rica's Commission on Indigenous Affairs (CONAI) about his agency's position on the pre-Columbian demographics question, he responded that because "it's of the past, CONAI does not get into this; we leave it to the historians and anthropologists." The population disparity received much attention in 1992 when Costa Rican President Rafael Calderón visited Spain and in a press conference there stated that Costa Ricans were proud of their Spanish heritage since so few Indians lived in the area at the time of

European contact. The gaffe was picked up by the press. Native peoples and others were outraged in Costa Rica, but Calderón later complained that his his statements were taken out of context. See the McPhaul article mentioned above for more details of the controversy.

13. Luis Tenorio Alfaro, Las comunidades indígenas de Costa Rica (San José: CONAI-Imprenta Nacional, 1988), 5. "Sustainable" does not necessarily mean without any environmental impact. Archaeologists have shown that most forested parts of Costa Rica, including remote areas once thought to be primary forest like OTS's La Selva and forests on the Osa Peninsula, were burned for clearing by pre-Columbian peoples. William Denevan, ("The Pristine Myth: The Landscape of the Americas in 1492," Annals of the Association of American Geographers 82:3, 369-385) for example, asserts that the landscape was more "pristine" in 1650 than at the time of Columbus' arrival in the New World. For more information, see Virginia P. Laftwich, "Succession and Related Changes in the Tropical Rainforest on the Osa Peninsula, Costa Rica," unpubl. ms., University of Missouri, Department of Biology, 1972, in National Archives, series: SPN, file no. 1357; and John W. Hoopes, "In Search of Nature: Imagining the Pre-Columbian Landscapes of Ancient Central America," working paper for the Nature and Culture Colloquium, Hall Center for the Humanities, University of Kansas, 1996.

14. Jean Carriere, "The Crisis in Costa Rica: An Ecological Perspective," in Michael Redclift and David Goodman, eds. Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 188; Hall, Geographical Interpretation, 59. For a more thorough analysis of Costa Rica's uniqueness during this time period, see Charles L. Stansifer, "Reflections on Early Costa Rican Exceptionalism," paper delivered at the Second Inter-American Relations Conference, 12 Oct. 1996, Jacksonville, FL.

15. Carriere, "The Crisis in Costa Rica," 188.

16. L.D. Gómez and J.M. Savage, "Searchers on that Rich Coast: Costa Rican Field Biology, 1400-1980," in D.H. Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 2.

17. Amelia Smith Calvert and Philip Powell Calvert, A Year of Costa Rican Natural History (New York: MacMillan Co., 1917), 328.

18. Nicolo Gligo and Jorge Mello, "Notas sobre la historia ecológica de la América Latina," in Osvaldo Sunkel and Nicolo Gligo, eds. Estilos de desarrollo y medio ambiente en la América Latina (Mexico City: Fondo de Cultura Económica, 1980); Karen

Olsen de Figueres, personal interview, 29 June 1992 (Curridabat, Costa Rica). Lowell Gudmundson, however, disputes this theory. In "Costa Rica before Coffee: The Village Economy of the Late 1840's" (in Marc Edelman and Joanne Kenen, eds. The Costa Rica Reader [New York: Grove Weidenfeld, 1989], 29), Gudmundson argues that "pre-coffee Costa Rica was no household economy" and that the change to coffee monoculture in the mid-1800's was toward agricultural specialization.

19. Hall, Geographical Interpretation, 29.

Chapter 1: A Legacy of Scientific Thought and Tropical Research

1. Mario Boza, Los parques nacionales de Costa Rica (San José: Servicio de Parques Nacionales, 1978), 2.

2. Luis Fournier Origgi, Ecología y desarrollo en Costa Rica (San José: Editorial UNED, 1981), 26.

3. Charles L. Stansifer, "Foreign Scientists in Costa Rica, 1845-1914," unpubl. m.s.; L.D. Gómez and J.M. Savage, "Searchers on that Rich Coast: Costa Rican Field Biology, 1400-1980," in D.H. Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 2; quotation is from Rafael Lucas Rodríguez, "Ciencias naturales," La Nación 24 November 1969, 73. For a different account on the influence of Alexander von Humboldt in Costa Rica, see Oton Jiménez Luthmer, "La influencia de Humboldt en la cultura de Costa Rica," Revista de Agricultura 41 (1969), 1-12.

4. Carl Hoffman, Viajes por Costa Rica (San José: Ministerio de Cultura, Juventud, y Deportes, 1976), 24.

5. Gómez and Savage, "Searchers on that Rich Coast," 2.

6. Stansifer, "Foreign Scientists," 4.

7. Carlos Meléndez Cheverri, introduction to Carl Hoffman, Viajes, 19.

8. Stansifer, "Foreign Scientists," 6. He goes on to explain that an attempt was made to encourage Spanish educators to move to Costa Rica which was surprising "since Spain was not generally considered in the vanguard of scientific educational leadership" in the nineteenth century.

9. Gómez and Savage, "Searchers on that Rich Coast," 4.

10. Ibid. Pittier remarks were quoted in Alexander Bonilla, Situación ambiental de Costa Rica (San José: Instituto del Libro [Ministerio de Cultura, Juventud, y Deportes], 1985), i.

11. For analysis of the history of the Instituto Físico-Geográfico, see Marshall C. Eakin, "The Origin of Modern Science in Costa Rica: The Instituto Físico-Geográfico Nacional, 1887-1904," Latin American Research Review, forthcoming. The article is based on Dr. Eakin's undergraduate honor's thesis, "The Instituto Físico-Geográfico Nacional and the Development of Science in Costa Rica, 1887-1904," University of Kansas, 1975.

12. Gómez and Savage, "Searchers," 4.

13. Amelia Smith Calvert and Philip Powell Calvert, A year of Costa Rican Natural History (New York: MacMillan Co. 1917), v, vii.

14. Alexander Skutch, A Naturalist in Costa Rica (Gainesville: University of Florida Press, 1971), 8. Gerardo Budowski (interview, 18 July 1996) also stressed that "friendly, democratic Costa Rica attracted many foreign scientists" to study and conduct research in the country.

15. Gómez and Savage, "Searchers," 4.

16. Luis Fournier Origgi, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 41.

17. Gómez and Savage, "Searchers," 4.

18. Fournier, Desarrollo y perspectiva, 55.

19. Alexander Skutch, A Naturalist on a Tropical Farm (Berkeley: University of California Press, 1980),

20. Fournier, Desarrollo y perspectiva, 53.

21. See Gómez and Savage, "Searchers," 7. For insight into his own writings and research (and for an enjoyable and at times humorous read), see Alvaro Wille Trejos, Corcovado: Meditaciones de un biólogo, un estudio ecológico (San José: Editorial UNED, 1987).

22. Gerardo Budowski, personal interview, 18 July 1996 (Curidabat, Costa Rica).

23. David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 13.

24. Wallace, Quetzal and Macaw, 14; Mario Boza, personal interview, 9 July 1996 (San Pedro, Costa Rica).

25. The survey is found in National Archives, series: Servicio Parques Nacionales [hereafter, SPN], file no. 698.

26. Mario Boza, personal interview, 9 July 1996. Some information here was derived from literature at the CCC office in San Pedro, Costa Rica.

27. Joseph Tosi, "A Brief History of the Tropical Science Center's Monteverde Cloud Forest Preserve, 1972 to 1992," unpubl. m.s. (from the TSC office, Monteverde, Costa Rica), 1-3. See also Wallace, Quetzal and Macaw, 112-116 for a good discussion of Monteverde history, problems, and interviews with past and current leaders.

28. Tosi, "Brief History," 2, 8; Victor Dwyer, "Cheap Conservation at \$25 an Acre," Macleans (4 April 1988), 52.

29. National Archives, series: SPN, file no. 724.

30. Visitation figure is from TSC office, Monteverde, Costa Rica; quotation is from Tosi, "Brief History," 9; speciation figures are from Joseph Franke, Costa Rica's National Parks and Preserves (Seattle: The Mountaineers, 1993), 120.

31. Franke, National Parks and Preserves, 121.

32. David Clark, "La Selva Biological Station: A Blueprint for Stimulating Tropical Research," in Alwyn Gentry, ed. Four Neotropical Rainforests (New Haven: Yale University Press, 1991), 9.

33. Gómez and Savage, "Searchers," 8.

34. J. Christopher Brown, "The OTS: The Development of Its Relationship with Costa Rica over Three Decades," unpubl. ms., 1989, 2-8. For more on scientific imperialism in general, see Gerardo Budowski, "Scientific Imperialism," Unasyva 27:107 (1975), 24-30.

35. Clark, "La Selva," 16; Gómez and Savage, "Searchers," 8.

36. As quoted in Laura Tangley, "The OTS," BioScience 38:6 (1988), 384.

37. Gómez and Savage, "Searchers," 8; speciation figures are from Norman Myers, "Tropical Deforestation and the Mega-Extinction Spasm," in Michael E. Soulé, ed. Conservation Biology: The Science of Scarcity and Diversity (Sunderland, MA: Sinauer and

Associates, Inc., 1986), 397; Clark, "La Selva," 16. For an ecological history of La Selva, see Susan M. Pierce, "Environmental History of La Selva Biological Station: How Colonization and Deforestation of Sarapiquí Canton, Costa Rica, Have Altered the Ecological Context of the Station," in Harold K. Steen and Richard P. Tucker, eds. Changing Tropical Forests: Historical Perspectives on Today's Challenges in Central and South America (Durham, NC: Forest History Society, 1992).

38. Rodrigo Gámez, in introduction to Lucinda A. McDade, et al., eds. La Selva: Ecology and Natural History of a Neotropical Rain Forest (Chicago: University of Chicago Press, 1994), vii.

39. Clark, "La Selva," 16.

40. Charles Schnell (Harvard University) to Grace Solano (administrator of Chirripo National Park), 24 October 1983 in National Archives, series: SPN, file no. 1206.

41. Clark, "La Selva," 21.

42. Daniel H. Janzen, "Investigaciones biológicas en el Parque Nacional Corcovado, Costa Rica," in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982).

43. Gómez and Savage, "Searchers," 10.

44. Gámez, in introduction to McDade, La Selva, viii.

45. Rodríguez, "Ciencias Naturales," 73.

Chapter 2: The Environmental Problem

1. Luis Fournier Origgí, Recursos naturales (San José: Editorial UNED, 1983), 5.

2. María Eugenia Bozzoli de Wille, El indígena costarricense y su ambiente natural: Usos y adaptaciones (San José: Editorial Porvenir, 1986); Luis A. Tenorio Alfaro, Las comunidades indígenas de Costa Rica (San José: CONAI-Imprenta Nacional, 1988).

3. Carolyn Hall, Costa Rica: A Geographical Interpretation in Historical Review (Boulder: Westview Press, 1985), 2.

4. Bozzoli de Wille, El indígena costarricense, 79.

5. Hall, Geographical Interpretation, 83; Alfred W. Crosby, Ecological Imperialism: The Biological Expansion of Europe, 900-1900 (Cambridge: Cambridge University Press, 1986), 134; quotation is from Michael Redclift and David Goodman, introduction to Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 10.

6. Hall, Geographical Interpretation, 1.

7. For further discussion, see Jean Carriere, "The Crisis in Costa Rica: An Ecological Perspective," in Redclift and Goodman, eds. Environment and Development; and Mario Samper Kutschbach, "Los productos directos en el siglo de café," Revista de Historia 4 (1978), 123-217. Lowell Gudmundson, in his article "Costa Rica before Coffee: The Village Economy of the Late 1840's," (in Marc Edelman and Joanne Kenen, eds. The Costa Rica Reader [New York: Grove Weidenfeld, 1989], 28) offers a provocative dissent from this line of thinking. He claims that Costa Rica was not actually very "pristine" during the colonial years and provides evidence of inequitable landholdings and "oligopolistic trade patterns" soon before and after independence from Spain. A majority of Costa Rica's shipping trade was controlled by one merchant in particular--Franciso Giralt, a wealthy Catalanian.

8. For more information, see George M. Guess, "Bureaucracy and the Unmanaged Forest Commons in Costa Rica (or Why Development Does Not Grow on Trees)," Working Paper No. One, University of New Mexico, 1979.

9. Fournier, Recursos naturales, 15.

10. For additional information, see Alexander Bonilla, Situación ambiental de Costa Rica (San José: Instituto del Libro [Ministerio de Cultura, Juventud, y Deportes], 1985).

11. Nicolo Gligo and Jorge Morello, "Notas sobre la historia ecológica de la América Latina," in Osvaldo Sunkel and Nicolo Gligo, eds. Estilos de desarrollo y medio ambiente en la América Latina (Mexico City: Fondo de Cultura Económica, 1980). For more in depth discussion on the Costa Rican banana industry, see Thomas Karnes, Tropical Enterprise: The Standard Fruit and Steamship Company in Latin America (Baton Rouge: Louisiana State University Press, 1978); Charles David Kepner, jr. and Jay H. Soothill, The Banana Empire: A Case Study of Economic Imperialism (New York: Russell and Russell, 1967); Aviva Chomsky, West Indian Workers and the United Fruit Company in Costa Rica (Baton Rouge: Louisiana State University Press, 1996); and William C. Holliday, jr., "Profit & Progress, Pesticides & Poisonings: The Sustainability and Environmental Impact of Costa Rican Banana Agriculture, 1900-1990," M.A. Thesis, University of Kansas, 1997.

12. Osvaldo Sunkel, "La interacción entre los estilos de desarrollo y el medio ambiente en la América Latina," in Sunkel and Gligo, eds. Estilos de desarrollo, 18.
13. Raúl Prebisch, "Biósfera y desarrollo," in Sunkel and Gligo, eds. Estilos de desarrollo, 86.
14. John Augelli, "Modernization of Costa Rica's Beef Cattle Economy: 1950-1989," Journal of Cultural Geography 9 (1989), 82.
15. For further information, see Reinaldo Carcanholo, "La industrialización centroamericana y el patrón del despilfarro: El caso de Costa Rica," in Julio César Funes, ed. Problemas del desarrollo de América Latina y el Caribe (Caracas: AEALC, 1982) and Gligo and Morello, "Historia ecológica."
16. Carl Hoffman, Viajes por Costa Rica (San José: Ministerio de Cultura, Juventud, y Deportes, 1976), 97.
17. "El cebú: Bovino ideal para los trópicos," La Prensa Libre, 26 November 1969, 18. The standard works on the flow of Central American beef to North American food chains are Douglas R. Shane, Hoofprints in the Forest: Cattle Ranching and the Destruction of Latin America's Tropical Forests (Philadelphia: Institute for the Study of Human Issues, 1986); Norman Myers, "The Hamburger Connection: How Central America's Forests Became North America's Hamburgers," Ambio 10:1 (1981), 3-8; Norman Myers and Richard Tucker, "Deforestation in Central America: Spanish Legacy and North American Consumers," Environmental Review 11:1 (1987), 55-72; James D. Nations and Daniel I. Komer, "Rainforests and the Hamburger Society," The Ecologist 17:4-5 (1982), 161-167; James D. Nations and Daniel I. Komer, "Indians, Immigrants, and Beef Exports: Deforestation in Central America," Cultural Survival Quarterly 6:2 (1982), 8-12. For a broader perspective of the world beef dilemma, see Jeremy Rifkin, Beyond Beef: The Rise and Fall of the Cattle Culture (New York: Dutton, 1992).
18. H. Jeffrey Leonard, Natural Resources and Economic Development in Central America (Washington: International Institute for the Environment and Development, 1987), 216; Guess, "Bureaucracy," 31.
19. Susan Place, "Export Beef Production and Development Contradictions in Costa Rica," Tijdschrift voor Economische en Sociale Geografie 76 (1985), 295. On the social harms, see George M. Guess, "Pasture Expansion, Forestry, and Development Contradictions: The Case of Costa Rica," Studies in Comparative International Development 14 (1979) and Augelli, "Modernization."

20. On tax incentives, see Place, "Export Beef." Cattle figures are from Augelli, "Modernization," 82.

21. Hall, Geographical Interpretation, 87; Carriere, "Crisis in Costa Rica," 188.

22. For LUC studies, see Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development: Exploring the Possibilities," Environmental Conservation 17 (1990), 355. For pasture figures, see Guess, "Pasture Expansion," 45.

