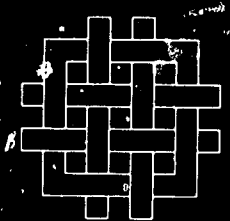
INVESTING IN BIOLOGICAL DIVERSITY

U.S. Research and Conservation Efforts in Developing Countries

Janet N. Abramovitz



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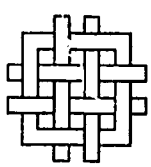

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J.N.A.

EXECUTIVE SUMMARY

In 1990, the Center for International Development and Environment of the World Resources Institute conducted a survey of U.S.-based organizations to solicit data on the biological diversity research and conservation activities they had undertaken in developing countries in 1989. Included in the survey were the U.S. government, charitable foundations, non-governmental organizations, universities, museums, botanical gardens, and zoos. The data collected were compared to the data from a survey of 1987 activities also conducted by WRI's Center.

In all, 1,093 projects active in 127 developing countries in 1989 were analyzed. This $62.9 million invested by the U.S. in developing countries represents a 68 percent increase over funding in 1987 ($37.5 million for 873 projects).

The U.S. government and charitable foundations each contributed slightly over one third of the total funding. One striking finding was the seven-fold increase in biodiversity investments by foundations in the two years since the last study.

Thirty-eight percent of all funds were spent on projects focussed primarily on research. Projects concerned with site and species management received 25 percent, with most of that spent on areas rather than single species. Fifteen percent went for institutional strengthening, 11 percent for policy planning and analysis, and 8 percent for education and technical training. U.S. institutions carried out 72 percent of the total funding; institutions based in developing countries implemented 23 percent.

Projects in Latin America received 68 percent of the total funding; Africa, 17 percent; and Asia and Oceania together, ten percent. Projects that were global or multiregional in scale received 6 percent. The ten countries with the most project funding together received half of all the U.S. biodiversity investments in 1989. In 1987, only seven countries received more than $1 million dollars in project funding, compared with 13 in 1989. Investments on a per hectare basis and to countries identified by others as priorities for biodiversity conservation were also analyzed (e.g., hotspots, megadiversity). Despite the sizeable increase in funding witnessed in 1989, the large majority of countries received less than $5 per 1,000 hectares for biodiversity research and conservation.

Compared to the amounts devoted to such other worthy endeavors as mapping the human genome ($3 billion) and measured against the pressing need to conserve the planet's biological wealth for the benefit of current and future generations, the total amount invested by the U.S. in global diversity—$62.9 million in 1989—is still very small.

INTRODUCTION

Biological diversity—the variety and variability among living organisms and the ecological communities of which they are part—is declining at a rate unprecedented in human history. While the exact number of species is unknown, tens of millions are thought to exist today (Wilson, 1988); yet only a tiny fraction has even been named. As a result of human actions, an ever increasing number are lost before being discovered, much less studied. Without human intervention, one to ten species per year would be lost (Reid and Miller, 1989). Conservative estimates are that 100 species are becoming extinct *each day*. The tragedy is that the numerous potential benefits are lost not just to people of this generation but to future generations as well.

Not only are individual species disappearing, but entire areas are being fragmented, altered, or destroyed. Globally, half of all marshes and wetlands have been lost. In North America, the tall grass prairies have been reduced by 99 percent in area (World Resources Institute, 1990). The tropics, home to more than half of all species, are being deforested at an alarming pace. In tropical forests, the pace of the decline is quickening: most of the loss there has occurred in the last 20 years. Tropical moist forests, one of the most species-rich habitats in the world, have been reduced by 42 percent. Certain portions, such as the Atlantic Coast forest in Brazil, have only tiny fragments remaining. In the early 1980s, it was estimated that annual deforestation in the tropics was 11.4 million hectares (WRI, 1990). Recent studies indicate that later in that decade the world lost up to 20.4 million hectares in 1987 alone—79 percent more than earlier estimates (WRI, 1990). The area lost was larger in size than the state of Washington or the African nation of Senegal. While 1987 was an exceptionally devastating year, the estimates include only forest that had been permanently cleared and converted to other uses, such as agriculture or settlement. They do not include forest lands degraded by logging, grazing, fires, fuelwood collection, or other uses.