23. Carriere, "Crisis in Costa Rica," 187.

24. Guess, "Pasture Expansion," 47.

25. John Vandermeer and Ivette Perfecto, "Slicing up the Rain Forest on Your Breakfast Cereal," The Humanist 55:5 (1995), 26. For an extended analysis of their thesis and more detailed information on the world banana dilemma, see Vandermeer and Perfecto, Breakfast of Biodiversity: The Truth About Rain Forest Destruction (Oakland: Food First Books, 1995).

26. Milena Fernández, "Banano genera problemas sanitarios y ecológicos," La Nación, 1 April 1993, 12A.

27. Vandermeer and Perfecto, "Slicing," 25.

28. As reported in Fernández, "Banano," 12A.

29. Vandermeer and Perfecto, "Slicing," 26; as reported in Fernandez, "Banano," 12A.

30. Jorge Cortés, personal interview, 15 July 1996 (San Pedro, Costa Rica).

31. Michelle Sheaf, "Banana Growers Cited in Massive Fish Kill," Tico Times 17 July 1992, 5. For more on pesticide abuse in banana plantations, see Lori Ann Thrupp, "Pesticides and Politics: Approaches to the Pest Control Dilemma in Costa Rica and Nicaragua," Latin American Perspectives (Fall 1988); Bonilla, Situación ambiental (especially section on "Abuso con los pesticidas"); Roxana Salazar, Actividad bananera en Costa Rica: Análisis legal e institucional (San José: AMBIO, 1993); Roxana Salazar, et al., Comercio y ambiente: Perspectivas desde la actividad bananera (San José: AMBIO, 1994); Roxana Salazar, chapter entitled "Sobre los plaguicidas" in Legislación y Ecología (San José: Libro Libre, 1991); L. Castillo Hilje, Lori Ann Thrupp, and Ineke Wesseling, El uso de plaguicidas en Costa Rica (San José: Editorial UNED, 1987); and William C. Holliday, Jr., "Profit & Progress, Pesticides & Poisoning."

32. From the Mata and Mata study in Fernández, "Banano," 12A. The IUCN study was reported in Michelle Sheaf, "Bananas Turn Green," Tico Times 3 July 1992, 1.

33. Sheaf, "Turn Green," 1; Bob Carlson, "Bananas Aren't Green Yet, Expert Says," Tico Times, 28; Cortés, interview.

34. Luis Fournier, personal interview, 19 July 1996 (San Pedro, Costa Rica).

35. Vandermeer and Perfecto, "Slicing," 25.

36. Hall, Geographical Interpretation, 151.

37. The quotation is from Craig McFarland, et al., "Establishing, Planning, and Implementation of a National Wildlands System in Costa Rica," in Jeffrey A. McNeeley and Kenton R. Miller, eds. National Parks, Conservation, and Development: The Role of Protected Areas in Sustaining Societies (Proceedings of the Third World Congress on National Parks) (Washington: Smithsonian Institution, 1984), 593. For more on land reform, see Nicolo Gligo, "El estilo de desarrollo agrícola de la América Latina de la perspectiva ambiental," in Sunkel and Gligo, eds. Estilos de desarrollo, 392.

38. For further information, see Tom Barry, Costa Rica: A Country Guide (Albuquerque: Inter-Hemispheric Education Research Center, 1991), 37; and Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), chapter on Costa Rica.

39. Carlos Campos, "Costa Rica: En busca de alternativas," in Ingemar Hedström, ed. La situación ambiental en Centroamérica y el Caribe (San José: Editorial DEI, 1989), 179. See also Weinberg, War on the Land, 100.

40. Nicolo Gligo, "El estilo de desarrollo agrícola," 392. See also, Place, "Export Beef," 295.

41. McFarland, et al., "National Wildlands System," 592.

42. Oscar Arias Sánchez, "Palabras del presidente de Costa Rica, en al XVII Asamblea General de la Unión Internacional para la Conservación de la Naturaleza y los Recursos Naturales," in Ingemar Hedström, ed. La situación ambiental, 300. For more background information on Costa Rican deforestation, see Anabelle Porras and Beatriz Villareal, Deforestación en Costa Rica: Implicaciones sociales, económicas, y legales (San José: Editorial Costa Rica, 1986).

43. B.E. Lemus, Costa Rica crisis: Desafío para el desarrollo (San José: CERTEDI, 1985), 109.

44. Luis Fournier Origgi, Ecología y desarrollo en Costa Rica (San José: Editorial UNED, 1981), 153; Calvo, "National Conservation Strategy," 355; Leonard, Natural Resources, 119; Barry, Costa Rica, 73.

45. Pasture expansion figures are from Augelli, "Modernization," 88; road expansion figures are from Leonard, Natural Resources, 212.

46. Lemus, Costa Rica crisis, 109; Hall, Geographic Interpretation, 194. Wood import estimate is from Calvo, "National Conservation Strategy," 355.

47. Alexander Skutch, A Naturalist in Costa Rica (Gainesville: University of Florida Press, 1971), 37-38.

48. Fundación Neotrópica, as quoted in Carriere, "Crisis in Costa Rica," 188. For a thorough discussion on precaristas, see Beatriz Villareal, El precarismo rural en Costa Rica, 1960-1980: Orígenes y evolución (San José: Editorial Papiro, 1983); and Beatriz Villareal, Precarismo campesinado y democracia (San José: FLACSO, 1992.)

49. The "one sixth" figure is in Weinberg, War on the Land, 106. Villareal, El precarismo, 100; Daniel Janzen, Guanacaste National Park: Tropical, Ecological, and Cultural Restoration (San Jose: Editorial UNED, 1986), 82; J. Christopher Brown, "The OTS: The Development of its Relationship with Costa Rica over Three Decades," unpubl. m.s., 1990, 12; Victor Dwyer, "Cheap Conservation at \$25 an Acre," Macleans (4 Apr. 1988), 52.

50. Guess, "Pasture Expansion," 47.

51. Guess, "Pasture Expansion," 44; Place, "Export Beef," 294.

52. Place, "Export Beef," 294; Guess, "Pasture Expansion," 49.

53. Virginia P. Laftwich, "Succession and Related Soil Changes in the Tropical Rainforest on the Osa Peninsula, Costa Rica," (prepared for the OTS and Costa Rican national park service, 1972), National Archives, series: Servicio Parques Nacionales, file no. 1357, p. 11.

54. McFarland, et al, "National Wildlands System," 593.

55. Augelli, "Modernization," 77.

56. Law No. 4465, Ley Forestal, Leyes, decretos, y resoluciones, 2 Sem. II Tomo (San José: Imprenta Nacional, 1969), 908-910.

57. Leonard, Natural Resources, 119.

58. Fournier, Ecología y desarrollo, 309; quotation is Hall's, Geographic Interpretation, 122; "one half" figure is from Wolfgang A. Hein, "Costa Rica y Nicaragua: Políticas ambientales desde perspectiva comparativa, B. Política ambiental--instituciones y tendencias en contextos políticos-económicos," in Inge-Mar Hedström, ed. La situación ambiental, 277.

59. Weinberg, War on the Land, 113; Joseph A. Tosi, "En 14 años terminarán con bosques nacionales," La Nación (20 March 1971), 4. The World Resources Institute figure is quoted in Marvin Barquero, "Costa Rica destroza sus bosques," La Nación (23 September 1990), 8A.

60. Fournier, Ecología y desarrollo, 153.

61. Hall, Geographical Interpretation, 194.

62. Fournier, personal interview, 19 July 1996 (San Pedro, Costa Rica).

63. Weinberg, War on the Land, 116.

Chapter 3: The Conservationist Response

1. Mario Boza, Guía de los parques nacionales de Costa Rica (San José: Servicio de Parques Nacionales, 1984), 7.

2. International Union for the Conservation of Nature, U.N. List of National Parks and Equivalent Reserves (Brussels: Hayez Publishers, 1971); FAO, A Manual for National Park Planning (Rome: FAO, 1976).

3. James Barborak, "El programa de planificación del Servicio de Parques Nacionales de Costa Rica," in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982), 116; Allen M. Young, Field Guide to the Natural History of Costa Rica (San Jose: LACSA, 1981), 29. A 1990 study prepared by researchers for the Ministry of Foreign Relations of Finland also found that Costa Rica had significantly more designated conservation areas than elsewhere in Central America. Its findings showed that Costa Rica had 1,496,000 hectares of conservation areas compared to 156,000 hectares in Nicaragua, and 880,000 hectares in Honduras. Guatemala's figures were un-

known and the study did not include Panama. See Markku Kanninen, et al., "Programa regional forestal para Centro América: Misión de identificación de proyectos" (21 May 1990), Archives of the Legislative Assembly (hereafter, ALA), proceedings of Law 7575, file no. 2.

4. Figures are as of December 1995 from national park headquarters at SINAC (Sistema de Areas de Conservacion) which is a division of MINAE (Ministerio de Ambiente y Energía), San José, Costa Rica.

5. Fundación Neotrópica and Conservation International, Costa Rica: Evaluación de la conservación de los recursos biológicos (San José: Fundación Neotrópica, 1988), 4.

6. Law No. 4465, Ley Forestal, Leyes, decretos, y resoluciones, 2 Sem. II Tomo (San José: Imprenta Nacional, 1969), 917; Mario Boza and Rolando Mendoza, The National Parks of Costa Rica (Madrid: INCAFO, 1981), 27.

7. The law is printed in Ricardo Zeledón, ed. Código ecológico (San José: Editorial Porvenir, 1992), 201-227. Quotation is Alexander Bonilla's in La situación ambiental (San José: Instituto del Libro [Ministerio de Cultura, Juventud, y Deportes], 1985), 63.

8. Boza and Mendoza, National Parks, 15.

9. Luis Fournier Origgi, Recursos naturales (San José: Editorial UNED, 1983), 92.

10. Mario Boza, testimony at hearings of the legislative Commission on the Affairs of Agriculture and Natural Resources, 28 July 1990; ALA, Law 7575, Acta (proceedings) no. 3, file no. 1, p. 62.

11. Boza and Mendoza, National Parks, 26.

12. Oscar Arias Sánchez, "Palabras del presidente de Costa Rica, en la XII Asamblea General de la Unión Internacional para la Conservación de la Naturaleza y los Recursos Naturales," in Ingemar Hedström, ed. La situación ambiental de Centro América y el Caribe (San José: Editorial DEI, 1988), 30.

13. Luis Fournier Origgi, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 44.

14. As quoted in Fournier, Desarrollo y perspectiva, 45.

15. Fournier, Desarrollo y perspectiva, 46.

16. Articles 1, 2, 4 of Law no. 13 (10 January 1939), ALA.
17. Ana María Tato, "Legislación de parques nacionales," unpubl. ms., 1982, National Archives, series: Servicio de Parques Nacionales [hereafter, SPN], file no. 698, p.1.
18. The standard works on José Figueres and the Second Republic are Charles D. Ameringer, Don Pepe: A Political Biography of José Figueres of Costa Rica (Albuquerque: University of New Mexico Press, 1978); Tomás Guerra, José Figueres: Una vida por la justicia social (Heredia, CR: Centro de Estudios Democráticos de América Latina, 1987); and Charles D. Ameringer, Democracy in Costa Rica (New York: Praeger, 1982).
19. The delegate was José A. Torres Moreira from the Ministry of Agriculture and Industries. For more information on Costa Rican participation at this conference, see Fournier, Desarrollo y perspectiva, 48.
20. Fournier, Desarrollo y perspectiva, 48-49.
21. Citation is from Article 14, Law 1540 as printed in Alexander Bonilla, Situación ambiental de Costa Rica (San José: Instituto del Libro [Ministerio de Cultura, Juventud, y Deportes], 1985), 61. Quotation is from Fournier, Desarrollo y perspectiva, 49.
22. Tato, "Legislación de Parques Nacionales," 1.
23. Articles 1, 2, 8, and 4 of Law 2790 (18 July 1961), ALA.
24. Articles 6 and 7 of Law 2790, ALA.
25. Records of the proceedings for Law 2790, ALA.
26. Both laws ratifying these conventions are printed in Zeledón, ed. Código ecológico, pp. 37-76. For more on CITES, see Gareth Porter and Janet Welsh Brown, Global Environmental Politics (Boulder: Westview Press, 1991), 21, 83-85. For additional analysis on the impact of the regional wildlife convention on Costa Rican park development, see Tato, "Legislación de parques nacionales," 1-2.
27. Program of the Primer Congreso Nacional sobre Conservación de Fauna Silvestre, San José, Costa Rica (14-19 July 1980), in National Archives, series: SPN, file no. 719.
28. Law 7174 as printed in Zeledón, Código ecológico, 88-97. For more on the status and description of current national wildlife refuges, see Tobías Meza Ocampo, Áreas silvestres de Costa (San Pedro, CR: Alma Mater, 1988).

29. James P. Rowles, Law and Agrarian Reform in Costa Rica (Boulder: Westview, 1985), 8-9. For further information, see Mitchell Seligson, Peasants of Costa Rica and the Development of Agrarian Capitalism (Madison: University of Wisconsin Press, 1980).

30. Rowles, Law and Agrarian Reform, 11.

31. Rowles, Law and Agrarian Reform, 9. For more on squatters or precaristas, see Beatriz Villareal, El precarismo rural en Costa Rica, 1960-1980: Orígenes y evolución (San José: Editorial Papiro, 1983). For more on the history of agrarian reform in this time period, see J. Riisman del, "Costa Rica: Self Image, Land Tenure, and Agrarian Reform, 1940-1965, M.A. Thesis, University of Maryland, 1972.

32. Bruce Masís, testimony before legislative committee, as quoted in Rowles, Law and Agrarian Reform, 17-18.

33. From ITCO statistics in Rowles, Law and Agrarian Reform, 211-212. For additional analysis, see Seligson, Peasants of Costa Rica and Villareal, El precarismo rural.

34. Chapters I, III, and VII of Law 2825 of 2 October 1961, ALA. The 1982 amended version of the colonization law can be found in Ricardo Zeledón, ed. Código agrario (San José: Editorial Porvenir, 1985), 63-103.

35. See Zeledón, ed. Código agrario, 68-73.

36. Their history in Costa Rica is told best by Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 107-110; and David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 3-10. Both authors based their information on interviews with Karen Mogensen.

37. Weinberg, War on the Land, 107.

38. Quoted in Wallace, Quetzal and Macaw, 7.

39. Ibid., 8.

40. Wallace, Quetzal and Macaw, 8. Weinberg (War on the Land 108) called Cabo Blanco "Central America's first nature reserve."

41. Mogensen quote is from Wallace, Quetzal and Macaw, 9; warden screening information is from Weinberg, War on the Land, 108, and Wallace, 54. Mogensen told Wallace that her husband's warden-screening process included extensive questioning about the candidates' interest in protecting nature: "He also asked

them, 'What are you going to say to a gringo if he comes and offers 100,000 colones for giving him permission to hunt a puma?' And, you know, in those conditions, many of them answered, 'Well, of course, one has to think about it.' But there were two of them that said, 'Of course not. That's the reason we're paid, so that will never happen.' My husband chose them and one of them is still there. He's been there eighteen years now."

42. Budowski to Wessberg, 27 July 1971; National Archives, series: SPN, file no. 888. On a carbon copy of the letter that he mailed to Mario Boza (then chief of the national parks division), Budowski handwrote "Mario, I have my doubts."

43. For more on William Walker and his filibusters, the standard works are Laurence Green, The Filibuster: The Career of William Walker (Indianapolis: Bobbs Merrell Co., 1937); Noel Bertam Gerson, Sad Swashbuckler: The Life and Times of William Walker (Nashville: T. Nelson, 1976); Frederic Rosengarten, Freebooters Must Die! The Life and Death of William Walker, the Most Notorious Filibuster of the Nineteenth Century (Wayne, PA: Haverford House, 1976); Charles H. Brown, Agents of Manifest Destiny: The Lives and Times of the Filibusters (Chapel Hill: University of North Carolina Press, 1980); and Rudy Wurlitzer, Walker (New York: Perennial Library, 1987). For more on Costa Rica's "national campaign" against Walker, see Victor Manuel Arroyo, Acusación ante la historia: Estados Unidos y la Campaña Nacional, 1856-57 (San José: Editorial Presbere, 1983); and Rafaél Obregon Loria, Costa Rica y la guerra contra los filibusteros (Alajuela, CR: Museo Histórico Cultural Juan Santamaría, 1991).

44. Much of the above information was derived from Boza, Guía de los parques, 6-7; Boza and Mendoza, The National Parks of Costa Rica, 24; Weinberg, War on the Land, 117; and Wallace, Quetzal and Macaw, 15-16.

45. Quotations are from David Carr, "A Comprehensive Analysis of the the Development of Costa Rica's National Park System: Draft Prospectus," unpubl. report dated 14 August 1980, National Archives, series: SPN, file no. 896, p. 2; Luis Fournier, Desarrollo y perspectiva, 62; and Sterling Evans, "The Development of an Environmental Conscience: A Conservation History of Costa Rica," M.A. Thesis, University of Kansas, 1992, 57.

46. Guillermo Yglesias, testimony at the Hearings of the Permanent Commission of Government and Administration of the Legislative Assembly, Acta (proceedings) no. 1, 19 Aug. 1968; ALA, Law no. 4465, expediente (dossier, hereafter exped.) no. 3515, file no. 1, p.37; Fournier, personal interview, 19 July 1996 (San Pedro, Costa Rica).

47. Yglesias to Legislative Assembly, 14 June 1968; ALA, Law no. 4465, exped. no. 3515, file no. 1, pp. 1, 5, 8.
48. Articles 1, 2, 9, 10, 15, 18, 74, 75, 80, 81, 93, 98, 99 of Law No. 4465, Ley Forestal, Leyes, decretos, 908-919.
49. Ibid., 908.
50. Yglesias to Legislative Assembly (see note 47), 5-8.
51. Yglesias testimony (see note 46), 37-40.
52. Ibid., 38-42.
53. Hearings of the Permanent Commission, Acta no. 2, 21 Aug. 1968, Law no. 4465, exped. no. 3515, file no. 1, pp. 44-47.
54. Ibid., 57, 73, 106
55. Ibid., 115.
56. From Actas no.'s 3, 4, and 5 in Hearings, 137, 147.
57. From Actas no.'s 1, 2, and 95 in Hearings, 37, 111, 160.
58. Acta 100 in Hearings, 349.
59. ALA, Law No. 4465, exped. no. 3515, file no. 2, pp. 401-421.
60. Ibid., 460, 482.
61. La Prensa Libre, 25 November 1969, 6.
62. ALA, Law 4465, exped. no. 3515, file no. 2, pp. 460, 482.
63. Ibid., 582. It is questionable if the other Latin American forestry laws were anything more than "paper" laws.
64. Ibid., 594.
65. La Prensa Libre, 24 November 1969, 21.
66. Ads cited were from La Nación, 25 November 1969, 57; and 24 November 1969, 42.
67. La República, 25 November 1969, 13; La Nación, 27 November 1969, 44.

Chapter 4: The Development of National Parks

1. L.D. Gómez and J.M. Savage, "Searchers on That Rich Coast: Costa Rican Field Biology, 1400-1980," in D.H. Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 10.

2. A pertinent study of this type of environmental legislation suggests that these kinds of bureaucratic divisions were typical of the conservation laws of many Latin American nations. "Public utility" and "national interest" were terms used to justify administration of forestry codes by development agencies. For more information, see Sergio Salcedo and José Ignacio Leyton, "El sector forestal latinoamericano y sus relaciones con el medio ambiente," in Osvaldo Sunkel and Nicolo Gligo, eds. Estilos de desarrollo y medio ambiente en la América Latina (Mexico City: Fondo de Cultura Económica, 1980).

3. Craig McFarland, Roger Morales, and James Barborak, "Establishing, Planning, and Implementation of a National Wildlands System in Costa Rica," in Jeffrey A. McNeeley and Kenton R. Miller, eds. National Parks, Conservation, and Development: The Role of Protected Areas in Sustaining Societies (proceedings of the Third World Congress on National Parks) (Washington: Smithsonian Institution, 1984), 593.

4. Robert Cahn, "Parks Bloom in Poorer Nations," Christian Science Monitor, 20 September 1972, 19.

5. The Boza quote is from David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 15. The Miller quote is from Robert Cahn and Patricia Cahn, "Treasure of Parks for a Little Country That Really Tries," Smithsonian 10:6 (September 1979), 68.

6. Cahn, "Parks Bloom," 19; National Archives, series: Servicio Parques Nacionales [hereafter, SPN], file no. 59.

7. SPN file no. 59; Wallace, Quetzal and Macaw, 16-17.

8. Mario Boza, Los parques nacionales de Costa Rica (San José: Servicio de Parques Nacionales, 1978), 2.

9. Boza statement is from an interview in Cahn and Cahn, "Treasure of Parks," 69. For more information on Ugalde's first assignment at Santa Rosa, see Wallace, Quetzal and Macaw, 17-18.

10. Ugalde statement is from Wallace, Quetzal and Macaw, 17. Boza statement is from Mario Boza, "Conservation in Action: Past,

Present, and Future of the National Park System of Costa Rica," Conservation Biology 7:2 (June 1993), 240.

11. Allen M. Young, Field Guide to the Natural History of Costa Rica (San Jose: LACSA, 1981), 29: Boza, "Conservation in Action," 241.

12. Mario Boza, "Costa Rica: A Case Study of Strategy in the Setting up of National Parks in a Developing Country," in Sir Hugh Elliot, ed. Proceedings of the Second World Conference on National Parks (Morges, Switzerland: IUCN, 1974), 189.

13. Karen Olsen de Figueres, personal interview, 29 June 1992 (Curridabat, Costa Rica).

14. In Wallace, Quetzal and Macaw, 18.

15. Cahn and Cahn, "Treasures of Parks," 69.

16. In Wallace, Quetzal and Macaw, 27-28.

17. In Cahn and Cahn, "Treasures of Parks," 69. See also Wallace, 28. Ugalde told Wallace that "we were barely born, and already we were being eliminated."

18. As quoted in Cahn and Cahn, "Treasures of Parks," 69.

19. Ibid.

20. As quoted in Wallace, Quetzal and Macaw, 19.

21. Boza, "Conservation in Action," 240.

22. Ibid.

23. Ibid.

24. For further information on the early history of these parks, see Mario Boza, Los parques nacionales; Boza, "Costa Rica: A Case Study;" James Barborak, "El programa de planificación del Servicio de Parques Nacionales de Costa Rica," in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982); and Luis Fournier, Recursos naturales (San José: Editorial UNED, 1983).

25. La República, 22 March 1971, 10.

26. Ibid.

27. As reprinted in La Nación, 21 March 1971, 42.

28. La República, 22 March 1971, 10. The text of Sutton's speech is found in SPN file no. 890.

29. Boza to Budowski, 23 November 1970, SPN file no. 888.

30. Ana María Tato, "Legislación de parques nacionales," unpubl. m.s., 1982, SPN file no. 698, pp. 2-3. For more information, see Kurt Kutay, "Cahuita National Park, Costa Rica: A Case Study in Living Cultures and National Park Management," in Patrick C. West and Steven R. Brechin, eds. Resident Peoples and National Parks: Social Dilemmas in International Conservation (Tucson: University of Arizona Press, 1991), 114-129.

31. From newspaper sources cited in Wallace, Quetzal and Macaw, 29.

32. Related to me by Karen Olsen de Figueres, personal interview.

33. Karen Olsen de Figueres, personal interview. On a related note, Wallace (Quetzal and Macaw, 29) tells how there were "stories of Doña Karen pressuring President Figueres to support conservation, for example, by delaying his breakfast until he signed some piece of legislation. . . . 'Don't listen to my wife,' Don Pepe once reportedly told a group of conservationists, 'she's a little crazy.'"

34. Personal interview. Regarding the meat donated to hospitals, information is from Wallace, Quetzal and Macaw, 30. Regarding Tortuguero, information is from Guillermo Cruz (of the CCC) to Julio Calleja (Costa Rican Ambassador to the United Nations), 23 June 1972, SPN file no. 65.

35. Personal interview.

36. Luis Fournier, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 69; Wallace, Quetzal and Macaw, 33-34. Boza and Ugalde had the active support of the Colegio de Biologos (Biologists' Association) which opposed the MAG decision to allow haying in Santa Rosa.

37. Boza, "Conservation in Action," 240.

38. Ibid., 241.

39. Robert Bridges (of the WWF) to Boza, 28 December 1971, SPN file no. 888.

40. Project Proposal, SPN file no. 888, pp. 1-2.

41. Ibid., 2-5.
42. Boza to Sutton, 10 May 1971, 24 Aug. 1971, SPN file no. 890.
43. "Resumen de la historia del Servicio de Parques Nacionales," n.a., n.d., SPN file no. 852, pp., 8-9.
44. Boza, "Conservation in Action," 241; Cahn, "Parks Bloom," 19; "Resumen de la historia," 9.
45. Boza to Myron Sutton (U.S. National Park Service), 13 June 1971, SPN file no. 890.
46. Boza to Gerardo Budowski, 27 January 1971, SPN file no. 888.
47. La Nación, 8 June 1971, 29.
48. "Resumen de la historia," 9; Boza, "Conservation in Action," 241.
49. Vaughn to Gerardo Budowski, 18 August 1971, SPN file no. 888.
50. Information on these three volunteers was taken from letters they wrote about their projects which are on file at the National Archives, series: SPN, file no.'s 890 and 888. Vaughn's work on Corcovado has been published in book form, see Christopher Vaughn, Parque Nacional Corcovado: Plan de manejo y desarrollo (Heredia, CR: Editorial Universidad Nacional, 1981).
51. Vaughn to Budowski (see footnote 34); Boza to U.S. Fish and Wildlife Service, 5 August 1971, SPN file no. 890.
52. Boza, "Costa Rica: A Case Study," (see footnote 14), 185; SPN, file no. 890; Kirk Koepsel, telephone interview, 13 August 1992.
53. Mario Rojas (a planner with the park service) to Gilberto Ugalde (Peace Corps liaison in Costa Rica), 6 June 1983, SPN, file no. 1207.
54. Boza to Budowski, 15 June 1971, SPN, file no. 888.
55. Visitation figures are from Cahn, "Parks Bloom," 19. Information on the California tourists is from a newspaper story cited in Wallace, Quetzal and Macaw, 30. For a more detailed discussion and comparison of these highland and lowland parks (their natural history, ecological zonation, etc.), see Wallace, Quetzal and Macaw, pp. 23-28.

56. Cahn, "Parks Bloom," 19. Luis Fournier, Ecología y desarrollo en Costa Rica (San José: Editorial UNED, 1981), 92.
57. Boza to Nicholls, 19 August 1971; and Nicholls to Boza, 6 October 1971, SPN file no. 888.
58. Boza, "Costa Rica: A Case Study," (see footnote 12), 185.
59. Cahn, "Parks Bloom," 19; Boza, "Costa Rica: A Case Study," 185.
60. For more information, see Mario Boza, Guía de los parques nacionales de Costa Rica (San José: Fundación de Parques Nacionales, 1984), 8-30; "Resumen de la historia," 10; and Wallace, Quetzal and Macaw, p. 44.
61. Mario Boza and Rolando Mendoza, The National Parks of Costa Rica (Madrid: INCAFO, 1981), 25; Wallace, Quetzal and Macaw, 46-49.
62. Wallace, Quetzal and Macaw, 50.
63. Alexander Bonilla, Situación ambiental de Costa Rica (San José: Instituto del Libro, [Ministerio de Cultura, Juventud, y Deportes], 1985), 61.
64. SPN file no. 888; Boza, "Conservation in Action," 241.
65. Above information was compiled from various correspondences in SPN file no.'s 890 and 1292.
66. SPN file no.'s 59, 891, and 1282.
67. Boza, "Conservation in Action," 240.
68. Wallace, Quetzal and Macaw, 19.
69. Ibid., 34-35.
70. Personality descriptions are from Wallace, 19. Quotation is from Cahn and Cahn, "Treasure of Parks," 70.
71. Above information was compiled from Mario Boza, personal interview, 9 July 1996 (San Pedro, Costa Rica); Cahn and Cahn, "Treasures of Parks," 70; and Wallace, Quetzal and Macaw, 19.

Chapter 5: Conservation Continued

1. Daniel Oduber Quirós in an interview with Andrew Reding, "Voices from Costa Rica," World Policy Journal 3:2 (Spring 1986), 328-329. In the question he posed to Oduber, Reding mistakenly stated, "Your administration was responsible for establishing the National Park system in Costa Rica. . . ." Of course it was the Figueres presidency under which the park system was started.

2. For more information, see Robert Cahn and Patricia Cahn, "Treasure of Parks for a Little Country that Really Tries," Smithsonian 10:6 (September 1979), 70; and David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 53.

3. Cahn and Cahn, "Treasures of Parks," 70. For an engaging discussion of Oduber's turn around on conservation issues, see Wallace, Quetzal and Macaw, 66-68.

4. Wallace, Quetzal and Macaw, 54. Wallace notes that Olof Wessberg of Cabo Blanco was opposed to Oduber's metropolitan system of small reserves because he thought the \$3.5 million could be better spent on protecting "primary forest." Wessberg doubted that the international conservation organizations that had contributed to Costa Rican conservation efforts would support the idea that their funds were being used for urban parks. What Wessberg failed to consider and what Wallace failed to analyze about this criticism, was that Costa Rica probably had little to no absolute "primary forest." More recent archaeological evidence suggests that most of Costa Rica's forests had been inhabited by humans at some point in time and that they had been cleared by small-scale burns for swidden agriculture. For more information, see William M. Denevan, "The Pristine Myth: The Landscape of the Americas in 1492," Annals of the Association of American Geographers 82:3 (1992), 369-385; and John W. Hoopes, "In Search of Nature: Imagining the Precolumbian Landscapes of Ancient Central America," unpubl. ms., University of Kansas, 1996.

5. Mario Boza and Rolando Mendoza, The National Parks of Costa Rica (Madrid: INCAFO, 1981), 25.

6. Ugalde quote is from an interview in Wallace, Quetzal and Macaw, 82. Allen Young, Field Guide to the Natural History of Costa Rica (San José: LACSA, 1981), 29.

7. For more information on these areas, see Mario Boza, Los parques nacionales de Costa Rica, (San José: Servicio de Parques Nacionales, 1978); Mario Boza, Guía de los parques nacionales de Costa Rica (San José: Fundación de Parques Nacionales, 1984);

Mario Boza, Costa Rica National Parks (Madrid: INCAFO, 1987); Boza and Mendoza, National Parks of Costa Rica; Tobías Meza Ocampo, Áreas silvestres de Costa Rica (San Pedro, CR: Alma Mater, 1988); and Joseph Franke, Costa Rica's National Parks and Preserves (Seattle: The Mountaineers, 1993).

8. Boza, Guía de los parques, 8-20.

9. Luis Fournier Origgi, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 68; Wallace, Quetzal and Macaw, 76-78.

10. Fournier, *ibid.* See also, Adelaida Cheverri, et al. Actas de la Reunión Centroamericana sobre Manejo de Recursos Naturales y Culturales, San José, 9-14 December 1974; Adelaida Cheverri, "Análisis de un sistema de reservas biológicas privadas en Costa Rica," M.S. thesis, University of Costa Rica/CATIE, 1979; Alfonso Mata, et al, eds. Primer Simposio Nacional sobre Contaminación Ambiental (proceedings), San José: Editorial Tecnológica de Costa Rica, 1980). One of Alfonso Mata's studies (co-authored with Leonardo Mata) is "Efectos de la expansión bananera sobre la salud humana y el sistema ecológico." See La Nación, 1 April 1993, 12A.

11. Christopher Vaughn, Parque Nacional Corcovado: Plan de manejo y desarrollo (Heredia, CR: Editorial de la Universidad Nacional, 1981), 31.

12. Gary Hartshorn, "Plants: Introduction," in Daniel Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 133.

13. Wallace, Quetzal and Macaw, 56-57.

14. Information here was compiled from Vaughn, Parque Nacional Corcovado, 15-20; Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 108; and Wallace, Quetzal and Macaw, 56-57.

15. Interviews are found in Weinberg, War on the Land, 108-109; and Wallace, Quetzal and Macaw, 57-61. Final quotations here are from Weinberg. For an engaging and very thorough review of the Weinberg murder mystery (including police reports and newspaper coverage), see Wallace, 59-65.

16. La República, 21 August 1975, 1.

17. Wallace, Quetzal and Macaw, 69.

18. Cahn and Cahn, "Treasure of Parks," 70; Wallace, Quetzal and Macaw, 70.

19. Cahn and Cahn, "Treasure of Parks," 70. For a thorough account of the Corcovado relocation process, see Wallace, Quetzal and Macaw, 69-73.

20. Ugalde to Ken Thelan (of the USNPS), 31 May 1976, National Archives, series: Servicio Parques Nacionales [hereafter, SPN], file no. 1282.