Certain regions and countries have experienced especially high rates or absolute amounts of deforestation. Latin America, which contains over half of all remaining tropical forests, has experienced the highest rate of deforestation. Estimates are that Latin America loses 1.3 percent of its remaining forest each year, while Asia loses 0.9 percent, and Africa loses 0.6 percent (WRI, 1990). In some countries that received special study, deforestation was much worse than previously thought (WRI, 1990). While the recent estimates for deforestation in Brazil vary widely, the fact that it contains 30 percent of the world's tropical forests and loses millions of hectares per year has generated much concern. The Latin American countries of Colombia, Mexico and Ecuador are also losing large areas of forest. Rates of deforestation are also high in Cameroon, and the Asian countries of India, Indonesia, Myanmar, Vietnam, and Thailand.

The consequence for many of the species that inhabit these dwindling areas is likely to be

extinction. Walter Reid of the World Resources Institute (Reid, 1990) calculates that if forest loss continues to accelerate, up to 35 percent of tropical forest species could be committed to extinction in the next 50 years.

Other areas that are also important in maintaining the full complement of the planet's biodiversity are also being degraded at a pace and in ways that diminish or destroy their ability to provide for human well-being. Crop and rangelands are being transformed into deserts. In tropical Africa and Asia, as well as in temperate regions, grasslands have been reduced by more than half of their original extent (WRI, 1990). The burden placed upon biologically rich coastal waters, mangrove, and wetlands by rapidly growing coastal populations is destroying many of these ecosystems or rendering them unproductive.

These problems are by no means restricted to developing countries. Massive loss of forests, rangelands, and coastal resources has already occurred in the industrialized nations and continues at a rapid pace.

The causes of the disturbing loss of species and habitats are complex and varied. They include habitat alteration or destruction, overharvesting, improper use of agricultural chemicals, microclimatic change resulting from altered land-use patterns, the burgeoning needs of a rapidly growing population, poverty, inequitable land distribution, economic and political policies and constraints, and global climate change.

Since 1950, the world's population has doubled to 5.3 billion and total economic activity has nearly quadrupled (WRI, 1990). In 2025, the population is projected to reach 8.5 billion—more than triple the number of people living on the planet in 1950. Each year 88 million people are added to the world's population (WRI, 1990), over 90 percent of these in the developing regions. While the population growth rate appears to be slowing (WRI, 1990), the absolute numbers that will be added to the planet are still staggering. Some population analysts warn that population growth may again pick up speed as the employment opportunities, education and family planning services available to women are cut in response to economic and political pressures (United Nations, 1989).

The increasing pressures that the growing world population will place on the natural resource base will severely limit its ability to provide goods and services. To meet the need for a 60-percent increase in food production over the next few decades (WRI, 1990), agricultural lands or yields must increase—during a time likely to witness continued degradation of fertile lands.

Despite the predicted increase in world economic activity, the reality in many developing countries is bleaker then ever. The economic growth experienced on a global level during the 1980s was accompanied by greatly increased world poverty in most developing countries (Latin American and Caribbean Commission on Development and Environment, 1990). A major factor in the global economic crisis is that during the 1980s the net flow of financial resources was reversed: the countries of the South began exporting more money in the form of debt service than they received in development assistance and private investments (Schmidt, 1990).

When falling commodity prices, rising debt and inflation combine with such misleading economic indicators as Gross National Product—which does not accurately reflect either woman's labor contribution to the economy or the depletion or degradation of natural resources—the results are often austerity measures and policies that may hinder or preclude measures that would improve natural resource management (WRI, 1990) and slow population growth (UN, 1989).

Ecosystems and species provide an enormous range of goods and services vital to humankind's well-being—from useful plants and animals to

soil production and water and temperature regulation. These goods and services range from such tangibles as those directly consumed (e.g., food, medicine, firewood), traded in the market (e.g., timber, fish), and non-consumptive services (e.g. watershed protection) to the more intangible values of knowing that species exist and keeping options open for the future (McNeely, et al., 1990).