21. For additional information, see Fournier, Desarrollo y perspectiva, 68; Wallace, Quetzal and Macaw, 78-79; and Franke, Costa Rica's National Parks, 168.

22. Leon and Budowski quotations are from Wallace, Quetzal and Macaw, 80, 81. Visitation figure is from the Servicio de Parques Nacionales as quoted in Bonilla, Situación ambiental, 137.

23. Boza and Mendoza, National Parks of Costa Rica, 25; Cahn and Cahn, "Treasures of Parks," 70; Wallace, Quetzal and Macaw, 76, 80-83.

24. Compiled from miscellaneous correspondences in National Archives, SPN file no. 892.

25. The Garihan-Ugalde correspondences are in SPN files nos. 892, 893.

26. The National Parks Act (Law no. 6084 of 17 August 1977) creating the SPN is in Ricardo Zeledon, ed. Código ecológico (San José: Editorial Porvenir, 1992), 84-87. See also, Fournier, Desarrollo y perspectiva, 63; and Mario Boza, "Conservation in Action: Past, Present, and Future of the National Park System of Costa Rica," Conservation Biology 7:2 (1993), 242.

27. Archives of the Legislative Assembly [hereafter, ALA], Law 6084, file one, p. 1.

28. Boza to Muñoz, 21 August 1972, National Archives, series: SNP, file no. 1250.

29. Francisco Terán Valls (Secretary of the Cámara de Industrias de Costa Rica) to Muñoz, 19 July 1972; and Asociación de Estudiantes de Biología to Muñoz, 22 July 1972, in ALA, Law 6084, file no. 1, pp. 43, 45.

30. Statement of Mario Boza to the Comisión de Asuntos Sociales (Acta [hearing] 181), 13 November 1973, ALA, Law 6084, file no. 1, pp. 83-84.

31. Ana María Tato, "Legislación de parques nacionales," unpubl. ms., 1982, National Archives, series: SPN, file no. 698, pp. 3-5.

32. ALA, Law no. 6084, file no. 2, pp. 336, 419, 441, 444.

33. Ibid., 461.

34. Cahn and Cahn, "Treasure of Parks," 71; Tato, "Legislación de parques," 2; Wallace, Quetzal and Macaw, 40.

35. Cahn and Cahn, 71. See also Wallace, 41.

36. Park visitation figures are from SPN records, reprinted in Bonilla, Situación ambiental, 137. Correspondence information is from National Archives, series: SPN file no. 892. Many requests for marine turtle nesting information also came in during those years.

37. Ugalde to Editor-in-Chief of The Washingtonian, 19 April 1977, SPN file no. 892.

38. Ugalde to Ken Thelan (USNPS Division of International Affairs), 31 May 1976; Ugalde to Robert C. Milne, 18 August 1976, SPN file no. 1282.

39. Alvaro Ugalde, "Proyecto: Ley de Creación del Instituto de Recursos Naturales y Conservación Ambiental" (report to the Legislative Assembly), 27 Jan. 1976, in SPN file no. 19, p. 1. Luis Fournier, Desarrollo y perspectiva, 67; Boza in Wallace, Quetzal and Macaw, 78. For more on deforestation during this time frame, see Annabelle Porras and Beatriz Villareal, Deforestación en Costa Rica: Implicaciones sociales, económicas, y legales (San José: Editorial Costa Rica, 1986), 15-62. For more on forest reserves, see Rodrigo González, "Establecimiento y desarrollo de reservas forestales en Costa Rica," Agronomía Costarricense 3:2 (Sept. 1979), 161-166.

40. For more information on these conferences, see Fournier, Desarrollo y perspectiva, 64-69; and Adelaida Cheverri, et al., Actas de la Reunión Centroamericana sobre Manejo de Recursos Naturales y Culturales, San José, 9-14 December 1974.

41. Jorge Manuel Dengo Obregón, "Recursos naturales" in Simposio la Costa Rica del Año 2000 (proceedings) (San José: Ministerio de Cultura, Juventud, y Deportes, 1977), 519, 537.

42. "Mesa redonda," in Simposio la Costa Rica del Año 2000, 563, 571, 606, 621, 637.

43. Ley de Creación del Instituto de Recursos Naturales y Conservación Ambiental, in National Archives, series: SPN, file no. 19, pp. 1-2.

44. Ugalde, "Proyecto: Ley de Creación del INDERENA," SPN file no. 19, pp. 2-3.

45. Ugalde to Ken Thelan, 31 May 1976, SPN file no. 1282.

46. From SPN files nos. 892 and 893.

47. Park acreage figures are from SPN records in SPN file no. 852. Oduber's statement is in Andrew Reding, "Voices from Costa Rica," 328-329.

48. In Wallace, Quetzal and Macaw, 68.

49. Wallace, Quetzal and Macaw, 86.

Chapter 6: Conservation Through Crisis

1. Alvaro Ugalde, personal interview, 25 June 1992 (San José, Costa Rica).

2. Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development: Exploring the Possibilities," Environmental Conservation 17:4 (Winter 1990), 355; Tom Barry, Costa Rica: A Country Guide (Albuquerque: The Inter-Hemispheric Education Research Center, 1991), 32. For more detailed information on the debt crisis, see Helio Fallas, Crisis económica en Costa Rica: Un análisis económico de los últimos años (San José: Editorial Nueva Década, 1982; and Edelberto Torres Rivas, et al., Costa Rica: Crisis y desafíos (San José: Editorial DEI, 1987).

3. Calvo, "National Conservation Strategy," 355.

4. Jean Carriere, "The Crisis in Costa Rica: An Ecological Perspective" in Michael Redclift and David Goodman, eds. Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 192; Rodrigo Carazo, Carazo: Tiempo y marcha (San José: Editorial UNED, 1989), 513; Calvo, "National Conservation Strategy," 355.

5. "El programa de parques nacionales durante la administración Carazo," n.a., n.d. report in National Archives, series: Servicio Parques Nacionales [hereafter, SPN], file no. 852, pp. 8-9; Carazo, Tiempo y marcha, 479.

6. "El programa de parques," 9; Mario A. Boza, Guía de los parques nacionales de Costa Rica (San José: Fundación de Parques Nacionales, 1984), 18-98.

7. Rodrigo Carazo, personal interview, 29 June 1992 (Escazú, Costa Rica).

8. Information on Carazo's childhood background is from his memoirs in Carazo, Tiempo y marcha, 17-21 (quotation is from page 17). His statement linking faith with conservation is from the prologue he wrote in Mario Boza and Rolando Mendoza, The National Parks of Costa Rica (Madrid: INCAFO), 6.

9. Quotation is from Carazo, Tiempo y marcha, 18. Other information was gathered from personal interview with Carazo.

10. Staffer quotation is from Argentina Molina Morris (former personal secretary to President Carazo), personal interview, 29 February 1992 (Chicago, IL). Subsequent quotations are from Carazo, Tiempo y marcha, 513.

11. Economic comparison information is from World Bank and Central Bank of Costa Rica data in Carazo, Tiempo y marcha, 504-512. Thomas Lovejoy, "El teatro ecológico y el drama sociológico" in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982), 160.

12. James Barborak, "El programa de planificación del Servicio de Parques Nacionales de Costa Rica" in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings), 117; José R. Mora to Michael Wright (of the World Wildlife Fund), 18 January 1982, SPN file no. 1098; Alvaro Ugalde, personal interview.

13. José María Rodríguez in David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 93.

14. Luis Fournier, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 74; Ugalde, personal interview.

15. AID Loan Project no. 515-0145, SPN file no. 1336. For more information on international loans, see Mario Boza, "Conservation in Action: Past, Present, and Future of the National Park System of Costa Rica," Conservation Biology 7:2 (June 1993), 245.

16. Boza and Mendoza, National Parks of Costa Rica, 26.

17. Articles 1, 4, and 6 of the Bylaws of the Fundación de Parques Nacionales, SPN file no. 698; David Rains Wallace,

Quetzal and Macaw, 100, 106. Wallace (p. 100) states that the FPN's first donation was for \$300,000 from the CCC, when in fact (according to FPN records on file at the National Archives), it was for 300,000 colones or approximately \$6,200 at the 48.5 colones to the dollar exchange rate of 1982.

18. Archie Carr to Mario Boza, 11 May 1982; and Mora to Alvaro Ugalde, 11 June 1982, SPN file no. 1098.

19. Mora to Michael Wright (of the WWF), 18 January 1982; and Mora to Arne Dalfelt (of NORAD), 12 March 1982, SPN file no. 1098.

20. SPN file no. 1098.

21. Carazo to Emilio Garnier (Minister of the Treasury), 11 Jan. 1982; and Carazo to Stone, 9 March 1982, SPN file no. 852.

22. For more information, see Boza, Los parques nacionales, 66; Boza and Mendoza, National Parks of Costa Rica, 254-264; Boza, Guía de los parques, 54-57; Joseph Franke, Costa Rica's National Parks and Preserves (Seattle: The Mountaineers, 1993), 160-162; and Wallace, Quetzal and Macaw, 88-89.

23. Rodrigo Carazo, personal interview. Mario Boza and Rolando Mendoza (The National Parks of Costa Rica, 25) write that Carazo was "the first president in the history of the country who visits the national parks to rest from his exhausting work."

24. Boza, Los parques nacionales, 66. For more information, see Franke, Costa Rica's National Parks, 161. He writes that the Thompson treasure was supposed to be the famed "treasure of Lima" that was entrusted to Thompson by the clergy and uppercrust of colonial Lima, Peru, so that their belongings would not become the property of the underclasses during a successful peasant revolt. According to the story, Thompson killed the guards posted on the ship to guard the treasure and then rifled it off to Isla del Coco. He was later captured by the Spanish who hoped he would lead them to the stash. But he eluded them and it is not known if he returned to the island.

25. Franke, Costa Rica's National Parks, 161; Boza, Los parques nacionales, 66.

26. Astacio to José María Rodríguez (new acting SPN chief), 28 May 1980, SPN file no. 754.

27. Michael S. Kaye to Carazo, 18 January 1982, and Carazo to Kaye, 20 January 1982, SPN file no. 852; Gomez to Carazo, 2 March 1982, SPN file no. 1098; Osturk to Carazo, 12 December

1981, and SPN denial, 18 March 1982, SPN file no. 852. (The denial was based on an article in Law 6084 which prohibited people from residing in national parks.)

28. Fonseca to SPN, 16 July 1982, SPN file no. 734.

29. From Franke, Costa Rica's National Parks, 162.

30. Jorge Cortés, personal interview, 15 July 1996 (San Pedro de Monte de Oca, CR).

31. Karen Olsen de Figueres, personal interview, 29 June 1992 (Curidabat, CR).

32. Rodrigo Carazo, personal interview, 29 June 1992 (Escazú, CR).

33. As reported by Margot Hornblower, "Protecting Resources on an Oasis of Democracy," Washington Post (4 April 1979), A-18.

34. Carazo, Tiempo y Marcha, 297. Information here is also from "El programa de parques nacionales durante la administración Carazo," n.a., n.d., SPN file no. 852, pp. 2-3.

35. Mora to Michael Wright (WWF), 18 January 1982, SPN file no. 1098.

36. In Wallace, Quetzal and Macaw, 89-90.

37. The full story of the zoo case is found in Wallace, Quetzal and Macaw, 84-85.

38. Statements and telegram message are in Wallace, 86-87.

39. Portions of the Carr interview are found in Wallace, 84-87.

40. Ugalde to Michael Wright, 11 July 1979, SPN file no. 905.

41. "El programa de parques nacionales durante la administración Carazo," SPN file no. 852, pp. 3, 5, and 9.

42. Argentina Molina Morris, personal interview, 29 February 1992 (Chicago, IL); Carazo to Fonseca, 24 September 1981, and Carazo to Odio Benito, 24 September 1981, SPN file no. 941.

43. Luis Diego Gómez to Carazo, 2 March 1982, SPN file no. 1098; David Clark, "La Selva Biological Station: A Blueprint for Stimulating Tropical Research" in Alwyn Gentry, ed. Four Neotropical Rainforests (New Haven: Yale University Press, 1991), 16.

44. Carazo, Declaration of Palo Verde National Park, Executive Decree no. 1154-A, 13 June 1980, in SPN file no. 1090.

45. Carazo, Tiempo y marcha, 479.

46. Luis Fournier, Desarrollo y perspectiva, 66.

47. Ugalde and Barborak statements are in Wallace, Quetzal and Macaw, 95-97. While Barborak considered travel in the Talamancas difficult, he discovered that the urban environment of San Jose could be equally, if not more, frustrating. According to a letter he wrote to the SPN (SPN file no. 892) shortly after he arrived from the United States, he discovered that most of his luggage and camping gear had been stolen while waiting to be checked at customs at the San Jose airport.

48. "El programa de parques nacionales durante la administración Carazo," SPN file no. 852, p. 6. Barborak statement is in Wallace, 95. The 1979 Carazo-Royo statement was re-printed in the Presidential Agreement Establishing La Amistad, April 1981, SPN file no. 941.

49. "El programa de parques," 6-7.

50. Barborak in Wallace, 96.

51. Boza, Guía de los parques, 98.

52. Luis A. Tenorio Alfaro, Las comunidades indígenas de Costa Rica (San José: Imprenta Nacional, 1988), 46. For anthropological information on the Indians of the Talamancas, see Carlos Borge and Victoria Villalobos, Talamanca en la encrucijada (San José: Editorial UNED, 1994).

53. Barborak in Wallace, 96. Barborak mentioned that the going was rough when travelling to the remote areas with the Indian guides. They "don't understand the meaning of switchbacks; they just go straight up the slopes, and they go really fast."

54. "Inventario de los recursos naturales y culturales y la característica socio-económica y elaboración del plan de manejo y desarrollo del propuesto Parque Internacional La Amistad, Costa Rica-Panamá," SPN file no. 941.

55. Mora to Michael Wright (WWF), 18 January 1982, SPN file no. 1098.

56. Presidential decree, SPN file no. 941; Silberman statement in Tico Times, 19 March 1982, 1.

57. Wallace, Quetzal and Macaw, 97.
58. Carazo, Tiempo y marcha, 478; Wallace, 97-98.
59. List of correspondents, Kaye to Carazo, and Silberman to P.H.C. Lucas (of the New Zealand Department of Lands and Surveys) are all in SPN file no. 852.
60. Boza in Tico Times, 15 October 1982, 1; Rodríguez in introduction to Boza and Mendoza, National Parks of Costa Rica, 19.
61. Information on Boza's manual is in SPN file no. 698. Barborak statement is from Barborak, "El programa de planificación" (see footnote number 12), 107.
62. Christopher Vaughn, Parque Nacional Corcovado: Plan de manejo y desarrollo (Heredia, CR: Editorial Universidad Nacional, 1981), 24. According to SPN file no. 852, interestingly enough, Alvaro Ugalde sent a copy of the new management plan for Poás Volcano National Park to First Lady Estrella Zeledón de Carazo in February of 1982.
63. Salazar to Rodríguez, 22 October 1980, SPN file no. 707.
64. The tax incentive plan and the Train quotation are from Hornblower, "Protecting Resources on Oasis," A-18.
65. The pesticide letter incident is reported in Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 105. See also Bill Hall and Joshua Karliner, "A Forgotten War: The Assault on Central America's Environment," Greenpeace 12:4 (1987). Jorge Cortés quotation is from personal interview, 15 July 1996.
66. Carazo to Hernán Sáenz, 7 June 1979, SPN file no. 819.
67. Yadira Mena, et al., "Investigación: Educación ambiental," SPN file no. 700, pp. 3, 11-12.
68. George Reiger, "A New Beginning," Field and Stream 86:9 (January 1982), 70. Reiger went on to say, "Clearly the greatness of a politician has nothing to do with the size of the nation he administers, but with the size of his sense of responsibility to its future."
69. See Primer Simposio de Parques Nacionales y Reservas Equivalentes (proceedings) (San José: Editorial UNED), 1982. CIDA information is from "El programa de parques," SPN file no. 852, p. 6; and Estrella Guier, "La conservación como elemento educacional para el desarrollo" in Primer Simposio, 71.

70. Decree no. 12194-OP, January 1981, SPN file no. 859.
71. SPN-DGF coordination plan is in SPN file no. 724; programs coordinated with universities (a very thick file) is SPN file no. 1037; and Mesoamerican Workshop information is in SPN file no. 1255.
72. Wallace, Quetzal and Macaw, 99; Boza and Mendoza, National Parks of Costa Rica, 25.
73. Karen Olsen de Figueres, personal interview.
74. Hornblower, "Protecting Resources on an Oasis," A-18.
75. Reding, "Voices from Costa Rica," 335.
76. Leonard Bird, Costa Rica: The Unarmed Democracy (London: Sheppard Press, 1984), 175.
77. Basic Documents, University for Peace (San José: Imprenta Nacional, 1981), 53. Information on the above paragraph was also drawn from Robert Muller, personal interview, 20 July 1996 (Ciudad Colon, CR). For more on the World Peace Prize, see "Premio Mundial para Costa Rica y para el Presidente de la República," La Nacion, 3 July 1981, 9-A.
78. Beatriz Villareal, El precarismo rural en Costa Rica, 1960-1980: Orígenes y evolución (San José: Editorial Papiro, 1983), 100-101. See also Beatriz Villareal, Precarismo campesinado y democracia (San José: FLACSO, 1992), 27-35.
79. Reding, "Voices from Costa Rica," 333-334.
80. Carazo in introduction to Boza and Mendoza, National Parks of Costa Rica, 7.
81. None of Mario Boza's books or articles deals with the issue at all. Alexander Bonilla's Situación ambiental de Costa Rica (1985) devotes thirty-seven pages to the subject (most of which are reprinted documents and personal correspondences) but is charged emotionally and heatedly against Carazo. Luis Four-nier's seminal work on the development of the Costa Rican conservationist movement (Desarrollo y perspectiva, 1991) barely mentions it at all (one paragraph split between pages 74 and 75) which is highly surprising since the controversy was probably the biggest rallying cry to date within the movement. David Rains Wallace in his "story" of the national parks (Quetzal and Macaw, 1992) provides a mere two paragraphs on it (p. 91) and mistakenly writes that the amount of land withdrawn was "5,000 acres" (it was in fact, 17,300 acres [7,000 hectares by archival accounts]).

Rodrigo Carazo avoids the subject entirely in his memoirs Tiempo y marcha (1989).

82. For a list of the property owners, see Bonilla, Situación ambiental, 148.

83. "Carazo anuncia nueva política agropecuaria," La Nación, 27 July 1981, 2.

84. Tato to Carazo, 25 May 1981, SPN file no. 1090.

85. Boza and Rodríguez to Carazo, 27 May 1981, *ibid.*

86. Freer to Tato, 24 June 1981, *ibid.*; La Nación, "Consideran inconveniente segregar parque nacional," 9 July 1981, 4-A.

87. Executive Decree 12.765-A, 2 July 1981, *ibid.* On the same day, Nicaraguan Ambassador to Costa Rica Roberto Leal Ocampo invited Carazo to Managua to partake in the official celebration of the second anniversary of the Sandinista Revolution and the twentieth anniversary of the FSLN. Carazo had declined to attend the event in 1980 when he learned Fidel Castro would be there (stating he "didn't want to share [the stage] with a dictator"), and begged off this invitation also saying he was too busy to go--the Palo Verde matter, the economy, and other issues were obviously occupying his time. (See "Carazo invitado a Nicaragua," La Nación, 2 July 1981, 10-A; and "Carazo no ira a Nicaragua," La República, 2 July 1981, 2.) Nonetheless, Ambassador Leal told this author (personal communication, 30 June 1996 [Managua, NIC]) that he had the highest esteem for Carazo because of his emphasis on peace, his support for the Sandinistas, and his work in preserving the environment.

88. Bonilla to Carazo, 1 July 1971; and Carazo to Bonilla, 7 August 1971, SPN file no. 1090.

89. "Gobierno pretende segregar Parque Nacional Palo Verde," La Nación, 6 July 1981, 6-A.

90. "Consideran inconveniente," 4-A; "Batalla para impedir al gobierno destruir parques," La República 14 July 1981, 15.

91. "Segregación de Palo Verde es ilegal afirma Oduber," La Nación, 14 July 1981, 18-A.

92. La República, 23 July 1981, 4; La Nación, 29 July 1981, 6-A.

93. La Nación, 15 July 1981, 6-A, 14-A.

94. "Segregan 7.000 ha. del Parque Nacional de Palo Verde," La Nación, 17 July 1981, 8-A.
95. "Publicado decreto que segrega 7 mil ha. de Palo Verde," La República, 17 July 1981, 3.
96. "Piden cercenar otros parques nacionales," La Nación, 19 July 1981, 1-A; "Dirección Forestal no permitió segregación en La Carpintera," La República, 27 July 1981, 2.
97. La Nación, 12 July 1981, 4-A.
98. "Bloquearon la salida de Carazo en Ciudad Neilly," La Nación, 18 July 1981, 8-A.
99. "Protesta ante Casa Presidencial por segregación del Parque Palo Verde," La República, 28 July 1981, 3; "Universitarios protestan por la ley contra Palo Verde," La Nación, 28 July 1981, 4-A.
100. "Listo decreto para segregar Palo Verde," La República, 10 July 1981, 2. For the file of letters and petitions, see SPN file no. 1090. "Requiem por un parque" (no author given) was amongst the miscellany in this file. See also Bonilla, Situación ambiental, 175. His quote is from page 139.
101. "Noticias sobre Palo Verde son infundados, dice Carazo," La Nación, 22 July 1971, 19-A. The SPN report is in SPN file no. 852. The government ad is in La Nacion, 24 July 1981, 34-A.
102. "Dice asesor renunciante: Decreto de Carazo es un golpe grave al país," La República, 23 July 1981, 24. Also, Mario Boza, personal interview, 9 July 1996 (San Pedro de Montes de Oca, CR).
103. "Carazo pide compra de más tierra en Palo Verde," La República, 24 July 1981, 5. An ad in this paper on the same day alerted readers that Carazo was planning a televised address to the nation for that evening. This author looked in vain for any coverage of such a speech (it was not reported in any newspapers) to see if Carazo broached the Palo Verde issue. Given the date of the address it can be imagined that he did. Likewise on the same day the President dealt with another environmental matter--alternate energy sources--by meeting with Joseph Kennedy (son of the late Robert F. Kennedy) of the Citizens' Energy Company in the United States. Kennedy was in Costa Rica to offer advice for the Instituto Tecnológico's study of alternate energy.
104. Archives of the Legislative Assembly, Proyecto de Ley - 80, Acta (proceedings) of Session 51, 2 August 1981, pp. 13-14. The full text of the proposed law, but not debate on it, can be

found in Bonilla, Situación ambiental, 158-160.

105. Ibid., 14-15, 25-26, 28.

106. Ibid., 28, 31.

107. The complete series of court events and records are recorded in Bonilla, Situación ambiental, 149-155.

108. More research is needed on the rice-growers' sudden decision. There is nothing on it in the "Palo Verde" file in the SPN archives (file no. 1090). The brief information here was given to me by Mario Boza, personal interview, 9 July 1996. The quotation is from Boza, Guía de los parques, 22.

109. Kirk Koepsel, telephone interview, 13 August 1992; Boza, personal interview, 9 July 1996.

110. Alexander Bonilla, "Segregación del Parque Nacional Palo Verde," 1, 9, in SPN file no. 1090. See also Bonilla, Situación ambiental, 176.

111. As quoted in Wallace, Quetzal and Macaw, 98.

112. The appointments are listed in Morales to Rodriguez, 21 June 1982, SPN file no. 806. The Nature Conservancy information is in SNP file no. 1098. (See also Wallace, Quetzal and Macaw, 104.) The book gifts are mentioned in Ugalde to Luis Alberto Monge, 11 May 1982, and Ugalde to Doris de Monge, 17 May 1982, SPN file no. 852.

113. Ugalde quotation is from Wallace, Quetzal and Macaw, 99. Letter to Vice Minister is Ugalde to Manuel Carballo, 13 October 1982, SPN file no. 1098. Letter to president is Ugalde to Monge, 22 February 1983, SPN file no. 1201.

114. FNP, "Plan de Prioridades," 18 February 1982, SPN file no. 1098.

115. As quoted in an interview by Wallace, Quetzal and Macaw, 101.

116. Ana María Tato to José María Rodríguez, 16 November 1982, SPN file no. 698.

117. Wallace, 101; Tato to Rodríguez, *ibid.*

118. The Carr interview is quoted in Wallace, 102.

119. Ugalde to Junta Directiva de FNP, 18 May 1982, and Ugalde to Stone, 5 November 1982, SNP file no. 1098; World Wildlife

Fund to Vera Varela, 20 December 1984, SPN file no. 901.

120. As quoted in Wallace, 104.

121. Memo from Boza to FPN staff, 13 July 1983, SPN file no. 1201. "Toward Environmental Advocacy in Costa Rica: A National Environmental Awareness Program," 1 September 1983, SPN file no. 1201. Ugalde quote is in Wallace, 104-105.

122. Wallace, 105-106, 150.

123. Boza Guadamuz to Monge, 27 September 1982; and Rodríguez to Viria Jiménez (Casa Presidencial), 13 December 1982, SPN file no. 852.

124. Unemployment figures are from Ministry of Industry, Energy, and Mines, "Proyecto de Control y Empadronamiento de Ojeros en la Península de Osa y Punta Burica," August 1983, SPN file no. 790, p. 20. First study cited was conducted by Dan Janzen and is reported in Wallace, 135. For permit examples, see SPN file nos. 789 and 790. The second study cited is Bill Weinberg, War on the Land, 110.

125. "Proyecto de Control," 1, 4, 26. The minutes of the committee meeting are under the title "Ley de Protección del Medio Ambiente" dossier 7853, SPN file no. 770.

126. The Janzen study is cited in Wallace, 134.

127. Information on the Rural Guard activity is from Weinberg, 110. Ugalde quote is from Wallace, 132.

128. For more information on Fundación Neotrópica, see Luis Fournier, Desarrollo y perspectiva, 79-80, and Wallace, 153-154.

129. Ugalde's ideas for the speech and a copy of Monge's speech are in SPN file no. 1098.

130. "Volvamos a la Tierra" information is from Ugalde to Manuel Carballo (Ministry of the Presidency), 13 October 1982, SPN file no. 1098. Forestry education project is from "La educación Forestal a nivel universitario," 14 October 1982, SPN file no. 851. Rodríguez report is "Informe Anuario," 13 October 1983, SPN file no. 804.

131. Bonilla, Situación ambiental, 221. For complete coverage of the oleoducto situation, see Alexander Bonilla, Un oleoducto en Costa Rica: Todo lo que debe saber pero no se ha dicho (San José: ASCONA, 1983); and Marco Vinicio Sánchez, El oleoducto en

Costa Rica: Aspectos ambientales y geopolíticos (San José: SIAP, 1984).

132. Bonilla, Situación ambiental, 230; Bonilla, personal interview, 22 July 1996 (San José, CR).

133. Bonilla, Situación ambiental, 266.

134. Weinberg, War on the Land, 112; Wolfgang A. Hein, "Costa Rica y Nicaragua: Políticas ambientales desde perspectiva comparativa, B. Política ambiental--instituciones y tendencias en contextos políticos-económicos diferentes" in Ingemar Hedström, ed. La situación ambiental en Centro América y el Caribe (San José: Editorial DEI, 1989), 275.

135. Information for above paragraphs was gathered from Andrew Reding, "Costa Rica: Democracy Model in Jeopardy," 310-311; Bill Weinberg, War on the Land, 117-118; Rodrigo Carazo, Tiempo y marcha, 297-298. Final quote is from Reding, "Voices from Costa Rica," 331.

136. For more information, see Martha Honey, Hostile Acts: United States Policy in Costa Rica in the 1980s (Gainesville: University of Florida Press, 1994); Robert Kagan, A Twilight Struggle: American Power and Nicaragua, 1977-1990 (New York: Free Press, 1996); Joshua Karliner, "Contragate: The Environmental Connection," EPOCA Update (Summer 1987) 4-9; Leslie Cockburn, Out of Control: The Story of the Reagan Administration's Secret War in Nicaragua, the Illegal Arms Pipeline, and the Contra-drug Connection (New York: Atlantic Monthly Press, 1987); Jonathan Marshall, et al. The Iran-Contra Connection: Secret Teams and Covert Operations in the Reagan Era (Boston: South End Press, 1987); and Weinberg, War on the Land, 118-120.

137. Karliner, "Contragate," 9; Weinberg, 119.

138. Wallace, 146, 153, 185-186.

Chapter 7: Restructuring and Decentralizing

1. Oscar Arias Sánchez, "Palabras del Presidente de Costa Rica, en la XVII Asamblea General de la Unión Internacional para la Conservación de la Naturaleza y Recursos Naturales, Costa Rica" in Ingemar Hedström, ed. La situación ambiental en Centro América y el Caribe (San José: Editorial DEI, 1990), 302.

2. Daniel Janzen, Guanacaste National Park: Tropical, Eco-

logical, and Cultural Restoration (San José: Editorial UNED, 1986), 13.

3. First quote was to Constance Holden, "Regrowing a Dry Tropical Forest," Science 234:4778 (14 Nov. 1986), 810. Second quote was to Thomas A. Lewis, "Daniel Janzen's Dry Idea," International Wildlife 19:1 (Jan./Feb. 1989), 34.

4. Daniel Janzen, Guanacaste National Park: Tropical, Ecological, and Cultural Restoration (San Jose: Editorial UNED, 1986), 9.

5. Lewis, "Dry Idea," 34.

6. Janzen, Guanacaste, 81.

7. Holden, "Regrowing," 810; Lewis, "Dry Idea," 36. For further details, see Alston Chase, "The Janzen Heresy," Condé Nast Traveller (Nov. 1989), 122-127.

8. Janzen, Guanacaste, 9. See also Lewis, "Dry Idea," 32-36. Quotation is Janzen's in Holden, "Regrowing," 809.

9. Janzen, Guanacaste, 9.

10. In Marjorie Sun, "Costa Rica's Campaign for Conservation," Science 29:4846 (18 March 1988), 1368. See also, Daniel Janzen, "Costa Rican Parks: A Researcher's View," Nature Conservancy News 34:1 (Jan./Feb. 1984), 22-23.

11. Lewis, "Dry Idea," 36.

12. First quote is from Holden, "Regrowing," 809; second quote is from Sun, "Costa Rica's Campaign," 1368.

13. The reporter's quote is from Sun, "Costa Rica's Campaign," 1368.

14. In David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 161-162. For more information, see Lewis, "Dry Idea," 35-36; Blake Edgar, "Seeds of Change in the Dry Forest," Pacific Discovery 42:4 (Fall 1989), 22-37; William O. McLarney, "Guanacaste: The Dawn of a National Park," Nature Conservancy News 38:1 (Jan./Feb. 1988), 11-16; and Wallace, Quetzal and Macaw (Chapter Six "Boosting the GNP"), 157-170.

15. Holden, "Regrowing," 810.

16. Sun, "Costa Rica's Campaign," 1367.

17. Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development," Environmental Conservation 17:4 (Winter 1990), 357; Tom Barry, Costa Rica: A Country Profile (Albuquerque: Inter-Hemispheric Education Research Center, 1991), 33; Michael Redclift and David Goodman's introduction in Michael Redclift and David Goodman, eds. Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 132.

18. Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 114; Sun, "Costa Rica's Campaign," 1367.

19. In Sun, "Costa Rica's Campaign," 1367, 1369.

20. Ibid., 1369.

21. Sergio Salas, "La planificación del sector turístico, recreación y el sistema de áreas silvestres," in Primer Simposio de Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982), 28; Daniel Janzen, "The Eternal External Threat," in Michael E. Soulé, ed. Conservation Biology: The Science of Scarcity and Diversity (Sunderland, MA: Sinauer and Associates, Inc., 1986), 302.

22. First quote is from Janzen, Guanacaste, 9; second Janzen quote is from interview in Wallace, Quetzal and Macaw, 166. Other information here is from Weinberg, War on the Land, 120.

23. As cited in Weinberg, War on the Land, 121.

24. Ibid., 121, 103-104, 110-111. The study cited is Michael I. Niman, "Death of a Small Country: It's the U.S. Presence That's Killing Costa Rica," The Progressive (August 1988). Yet another Army Corp project, called "Bridges for Peace," took place in the Sarapiquí district of lowlands northeastern Costa Rica in 1992 that one study (John Vandermeer and Ivette Perfecto, "Slicing up the Rainforest on Your Breakfast Cereal," The Humanist 55:5 [Sept./Oct. 1995], 27) said had been "officially dubbed 'Bridges for Bananas,' as the construction so obviously focus[ed] on improving infrastructure for the export of bananas."