Forests and other plant cover are essential for regulating the hydrological cycle upon which we depend for water. Disturbed areas experience temporary or permanent disruptions of water supplies, increased flooding, reduction of water quality, and productive decline in fisheries. Deforestation and erosion upstream from hydroelectric or irrigation projects can also diminish their capacity and life span. In addition, the human and industrial pollution caused by a growing population that is increasingly moving to coastal regions has serious consequences for water quality and marine resources worldwide. Clean water and abundant fisheries are also needed to attract tourism revenue, which has become a major portion of many economies (WRI, 1990). Forests also regulate temperature and rainfall on both a local and global scale.

Wild species have long been the foundation for agriculture and will continue to play a vital role in providing new genetic material and even new species for crop use. Important species that originated in Asia include soybean, wheat, rice, orange, banana, coconut, sugar cane, apple, grape, and carrot. Latin America has provided such globally important staples as maize, potato, beans, manioc, tomatoes, cotton, tobacco, and rubber. Africa is the source of coffee, sorghum, millet, wheat, and barley. Wild species have also provided many of our medicines—among them, analgesics, anti-malarial drugs, contraceptive agents, cancer treatments, and many others. In the developing world, 80 percent of all people rely on traditional medicines, principally from plant extracts. Even in the United States, 25 percent of all prescriptions contain active ingredients that are still extracted from plants (Farnsworth, 1988).

For people living in rural settings around the world, the maintenance of healthy and diverse natural resources is fundamental to survival. Wild plants, game, fish, timber, medicinal plants, fiber, and fuelwood provide products upon which people depend for health, well being, and local trade. Land degradation and biological impoverishment can lead to increased poverty, increased incidence of environmental refugees, and serious health problems. When fuelwood becomes scarce, poor families cook less often, eat less nutritious meals, and face serious malnutrition (Snyder, 1990; Maathai, pers. comm. 1990). When land becomes less fertile, many men leave the villages and farms to seek wage employment in urban centers, leaving an increasing number of female-headed households who make up the majority of the poorest of the poor (UN, 1989; Dankelman and Davidson, 1988; Sadek, 1989).

Many efforts have been made to document the tangible values of biological diversity and to put these values to work (McNeely, et al., 1990; McNeely, 1988; Oldfield, 1984; Prescott-Allen and Prescott-Allen, 1986; Peters, et al., 1989). Significant progress has been made toward developing new methods of incorporating the value of natural resources into national income accounts (Bartelmus, 1989; Repetto, et al., 1989; Passell, 1990). In Costa Rica, the newly created National Biodiversity Institute (INBio) is establishing a network of the nation's flora and fauna collections and resources, hoping not only to become the only country with a complete catalog of its species but, more important, to use its diversity to develop products that will help maintain their conservation progress. Using innovative funding mechanisms and training techniques, INBio will also train the corps of parataxonomists and professionals needed to realize its ambitious goals (Tangley, 1990).

The maintenance of species and ecosystems is a keystone of sustainable development—development that meets the needs of the present without compromising the ability of future generations to meet their needs. But where should the work begin? The need for industrialized countries to confront the environmental and economic problems that they face at home is widely understood, but most of the world's biological wealth, and the human population that depends on that wealth, resides in developing tropical nations. Clearly, unprecedented cooperation is needed to address these critical issues.

To help understand what efforts had been made so far, in 1987 the U.S. Agency for International Development's Bureau for Science and Technology (USAID/S&T/FENR) supported a study through the Environmental Planning and Management (EPM) Project of the World Resources Institute's Center for International Development and Environment. This was the first-ever accounting of expenditures for biological diversity. Before its publication, no information was available on the amount spent on biodiversity research and conservation, where the money was going, what types of activities were being funded, who was funding them, and who was carrying them out. A detailed report, *A Survey of U.S.-Based Efforts to Research and Conserve Biological Diversity in Developing Countries* (Abramovitz, 1989), documented and analyzed $37.5 million spent on 873 projects in 86 developing countries in 1987. The warm reception and wide use that publication received led to the undertaking of this follow-up study. The data in these two studies establish a baseline for tracking calls to action and progress made and, even more important, making wise decisions regarding the long-term future of the earth's biological wealth.