25. Cited in Weinberg, 110.

26. Cited in Wallace, 144.

27. Cited in Weinberg, 112.

28. Alexander Bonilla, personal interview, 22 July 1996 (San Jose, CR). Bonilla addresses many of these issues in his most recent book (co-authored with Tobías A. Meza Ocampo), Pro-

blemas de desarrollo sustentable en América Central: El caso de Costa Rica (San José: Alma Mater, 1994)..

29. Cited in Wallace, 154.
30. Eric Ulloa, personal interview, 25 June 1992 (San José).
31. *ibid.*
32. In Wallace, 182.
33. For more information on the URC's, see Wallace, 170-180.
34. In Wallace, 175.
35. See Sun, "Costa Rica's Campaign," 1368. Umaña statement is in "Solo quedan 400,000 ha. de bosques," La Nación, 6 October 1987, 2C.
36. Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development: Exploring the Possibilities," Environmental Conservation 17:4 (winter 1990), 356. See also, Luis Fournier, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 88-90.
37. Calvo, "Conservation Strategy," 356-357.
38. H. Jeffrey Leonard, Natural Resources and Economic Development in Central America (Washington: International Institute for the Environment and Development, 1987), 195; María Elena Carvajal in Tico Times, 5 June 1992, 24.
39. As cited in Jean Carriere, "The Crisis in Costa Rica: An Ecological Perspective," in Michael Redclift and David Goodman, eds. Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 186. For LUC current status, see Katiana Murillo, "Use Capacity Maps: A Guide for Land Ordering in Costa Rica," Neotrópica 5:2 (1996), 5-7.
40. Cited in Sun, "Costa Rica's Campaign," 1367.
41. Arias, "Palabras del Presidente," 302, 300.
42. Cited in Sun, 1368. For more background on Costa Rica's deforestation dilemma, see Anabelle Porrás and Beatriz Villareal, Deforestación en Costa Rica: Implicaciones sociales, económicas y legales (San José: Editorial Costa Rica, 1986).
43. Weinberg, War on the Land, 115-116.

44. Archives of the Legislative Assembly [hereafter, ALA], Law 7032, expediente [dossier] no. 9600, 8 September 1983 and 14 November 1983, pp. 31, 155.

45. Bonilla to Hernán Garrón (commission chair), 25 May 1983, *ibid.*, p. 46. Other statements here are from commission hearings, *ibid.*, p. 39, 94, 155, 228.

46. Roxana Salazar Cambroneró, Legislación y ecología en Costa Rica (San José: Libro Libre, 1991), 163. I thank both Roxana Salazar (of AMBIÓ, an environmental law organization) and Leonel Núñez (attorney for the Legislative Assembly and director of the ALA) for their time in personally explaining this matter to me, as it does not yet appear in any of the Costa Rican conservation literature.

47. Roxana Salazar, personal interview, 23 July 1996 (San José, CR); Luis Fournier, personal interview, 19 July 1996 (San Pederó de Monte de Oca, CR).

48. ALA, Law 7174, exped. 10,940, pp. 1, 2, 65.

49. *Ibid.*, 3, 6, 17-18. Law 7174 can be found in its entirety in Ricardo Zeledón, ed. Código ecológico (San José: Editorial Porvenir, 1992), 201-270.

50. *Ibid.*, 64, 68, 70, 87-88, 91.

51. *Ibid.*, 85, 97.

52. Ley 7174, Transitorio VI, in Zeledón, ed. Código ecológico, 226.

53. Cited in Weinberg, 124.

54. ALA, Law 7575, File 1, Actas [hearings] 2, 3 of the Special Commission, pp. 12, 39, 54-58.

55. *Ibid.*, 58-63.

56. *Ibid.*, 64.

57. *Ibid.*, 65-70, 74.

58. *Ibid.*, 72-77, 97.

59. *Ibid.*, Acta 5, p. 168; Acta 22, pp. 706-708.

60. *Ibid.*, Acta 5, p. 168.

61. As cited in Wallace, 188-191.

62. Calderón as cited in Michelle Sheaff, "Earth Council for Costa Rica," Tico Times, 19 June 1992, 1. Conference information was compiled from Earth Council literature (brochures) at its headquarter offices in San José.

63. Oscar Alvarez, "La cuestión ecológica," La Nación, 26 June 1992, 15A.

64. Cited in Michelle Sheaff, "Costa Rica to Propose Earth Council," Tico Times, 5 June 1992, 1.

65. Michelle Sheaff, "Summit Organizer Charged with Violating National Laws," Tico Times, 5 June 1992, 1.

66. Personal conversation with Earth Summit staff-member (who asked that his name not be included here), 17 July 1996 (San José, CR).

67. Miscellaneous Earth Council brochures. Former MIRENEM minister Alvaro Umana also currently serves as a president of the Center for Environmental Study (Centro de Estudio Ambiental, CEA) in San José.

68. Salas, "La planificación," 28.

69. Carriere, "The Crisis in Costa Rica," 193-194.

70. Luko Quirós, "El movimiento conservacionista: Nuevas rutas o viejas pautas?," in Ingemar Hedström, ed. La situación ambiental, 311; Hein, "Políticas ambientales," 276.

71. Eric Ulloa, personal interview, 25 June 1992.

72. Misc. SINAC brochures.

73. Rene Castro Salazar, "Proyecto de Reestructuración del Ministerio de Recursos Naturales, Energía, y Minas," (official MINAE document), 200. (I thank Edwin Arias V., chief of human resources at MINAE, for bringing this document to my attention and for loaning me his personal copy of it.)

74. Misc. SINAC brochures.

75. Cited in Wallace, 180.

76. Alvaro León, personal interview, 11 July 1996 (San José).

77. Anselmo Flores Reyes (President of the Asociación de Desarrollo Integral Indígena de la Reserva de Terraba), personal interview, 19 July 1996 (San José).

78. Eric Ulloa, personal interview, 4 July 1996 (San José).
79. Salazar interview, 23 July 1996; Fournier interview, 19 July 1996.
80. Jorge Cortés, personal interview, 15 July 1996 (San Pedro de Monte de Oca, CR); Gerardo Budowski, personal interview, 18 July 1996 (Curidabat, CR).
81. Alexander Bonilla, personal interview, 22 July 1996 (San José).
82. Above material is cited in Wallace, 180, 185-185.
83. Mario Boza, personal interview, 9 July 1996 (San Pedro de Monte de Oca, CR).
84. Madeline Carvajal Angulo (at FNP), personal interview, 9 July 1996 (San José); Luis Paniagua Ch. (at Fundación Neotrópica), 8 July 1996 (Curidabat, CR).
85. René Castro, "Proyecto de Reestructura," 4, 258; Rigoberto Ugalde, "Opinion del funcionario," Boletín (SINAC) 1:2 (1996), 4.
86. ALA, Law 7575 file 11, Acta de la Sesión Plenaria no. 117, Jan. 1996, p. 3761.
87. Law 7575 Ley Forestal, La Gaceta 158:72 (16 Apr. 1996), 1-4.
88. Ibid., 3.
89. ALA, Law 7575 file 11, p. 3761.
90. Ibid., 3788, 3858, 3862.

Chapter 8: Environmental Education

1. Estrella Guier, "La conservación como elemento educacional para el desarrollo," in Primer Simposio de los Parques Nacionales y Reservas Biológicas (proceedings) (San José: Editorial UNED, 1982), 63.
2. Ibid., 65; Roxana Salazar Cambronero, Legislación y ecología en Costa Rica (San José: Libro Libre, 1991), 207.
3. Cited in Salazar, 208.

4. See Ley Forestal, Leyes, decretos, y resoluciones vol. II (San Jose: Imprenta Nacional, 1969), 908.

5. Guier, 65.

6. For more information on the history of CONICIT, see Luis Fournier, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 64.

7. Quirós, Luko. "El movimiento conservacionista: Nuevas rutas o viejas pautas?," in Ingemar Hedström, ed. La situación ambiental en Centro América y el Caribe (San José: Editorial DEI, 1989), 309. For more on UNA's program, see UNA brochures and course guides; Luis Fournier, Ecología y desarrollo en Costa Rica (San José: Editorial UNED, 1981), 26-31; and Fournier, Desarrollo y perspectiva, 83.

8. "CORENAMA, Objetivos Generales," in National Archives, series: Servicio de Parques Nacionales [hereafter, SPN], file no. 778; Ugalde to Jorge Falla (director of UNA School of Environmental Sciences), 12 Nov. 1984, National Archives, series SPN, file no. 778.

9. Guier, "La conservación como elemento educacional," 62. For more information on UNED's program, see UNED brochures and course guides; Fournier, Ecología y desarrollo, 26-31; and Fournier, Desarrollo y perspectiva, 83. On the UNED fire management plan, see María Elena Mora (of SPN) to Chester Zelaya (of UNED), 21 Aug. 1984, and Zelaya to Mora, 8 Sept. 1984, National Archives, series: SPN, file no. 778. For more on CIDA, see Guier, "La conservación como elemento educacional," 68; and Fournier, Desarrollo y perspectiva, 83.

10. For information on the Technology Institute's environmental engineering program, see the Institute's brochures and course guides; and Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development: Exploring the Possibilities," Environmental Conservation 17:4 (winter 1990), 357-358. For more on the University of Peace's environmental programs, see its brochures and course guides; and University for Peace Basic Documents (San José: Imprenta Nacional, 1981), 53.

11. For more on CEMEC, see Guier, "La conservación como elemento educacional," 66-68; and Fournier, Desarrollo y perspectiva, 83-84. Information on CLEA here was derived from miscellaneous papers in National Archives, series: SPN, file no. 1201.

12. For more on the public school involvement in national parks, see Mario Boza, Guía de los parques nacionales de Costa Rica (San José: Fundación de Parques Nacionales, 1984), 6. In-

formation on the school ecology club is from Michelle Sheaff, "School Forms First Ecology Club," Tico Times, 5 June 1992, 10.

13. FECON, Directorio de organizaciones, instituciones y consultores en el sector de recursos naturales en Costa Rica, (San José: FECON, 1994), xxv-xxvii, 70-71, 73, 77, 82.

14. For more information, see Chapter 5, pp. 172-173, or the proceeding of the conference, Jorge Manuel Dengo Obregón, ed. Costa Rica del Año 2000 (San José: Ministerio de Cultura, Juventud, y Deportes, 1977).

15. Shirley Christian, "There's a Bonanza for Nature in Costa Rica, but its Forests Are Too Besieged," New York Times, 29 May 1992, A6.

16. See Wolfgang A. Hein, "Costa Rica y Nicaragua: Políticas ambientales desde perspectiva comparativa, B. Política ambiental-- instituciones y tendencias en contextos políticos-económicos diferentes," in Ingemar Hedström, ed. La situación ambiental, 274.

17. Gómez's criticism is found in L.D. Gómez and Jay Savage, "Searchers on that Rich Coast: Costa Rican Field Biology, 1400-1980," in D.H. Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 6. Other criticisms cited here were made by George Guess, "Bureaucracy and the Unmanaged Forest Commons in Costa Rica (or Why Development Does Not Grow on Trees)," Working Paper No. One, University of New Mexico, 1979, 32; Hein, "Costa Rica y Nicaragua," 273; and Eric Ulloa (former assistant to the Minister of MIRENEM), 25 June 1992 (San José).

18. Jaime Hurtubia, "Ecología y desarrollo: Evolución y perspectivas del pensamiento ecológico," in Osvaldo Sunkel and Nicolo Gligo, eds. Estilos de desarrollo y medio ambiente en la América Latina (Mexico City: Fondo de Cultura Económica, 1980), 195; Wolfgang Hein, "Costa Rica y Nicaragua: Políticas ambientales desde una perspectiva comparativa, C. Problemas ecológicos-- orígenes socio-políticos y perspectivas para el futuro," in Hedström, ed. La situación ambiental, 283; Guier, "La conservación como elemento educacional," 61.

19. Rodrigo Carazo, personal interview, 29 June 1992 (Escazú, CR); Luis Fournier, Recursos naturales (San José: Editorial UNED, 1983), 198.

20. Olga Brenes, "La situación ambiental de Costa Rica," in Tomás Guerra, ed. Ecología y política en América Latina: Consecuencias de la industrialización y el desarrollo sobre la ecología (San José: CEDAL, 1984), 70; Salazar, Legislación y ecología, 207, 210.

21. Gerardo Budowski, "La eficacia del movimiento a favor de la conservación de los areas silvestres: Una opinión desde adentro," in Primer Simposio de los Parques Nacionales, 167.

22. Gómez and Savage, "Searchers on that Rich Coast," 10.

23. Budowski, "La eficacia del movimiento a favor de la conservación," 167. For further corroboration, see Hein, "Costa Rica y Nicaragua (B)," 275-276.

24. Mario Boza, "Costa Rica: A Case Study of Strategy in the Setting up of National Parks in a Developing Country," in Sir Hugh Elliot, ed. Proceedings of the Second World Conference on National Parks (Morges, Switz.: IUCN, 1974), 189; Douglas Cuillard, "La interpretación en los parques nacionales: Una forma directa de crear conciencia conservacionista," in Primer Simposio de Parques Nacionales, 121.

25. Yadira Mena, et al. "Investigación: Educación ambiental," SPN report, National Archives, series: SPN, file no. 700, pp. 1, 11-13.

26. See Taller Regional Mesoamericano de Interpretación y Educación Ambiental information in SPN file no. 1255.

27. From course syllabus in SPN file no. 778.

28. 1983 Annual Report, in SPN file no. 804.

29. Kirk Koepsel (former Peace Corps volunteer to Costa Rica), telephone interview, 13 August 1992. Information on Peace Corps training manual "Manuel sobre Interpretacion y Educacion Ambiental" is in SPN file no. 1255.

30. Guier, "La conservación come elemento educacional," 68; Susan Place, "The Impact of National Park Development on Tortuguero, Costa Rica," Journal of Cultural Geography 9:1 (fall/winter 1988), 47.

31. Rodrigo Carazo, personal interview; Boza, "Costa Rica: A Case Study," 183; Mario Boza, "Conservation in Action: Past, Present, and Future of the National Park System of Costa Rica," Conservation Biology 7:2 (June 1993), 246; Budowski, "La eficacia del movimiento a favor de la conservación," 166.

32. Koepsel, interview; Karen Olsen de Figueres, personal interview, 29 June 1992 (Curidabat, CR).

33. Petitions dated 22 Nov. 1984 are in SPN file no. 778.

34. Carlos Sandi to Alvaro Ugalde, 7 Nov. 1984, SPN file no.

778; Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 123.

35. See Craig McFarland, et al. "Establishing, Planning, and Implementation of a National Wildlands System in Costa Rica," in Jeffrey A. McNealey and Kenton R. Miller, eds. National Parks, Conservation, and Development: The Role of Protected Areas in Sustaining Societies (proceedings of the Third World Congress on National Parks) (Washington: Smithsonian Institution, 1984).

36. Daniel Janzen, Guanacaste National Park: Tropical, Ecological, and Cultural Restoration (San José: Editorial UNED, 1986), 13.

37. Luis Fournier, personal interview, 19 July 1996 (San Pedro de Monte de Oca, CR); Gerardo Budowski, personal interview, 18 July 1996 (Curidabat, CR).

38. Alexander Bonilla, personal interview, 22 July 1996 (San José); Orlando Castillo, personal interview, 22 July 1996 (Zapote, CR).

Chapter 9: The Non-Governmental Approach

1. Karen Olsen de Figueres, personal interview, 29 June 1992 (Curridabat, CR).

2. See FECON, Directorio de Organizaciones, Instituciones, y Consultores en el Sector de Recursos Naturales en Costa Rica (San José: FECON, 1994), vii-xvi. For further analysis on the history and role of Costa Rican NGO's, see Luis Fournier, Desarrollo y perspectiva del movimiento conservacionista costarricense (San José: Editorial de la Universidad de Costa Rica, 1991), 79-81.

3. Mario Boza, "Conservation in Action: Past, Present, and Future of the National Park System of Costa Rica," Conservation Biology 7:2 (June 1993), 247; FECON, Directorio, xxv-xxvii.

4. For more on the Colegio de Biólogos, see L.D. Gómez and J.M. Savage, "Searchers on that Rich Coast: Costa Rican Field Biology, 1400-1980," in D.H. Janzen, ed. Costa Rican Natural History (Chicago: University of Chicago Press, 1983), 7; and Fournier, Desarrollo y perspectiva, 79.

5. Alexander Bonilla, La situación ambiental de Costa Rica (San José: Ministerio de Cultura, Juventud y Deportes, 1985), 83; Brochure from ASCONA office.

6. Information here is from Bonilla, La situación, 129-237; and Alvaro Ugalde, personal interview, 25 June 1992. (San José). Study cited is Bill Weinberg, War on the Land: Ecology and Politics in Central America (London: Zed Books, 1991), 114. For further analysis, see Carloyn Hall, Costa Rica: Geographical Interpretation in Historical Review (Boulder: Westview Press, 1985), 89.

7. Bonilla, La situación, 92-113, 233-237. For more on the oleoducto controversy, see Alexander Bonilla, Un oleoducto en Costa Rica: Todo lo que debe saber pero no se ha dicho (San José: ASCONA, 1983); and Marco Vinicio Sánchez, El oleoducto en Costa Rica: Aspectos ambientales y geopolíticos (San José: SIAP, 1984).

8. For more information on the ASCONA/U.S. Aid dilemma, see Weinberg, War on the Land, 114. The Peace Corps statement is from Kirk Koepsel, telephone interview, 13 Aug. 1992. Bonilla's thoughts on ASCONA's collapse are from his book La situación, 230-233; and from the author's personal interview, 22 July 1996 (San Jose). The final study quoted is Wolfgang Hein, "Costa Rica y Nicaragua: Políticas ambientales desde perspectiva comparativa, B. Política ambiental--instituciones y tendencias en contextos políticos-económicos diferentes," in Ingemar Hedström, ed. La situación ambiental en Centro América y el Caribe (San José: Editorial DEI, 1989), 275.

9. From ASCONA brochures. See also, Beatrice Blake and Anne Becher, New Key to Costa Rica (San Jose: Publications in English, S.A., 1991), 39; and FECON, Directorio, 15.

10. FECON, Directorio, 83.

11. Ibid., 93.

12. AECO, "Nuestro perfil," unpubl. m.s. at AECO headquarters, 1-2.

13. Ibid., 1-2, 8; AECO, "Proyecto de desarrollo institucional," Part 3: Recuento histórico y diagnóstico socioambiental, unpubl. m.s. at AECO headquarters, 9-21.

14. AECO, "Nuestro perfil," 1, 3; FECON, Directorio, 29; Alvaro León, personal interview, 17 July 1996 (San José).

15. FECON, Directorio, 58, 78. See bibliography for a list of works by Roxana Salazar.

16. For more information on these groups, see FECON, Directorio, 2, 3, 17, 26-27, 40, 47. The article quoted is Catherine Knight, "ARBOFILIA Builds a Lasting Legacy," Tico Times 5 June

1992, 10.

17. FECON, Directorio, iii, 74. For more on FECON's objectives and goals, see Directorio, iii-vii.

18. Mario Boza, "Conservation in Action," 246.

19. Jean Carriere, "The Crisis in Costa Rica: An Ecological Perspective," in Michael Redclift and David Goodman, eds. Environment and Development in Latin America: The Politics of Sustainability (Manchester: Manchester University Press, 1991), 198.

20. For more on the First Central American Conference on the Environment, see Bill Hall, "Central Americans Gather to Confront Environmental Crisis," EPOCA Update (summer 1987), 1, 10. EPOCA is affiliated with Friends of the Earth. The IUCN's name has been changed to the World Conservation Union, although it retains its "IUCN" logo.

21. Ugalde, personal interview.

22. Luko Quirós, "El movimiento conservacionista: Nuevas rutas o viejas pautas?," in Ingemar Hedström, ed. La situación ambiental, 311; Wienberg, War on the Land, 109.

23. Alexander Bonilla, personal interview, 22 July 1996 (San Jose).

24. Carlos Brenes Castillo, "Costa Rica: Desarrollo forestal campesino," in Ingemar Hedström, ed. La situación ambiental, 169.

25. Carolyn Hall, Costa Rica: A Geographical Interpretation in Historical Review (Boulder: Westview Press, 1985), 194; B.E. Lemus, Costa Rica crisis: Desafío para el desarrollo (San José: CERTEDI, 1985), 109-110.

26. Knight, "ARBOFILIA Builds a Lasting Legacy," 10. For alternative agriculture program, see Wolfgang A. Hein, "Costa Rica y Nicaragua," in Ingemar Hedström, ed. La situación ambiental, 275-278; On TEPROCA, see Weinberg, War on the Land, 106-107.

27. Carlos Campos, "Costa Rica: En busca de alternativas," in Ingemar Hedström, ed. La situación ambiental, 177-179.

28. Campos, 179; Weinberg, 103; Brenes, 169.

29. William Soto in introduction to María Eugenia Bozzoli de Wille, El indígena costarricense y su ambiente natural (San José: Editorial Porvenir, 1986), 6; Bozzoli de Wille, 8.

30. María Eugenia Bozzoli de Wille, personal interview, 25 June 1992 (San Pedro de Montes de Oca, CR).

31. Mario Alvarado Sánchez (CONAI), personal interview, 19 July 1996 (San José). For more anthropological information, see Luis A. Tenorio Alfaro, Las comunidades indígenas de Costa Rica (San Jose: CONAI, Imprenta Nacional, 1988); Alfredo González Chaves and Fernando Gonzalez Vasquez, Poblados amerindios de Costa Rica (San Jose: Editorial de la Universidad de Costa Rica, 1992); Victoria Villalobos and Carlos Borge, Talamanca en la encrucijada (San José: Editorial UNED, 1994). For a useful discussion of indigenous understanding of ecology in Latin America, see Fernando Mires, El discurso de la naturaleza: Ecología y política en América Latina (San José: Editorial DEI, 1990), 77-91.

32. FECON, Directorio, 75, 18, 66; Mario Alvarado, interview.

33. Anselmo Flores Reyes, personal interview, 19 July 1996 (San Jose).

34. "Talamanca's Sweet Success," n.a., Nature Conservancy 47:1 (Jan./Feb. 1997), 14-15.

35. Ibid.

36. Mario Alvarado, interview; Crespo in David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 175-176.

37. Crespo and Ortiz in Wallace, Quetzal and Macaw, 176, 178; Alvarado, interview. Crespo also notes that Indians have started eating more chicken and pork to supplement their protein intake which has reduced some of their hunting needs. For more on "quetzal soup," see Wallace, p. 95.

38. Alvarado, interview; Carl Hoffman, Viajes por Costa Rica (San Jose: Ministerio de Cultura, Juventud, y Deportes, 1976), 205; Gerardo Budowski, personal interview, 18 July 1996 (Curridabat, CR).

39. Alvarado, interview; "Costa Ricans to Join Summit Fight for Native Rights," Tico Times 12 June 1992, 24; "Indians March in Protest," Tico Times 10 July 1992, 4.

40. Alvarado, interview; "Marcha Indígena Nacional" agenda from CONAI office.

41. As reported by Magally Batista, "Indígenas pugnan por fondos de CONAI," Al Día 15 July 1996, 3.

42. Ibid.

43. Alvarado, interview; Budowski, interview.

Chapter 10: Oro Verde!: Ecotourism for Economic Growth

1. Mario Boza, Guía de los parques nacionales de Costa Rica (San José: Fundación de Parques Nacionales, 1984), 6. For a thorough discussion of the history of these "tourism" taxa, see Carole Hill, "The Paradox of Tourism in Costa Rica," Cultural Survival Quarterly 14:1 (1990), 16-18. For more on "scientific tourism," see Jan G. Laarman and Richard R. Perdue, "Science Tourism in Costa Rica," Annals of Tourism Research 16:2 (1989), 205-215.

2. Cited by Tamara Budowski, "Ecotourism Costa Rican Style," in Valerie Barzetti and Yanina Rovinski, eds. Toward a Green Central America: Integrating Conservation and Development (West Hartford, CT: Kumarian Press, 1992), 48. For more on Costa Rican ecotourism, see Budowski's essay, or in its original Spanish version, "Ecoturismo a la tica," in Hacia una Centroamérica verde (San José: Editorial DEI, 1990); Rolando Mendoza, "Ecoturismo en Costa Rica," Biocenosis 3 (1990), 14-16; and Yanina Rovinski, "Private Reserves, Parks, and Ecotourism in Costa Rica," in Tensie Whelan, ed. Nature Tourism: Managing for the Environment (Washington: Island Press, 1991). For information on ecotourism in general, the standard work is Elizabeth Boo, Ecotourism: The Potentials and Pitfalls, vols. I and II (Washington: World Wildlife Fund, 1990). On Latin America in general, see Michele Zebich-Knos, "Ecotourism: Toward a Policy of Economic Development and Environmental Balance in Latin America," in Stuart Nagel, ed. Latin American Development and Public Policy (New York: St Martin's Press, 1994).

3. As cited in David Rains Wallace, The Quetzal and the Macaw: The Story of Costa Rica's National Parks (San Francisco: Sierra Club Books, 1992), 15.

4. Figures are from Banco Central and ICT as reported in Hill, "Paradox of Tourism," 14; Budowski, "Ecoturismo Costa Rican Style," 52; and Maria Elena Carvajal, "Without a Tourism Plan, Costa Rica Could Kill the Goose," Tico Times 5 June 1992, 24.

5. Hill, "Paradox of Tourism," 16.

6. Budowski, "Ecoturismo Costa Rican Style," 55.

7. Ibid., 55-56.

8. The studies are cited in Rovinski, "Private Reserves, Parks, and Ecotourism," 54-55; and Wallace, Quetzal and Macaw, 119-120.

9. Rovinski, 56. Slogans were noted by author from billboards and advertisements in travel magazines.

10. Katiana Murillo, "Tourism with an Environmental Conscience," Neotrópica 2:5 (1996), 18-19.

11. Article 4 of Law 1,917, as cited in Roxana Salazar Cambro-nero, Legislación y ecología en Costa Rica (San José: Libro Libre, 1991), 197-198. For further analysis on the ICT law and how it relates to tourism, see Salazar, pp.196-199.

12. Cited in Hill, "Paradox of Tourism," 16; and Rovinski, "Private Reserves, Parks, and Ecotourism," 50-51. For more information, see Jan G. Laarman and Richard R. Perdue, "Tropical Tourism as Economic Activity: OTS in Costa Rica," Southeastern Center for Forest Economics Research, FPEI Working Paper No. 33 (Durham, NC: North Carolina State University and Duke University, 1988).

13. Rovinski, "Private Reserves, Parks, and Ecotourism," 51-52. For more on return travellers, see Jan Laarman, "A Survey of Return Visits to Costa Rica by OTS Participants and Associates," Working Paper, Raleigh: North Carolina State University, 1987.

14. For more on the history of Monteverde, see Joseph Tosi, "A Brief History of the Tropical Science Center's Monteverde Cloud Forest Preserve," unpubl. ms., Monteverde Office. For its relation to ecotourism, see Rovinski, "Private Reserves, Parks, and Ecotourism," 39-43; Hill, "Paradox of Tourism," 15; and Wallace, Quetzal and Macaw, 117-118.

15. Figures are compiled from Rovinski, "Private Reserves, Parks, and Ecotourism," 41; "Santuario Biológico del Bosque Nublado de Monteverde," n.a., n.d., unpubl. report in National Archives, series: Servicio de Parques Nacionales [hereafter, SPN] file no. 811; Tosi, "A Brief History," 8; and records at the Monteverde office for the 1995 figure.

16. For more on the Advisory Commission, see Salazar, Legislación y ecología, 200.

17. "Sustainable Tourism Pioneers Give Visitors Nature," Tico Times, 2 April 1993, spec. suppl. p. 15.

18. In Wallace, Quetzal and Macaw, 120-121.

19. Rovinski, "Private Reserves, Parks," 46-47.

20. Information here was gathered from agency ads and brochures; and Rovinski, 47.

21. See Rovinski, 49; and Marengo ads.

22. Cited in Rovinski, 49.

23. Rovinski, 47; and Horizontes ads.

24. Budowski, "Ecotourism Costa Rican Style, 52; Tom Barry, Costa Rica: A Country Guide (Albuquerque: Inter-Hemispheric Education Research Center, 1991), 81; ICT ads. One of the books on the subject that LACSA published was Allen M. Young's Field Guide to the Natural History of Costa Rica in 1981. For other popular guides to Costa Rica, see Joseph Franke, Costa Rica's National Parks and Preserves (Seattle: The Mountaineers, 1993); Paul Glassman, Costa Rica Guide (Washington: Open Road Publishers, 1994); and Harry S. Pariser, Adventure Guide to Costa Rica 3rd edit. (Edison, NJ: Hunter Publishing, Inc., 1996).

25. Boza to Budowski, 11 Jan. 1972, National Archives, series: SPN, file no. 888.

26. Both the Boza and Ugalde statements are cited by Wallace, Quetzal and Macaw, 118.

27. Alvaro Ugalde, personal interview, 25 June 1992 (San Jose).

28. Rovinski, 54-55.

29. Tamara Budowski, "Ecotourism Costa Rican Style," 53.

30. Analysis of national tourism and figures on Tortuguero are from Susan Place, "The Impact of National Park Development on Tortuguero, Costa Rica," Journal of Cultural Geography 9:1 (fall/winter, 1988), 47. Information on Poas Volcano was from SPN records cited in Alexander Bonilla, Situación ambiental de Costa Rica (San Jose: Ministerio de Cultura, Juventud, y Deportes, 1985), 252. I thank Scot Vink for assistance with the number crunching of visitor registrations at Corcovado National Park--especially at a time when it was far more interesting to watch that three-toed sloth in the tree near where we were working than it was to sift through park records and count signatures. After Costa Ricans, the next highest visitations at Los Patos were Dutch, Americans, Canadians, Germans, Austrians, and Israelis.

31. I thank Gerardo Artavia and Fernando Bermúdez of SINAC's Unidad de Mercadeo (Marketing Department) for their very kind assistance in supplying the data here and for Tables One and Two. The Monteverde information is from "Santuario Biológico del

Bosque Nublado de Monteverde," SPN file no. 811, p. 5.

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CONCLUSION

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APPENDICES

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APPENDIX 1

List of Acronyms

AECO	--	Asociación Ecologista Costarricense (Costa Rican Ecology Association)
ASCONA	--	Asociación para la Conservación de la Naturaleza (Association for the Conservation of Nature)
ALA	--	Archives of the Legislative Assembly
CATIE	--	Centro Agronómico Tropical de Investigación y Enseñanza (Tropical Agronomical Research and Higher Education Center)
CCC	--	Caribbean Conservation Corporation
CONAI	--	Consejo Nacional de Asuntos Indígenas (National Council for Indigenous Affairs)
CONOCIT	--	Consejo Nacional de Investigaciones Científicas y Tecnológicas (National Science and Technology Research Council)
DGF	--	Dirección General Forestal (General Forestry Directorate)
EPOCA	--	Environmental Program on Central America
FAO	--	United Nations Food and Agriculture Organization
FECON	--	Federación Costarricense para la Conservación del Ambiente (Costa Rican Federation for the Conservation of the Environment)
FPN	--	Fundación de Parques Nacionales (National Parks Foundation)
ICE	--	Instituto Costarricense de Electricidad (Costa Rican Electricity Institute)
ICT	--	Instituto Costarricense de Turismo (Costa Rican Tourism Institute)
INBio	--	Instituto Nacional de Biodiversidad (National Biodiversity Institute)
ITCO	--	Instituto de Tierras y Colonización (Lands and Colonization Institute)
changed to		
IDA	--	Instituto de Desarrollo Agrario (Agrarian Development Institute)
IUCN	--	International Union for the Conservation of Nature
changed to		World Conservation Union
MAB	--	United Nations Man and the Biosphere Program
MAG	--	Ministerio de Agricultura y Ganadería (Ministry of Agriculture and Livestock)
MIRENEM	--	Ministerio de Recursos Naturales, Energía y Minas (Ministry of Natural Resources, Energy, and Mines)
changed to		
MINAE	--	Ministerio de Ambiente y Energía (Ministry of Environment and Energy)
NGO's	--	non-governmental organizations

OFIPLAN -- Oficina de Planificación
 (Office of Planning)
 OTS -- Organization for Tropical Studies

 PEC -- Partido Ecologista Costarricense
 (Costa Rican Ecology Party)
 PLN -- Partido de Liberación Nacional
 (National Liberation Party)
 PUSC -- Partido de Unidad Social Cristiana
 (Social Christian Unity Party)
 RECOPE -- Refinadora Costarricense de Petróleo
 (Costa Rican Oil Refinery)
 SINAPROMA-- Sistema Nacional de Protección y Mejoramiento Ambien-
 tal (National System of Environmental Protection and
 Improvement)
 SPN -- Servicio de Parques Nacionales
 (National Park Service)
 changed to
 SINAC -- Sistema Nacional de Areas de Conservación
 (National System of Conservation Areas)
 TSC -- Tropical Science Center
 URC's -- Unidades Regionales de Conservación
 (Regional Conservation Units)
 changed to
 AC's -- Areas de Conservación
 (Conservation Areas)
 UCR -- Universidad de Costa Rica
 (University of Costa Rica)
 UNA -- Universidad Nacional
 (National University)
 UNED -- Universidad Estatal a Distancia
 National Open University
 UNEP -- United Nations Environmental Programme
 USNPS -- U.S. National Park Service
 WWF -- World Wildlife Fund

APPENDIX 2

The Presidents of the Republic of Costa Rica, 1906-1996

1906-1910	--	Cleto González Víquez
1910-1914	--	Ricardo Jiménez Oreamuno
1914-1917	--	Alfredo González
1917-1919	--	Federico Tinoco
1919-1820	--	Francisco Aguilar Barquero
1920-1924	--	Julio Acosta
1924-1928	--	Ricardo Jiménez Oreamuno
1928-1932	--	Cleto González Víquez
1932-1936	--	Ricardo Jiménez Oreamuno
1936-1940	--	León Cortés Castro
1940-1944	--	Rafaél Angel Calderón Guardia
1944-1948	--	Teodoro Picado Michalski
1948-1949	--	José Figueres Ferrer
1949-1953	--	Otilio Ulate
1953-1958	--	José Figueres Ferrer
1958-1962	--	Mario Echandi Jiménez
1962-1966	--	Francisco Orlich Bolmarcich
1966-1970	--	José Joaquín Trejos
1970-1974	--	José Figueres Ferrer
1974-1978	--	Daniel Oduber Quirós
1978-1982	--	Rodrigo Carazo Odio
1982-1986	--	Luis Alberto Monge
1986-1990	--	Oscar Arias Sánchez
1990-1994	--	Rafaél Angel Calderón Fournier
1994-1998	--	José María Figueres Olsen

APPENDIX 3

The History of Controversy at Santa Rosa-- A Besieged National Park

- 1856 -- William Walker and the Filibuster War
- 1930-1966 -- Santa Rosa owned by Nicaraguan dictator Anastasio Somoza García
- 1955 -- Somoza's Nicaraguan soldiers involved with border skirmishes at Santa Rosa, upon Somoza's orders
- 1969 -- Scandal #1: forty precarista (squatter) families moved onto Playa Naranjo; Alvaro Ugalde in charge of diplomatic removal
- 1969 -- Scandal #2: neighboring rancher moves his fences into park, grazes cattle, has support of friend and Guanacaste rancher Daniel Oduber who as president of the Legislative Assembly moves to take Santa Rosa from the National Parks Department.
- 1970 -- Scandal #3: MAG Minister found running his cattle on Santa Rosa National Park's grassland savannas
- 1972 -- Scandal #4: severe regional drought causes MAG Minister to allow area ranchers to cut hay in park
- 1978 -- President Carazo expropriates hacienda "El Murciélago" by SRNP from Anastasio Somoza Debayle
- 1982 -- Scandal #5: Ministry of Public Service uses El Murciélago for training grounds for Nicaraguan Sandinistas (and later, Contras); soldiers cross over into SRNP, use trees for target practice, etc.
- 1984 -- Scandal #6: U.S. Green Berets found training Nicaraguan Contras and special unit of Tico Guards (the Relámpago Battalion) at El Murciélago
- 1986 -- Scandal #7: secret airstrip discovered built by U.S. special forces under guise as ecotourism outfit; strip used as part of Oliver North's plan to resupply Nicaraguan contras using drug money and arms-sales money from Iran
- 1984 -- Scandal #8: chemical pesticide run-off from nearby agroindustrial cotton plantation owned by ALCORSA, found to be cause of wildlife mortality in SRNP

APPENDIX 4

Anonymous Poem Regarding the Palo Verde
National Park Controversy, Summer 1981

"Requiem por un parque"

Entre decreto y decreto se acaban los parques,
los patos, los piches y el guayacán;
adiós PALO VERDE, no volveré a verte,
las aves que migran no te encontrán,

Hitoy, Barra Honda, Guayabo y Rincón,
tiritan de miedo por esta agresión,
por estos decretos que los eliminan,
echando por tierra la conservación.

Traigo penas en el alma,
por las Pailas del Rincón;
cavernas de Barra Honda
bellezas de esta nación.

Que poca huella dejaron,
la ley y la convención;
con un decreto enterraron
tesoros de esta región.

Los parques hermosos hoy brindan sus bosques,
sus playas, sus ríos, montañas y el mar;
que poco aprecian la naturaleza,
esta indiferencia nos va a aniquilar.

Traigo penas en el alma,
por la Pailas del Rincón;
cavernas de Barra Honda
bellezas de esta nación.

Que poca huella dejaron,
la ley y la convención;
con un decreto enterraron
tesoros de esta región.

(Source: National Archives, series: Servicio de Parques
Nacionales, file no. 1090.)

APPENDIX 5

The National Conservation Strategy for Sustainable Development

A. Objectives:

1. To maintain essential ecological processes and life systems
2. To preserve genetic diversity
3. To enhance equity, social justice, and ethical values
4. To develop sustainable utilization of natural resources
5. To balance rural development and urban growth
6. To raise public consciousness about conservation
7. To ensure the sustainable utilization of ecosystems
8. To manage non-renewable resources for long-term benefit
9. To establish population and immigration policies based on basic resource constraints for an acceptable standard of living

B. Sectors:

- | | |
|----------------------|-----------------------------|
| 1. Agriculture | 7. Urban planning |
| 2. Water Resources | 8. Education, Research |
| 3. Energy, Industry | 9. National heritage issues |
| 4. Pollution, Health | 10. Fishing, Coastal zones |
| 5. Demography | 11. Mining |
| 6. Legislation | 12. Forestry, Wildlands |

(Based on Julio C. Calvo, "The Costa Rican National Conservation Strategy for Sustainable Development: Exploring the Possibilities," Environmental Conservation 17:4 (Winter 1990), 356.)

APPENDIX 6

Indigenous Population of Costa Rica by Region and Group

ZONA TALAMANCA:

Talamanca Bribri -----	7,500
Kekoldi -----	450
Talamanca Cabécar ----	2,200

ZONA CABECAR:

Tayni -----	1,700
Telire -----	650
Bajo Chirripó -----	700
Nairi Awari -----	500
Chirripó -----	4,800

ZONA GUAYMI:

Abrojo -----	500
Conteburica -----	2,000
Coto Brus -----	1,500
Guaymi -----	150

BUENOS AIRES:

Ujarras -----	2,400
Salitre -----	2,900
Cabagra -----	2,100
Boruca -----	2,000
Curre -----	1,000
Térraba -----	750

ZONA HUETAR:

Quitirrisi -----	800
Zapatón -----	900

ZONA NORTE:

Guatuso -----	700
Matambu -----	850

TOTAL 36,350

(Source: CONAI, July 1996)

APPENDIX 7

Numbers and Countries of Origin of International Tourists Visiting Costa Rica, 1995

ZONAS Y PAISES	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SET	OCT	NOV	DIC	TOTAL
GRAN TOTAL	88,908	76,361	72,734	60,732	52,293	54,564	70,297	61,089	49,291	51,141	68,329	78,871	784,610
AMERICA DEL NORTE	39,824	35,961	36,393	26,751	24,375	28,328	31,140	25,918	16,739	18,591	29,170	36,117	349,307
Canada	9,128	7,314	6,372	2,591	1,335	1,213	1,525	1,191	991	1,289	3,601	5,348	41,898
Estados Unidos	29,316	27,401	28,604	22,609	21,581	25,562	27,515	22,910	14,127	15,577	23,645	28,687	287,434
México	1,380	1,246	1,417	1,551	1,459	1,553	2,100	1,817	1,621	1,725	2,024	2,062	19,975
AMERICA CENTRAL	25,208	20,308	18,225	18,313	14,730	13,092	18,653	16,361	17,467	16,503	18,886	20,277	218,023
Guatemala	2,017	1,688	1,995	1,985	1,884	1,803	1,969	1,867	2,220	2,005	2,602	2,270	24,305
El Salvador	2,369	1,691	1,754	2,330	1,485	1,376	2,133	1,823	1,606	1,487	2,093	2,192	22,340
Honduras	1,628	1,100	1,456	1,485	1,178	1,010	1,355	1,199	1,381	1,157	1,566	1,361	15,876
Nicaragua	13,741	8,230	7,525	8,626	7,344	6,167	8,777	7,505	8,609	8,058	7,611	10,364	102,557
Panamá	5,453	7,599	5,495	3,887	2,838	2,736	4,419	3,967	3,651	3,796	5,014	4,090	52,945
CARIBE	656	484	890	503	471	594	673	695	595	533	691	540	7,125
Cuba	207	212	243	216	222	264	278	246	195	229	269	309	2,890
República Dominicana	339	195	199	212	183	250	302	321	305	232	260	161	2,959
Jamaica	49	36	121	28	36	33	30	29	45	30	56	35	528
Trinidad y Tobago	29	14	20	31	11	14	17	25	24	16	32	9	242
Otros	32	27	107	16	19	33	46	74	26	26	74	26	506
AMERICA DEL SUR	7,218	5,491	4,377	4,311	4,252	4,161	5,576	4,753	4,567	4,000	4,808	5,086	58,800
Argentina	1,515	856	532	416	456	394	661	442	458	438	535	754	7,457
Brasil	732	558	364	273	302	317	564	321	378	245	409	358	4,641
Chile	882	1,170	472	503	736	550	646	492	624	453	486	379	7,393
Colombia	1,954	1,095	1,356	1,386	1,068	1,234	1,792	1,442	1,230	1,335	1,329	1,815	17,036
Ecuador	754	844	690	702	719	637	693	797	641	496	705	496	8,164
Peru	629	400	372	353	385	384	427	410	399	472	492	510	5,233
Venezuela	469	379	413	464	390	417	476	666	552	393	567	590	5,778
Otros	283	189	178	214	196	228	295	183	285	178	285	184	2,698
EUROPA	14,470	12,725	11,504	9,403	6,987	6,986	12,437	11,438	8,337	10,012	13,047	14,711	132,057
Alemania	4,345	4,323	4,125	3,215	1,954	1,788	2,560	2,422	2,267	2,786	4,365	4,442	38,592
Austria	422	495	276	178	135	148	379	261	142	220	347	449	3,452
Bélgica	145	125	163	165	98	101	259	116	110	162	202	191	1,837
Dinamarca	255	283	249	177	180	132	162	125	147	165	196	217	2,285
España	1,386	1,391	1,178	1,209	1,068	1,141	2,441	2,945	1,967	1,778	1,764	1,440	19,708
Finlandia	46	56	38	46	30	20	41	33	32	46	44	52	464
Francia	863	809	565	614	448	573	964	800	385	535	799	660	8,215
Holanda	1,007	730	857	812	636	654	2,073	830	785	1,181	908	1,026	11,499
Inglaterra	1,096	897	993	745	669	626	900	712	618	698	943	1,800	10,697
Italia	2,962	2,126	1,637	1,056	930	977	1,526	2,358	963	1,233	1,780	2,146	19,694
Noruega	121	98	114	77	33	75	87	63	76	70	133	119	1,066
Suecia	271	200	219	163	128	146	134	104	120	187	199	296	2,167
Suiza	1,136	933	862	738	475	413	682	448	529	762	961	1,327	9,266
Otros	415	259	228	208	203	192	229	221	196	189	406	346	3,092
ASIA	1,102	1,064	1,273	1,227	1,186	1,184	1,503	1,662	1,351	1,230	1,306	1,876	15,764
China	229	194	309	316	324	359	505	617	431	454	386	441	4,565
Corea	158	94	147	129	164	128	150	139	97	113	102	203	1,624
Israel	125	133	130	157	179	168	239	255	213	151	147	142	2,039
Japón	391	443	475	434	338	322	403	474	471	311	397	589	5,048
Rusia	45	52	67	55	46	36	31	44	20	36	47	81	560
Otros	154	148	145	136	125	171	175	131	119	165	227	220	1,928
AFRICA	35	43	33	33	47	36	47	56	29	29	55	46	489
OTRAS ZONAS	395	285	239	191	245	183	268	206	206	243	366	418	3,245

(based on arrivals at Juan Santamaría International Airport)
 (Source: ICT, Departamento de Estadística, July 1996)

APPENDIX 8

Audubon Society Code of Environmental Ethics for Nature Travel in Costa Rica

1. Wildlife and natural habitats must not be needlessly disturbed.
2. Waste should be disposed of properly
3. Tourism should be a positive influence on local communities.
4. Tourism should be managed and sustainable.
5. Tourism should be culturally sensitive.
6. There must be no commerce in wildlife, wildlife products, or native plants.
7. Tourists should leave with a greater understanding and appreciation of nature, conservation, and the environment.
8. Tourism should strengthen the conservation effort and enhance the natural integrity of places visited.

(source: Beatrice Blake and Anne Becher, The New Key to Costa Rica [San José: Publications in English, S.A., 1991], 36-37.)

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INTERVIEWS

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Bonilla, Alexander - (co-founder and past president, ASCONA; independent environmental consultant) in San José, CR; 22 July 1996.

Boza, Mario - (past director of the National Park Service; founder of School of Environmental Studies, UNED; project coordinator, Mesoamerican Biological Corridor, CCC) in San Pedro de Montes de Oca, CR; 9 July 1996.

Bozzoli de Wille, María Eugenia - (anthropologist, University of Costa Rica) in San Pedro de Montes de Oca, CR; 25 June 1992.

Budowski, Gerardo - (past director, IUCN; senior advisor to the Director General, CATIE; trustee, World Wildlife Fund; director of Natural Resources Program, University for Peace; president, Worldwide Ecotourism Society) in Curridabat, CR; 18 July 1996.

Carazo Odio, Rodrigo - (former president of the Republic of Costa Rica, 1978-1982; founder of University for Peace) in Escazú, CR; 29 June 1992.

- Carvajal Angulo, Madeline - (official, Fundación de Parques Nacionales) in San José, CR; 9 July 1996.
- Castillo, Orlando - (historian; archivist, National Archives; environmentalist) in Zapote, CR; 22 July 1996.
- Cortés, Jorge - (marine biologist, University of Costa Rica) in San Pedro de Montes de Oca, CR; 15 July 1996.
- Figueres, Karen Olsen Beck de - (former First Lady of Costa Rica, 1970-1974) in Curridabat, CR; 29 June 1992.
- Flores Reyes, Anselmo - (president, Térraba Integral Indigenous Development Association) in San José, CR; 19 July 1996.
- Fournier Origgi, Luis - (forestry ecologist, University of Costa Rica) in San Pedro de Montes de Oca, CR; 19 July 1996.
- Koepsel, Kirk - (former Peace Corps volunteer working with ASCONA in Costa Rica, 1981-1983, current associate representative of the Sierra Club Northern Plains Regional Office in Sheridan, WY) by telephone; 13 August 1992.
- León, Alvaro - (director of Asociación Ecologista Costarricense, [AECO]) in San José: Costa Rica; 11 July 1996.
- Morris, Argentina Molina - (former personal secretary for President Rodrigo Carazo) in Chicago, IL; 29 February 1992.
- Morris, Fred - (past director, Mesoamérica and the Center for Mesoamerican Studies; San José, CR) in Chicago, IL; 29 February 1992.
- Muller, Robert - (chancellor, University for Peace; former Assistant Secretary General, United Nations) in Ciudad Colón, CR; 20 July 1996.
- Paniagua, Luis - (official, Fundación Neotrópica) in Curridabat, CR; 8 July 1996.
- Salazar, Roxana - (environmental attorney; author of many works on Costa Rican natural resources and environmental problems) in San José, CR; 23 July 1996.
- Ulgalde, Alvaro - (past director, Costa Rican National Park Service) in San José, CR: 25 June 1992.
- Ulloa, Eric - (assistant to the director of the Costa Rican Ministry of Natural Resources, Energy, and Mines) in San José, CR; 25 June 1992; 4 July 1996.