Funding for the 1989 study came from the U.S. Agency for International Development through the Biodiversity Support Program—a joint venture of World Wildlife Fund, World Resources Institute, and The Nature Conservancy—and the Environmental Planning and Management Project of WRI's Center for International Development and Environment.

METHODS

The Survey

In 1990, a survey was conducted to determine how much U.S. institutions—both governmental and non-governmental—invested in biodiversity research and conservation activities in developing countries during 1989. This survey, the results of which are reported here, was (like its forerunner) designed to collect project-level information. Each project's title, focus of activity, geographic location, funding level, funders, and implementors were identified. (The questionnaire used appears in Appendix I.)

Information was collected from January 1990 through October 1990 for projects active in fiscal or calendar year 1989. This time period was chosen because it allowed for the collection of complete and recent data and for a two-year lapse since the last data-gathering effort. Information was collected from U.S.-based funders and implementors and some international institutions. To make the data comparable to that presented in the previous survey, only U.S. funding has been included in this report, though more information from international and national institutions is being collected for future publication.

The current report includes several refinements, additions, and analyses that did not appear in the report of 1987 activities. The survey questionnaire included questions on new activity subcategories and new types of biomes. This year, the countries of Oceania have been analyzed separately instead of included with Asia. Also new is the inclusion of a code to indicate whether the organization carrying out the project was from within the country where the project took place ("in-country"), the United States, or some other nation. This was added to determine the amount given directly to implementors within the country versus that passed through U.S. institutions. No distinction was made between grassroots groups and national organizations within the project country.

The tables and figures also include the results of examining the data in new ways. A multi-year comparison between the two surveys of funding by region, funder, implementor, and type of activity showed significant changes. For the first time, some tables and figures show how much funding the various types of funders provide on a regional basis, and by type of activity. One table also indicates which categories of projects various types of implementors carry out. Another lists the funding invested in countries and regions identified as high priorities for biodiversity conservation. An analysis of country and regional funding per hectare is also presented for the first time.

The Sample

The following types of U.S.-based institutions were surveyed:

- departments and agencies of the U.S. government
- non-governmental organizations

- universities and research institutions
- botanical gardens and zoos
- museums
- foundations

Some international organizations (e.g., IUCN, Worldwide Fund for Nature) and bilateral or multilateral donors were surveyed, but their responses were excluded so as to make the 1987 and 1989 data comparable. Governments, agencies, and NGOs within developing countries were not directly surveyed.

Several strategies were employed for collecting information. Much data on universities and other research institutions were collected from the National Science Foundation's Division of Biotic Systems and Resources list of 1989 grants with foreign designations. Additional data on university activities were collected from the Organization for Tropical Studies, a consortium of institutions engaged in tropical research and training. The Association of Systematics Collections, which represents a large number of universities, museums, and other research institutions, polled its members.

Activities funded by charitable foundations, such as the Pew Charitable Trusts, and the Jessie Smith Noyes, John D. and Catherine T. MacArthur, and the W. Alton Jones foundations, were identified through annual reports and direct questioning. Most governmental and non-governmental organizations were contacted directly. Some completed the survey questionnaire, others provided project summaries, grants lists, or machine-readable databases.

As in the previous survey, response rates were very high (over 90 percent) for non-governmental organizations, foundations, and most governmental departments and agencies. Response rates were somewhat lower for museums, botanical gardens and zoos, and universities and other research institutions not receiving National Science Foundation grants.

Data Processing

Information was gathered on 1,093 projects and programs active in fiscal or calendar year 1989 from questionnaires, project summaries, grant lists, and computer databases. Most of the data received were at the project level, though a few were at the program level. (Programs are generally much larger efforts consisting of several projects.) Records were coded by types of funders and implementors (e.g., non-governmental organizations, botanical gardens, foundations), geographic region, and activity type (e.g., research, education). A new feature in this survey is a code to indicate whether the implementor was from in-country, the United States, or another country. In cases where information was not submitted in the questionnaire format, activities were coded according to the definitions provided. Records were compared and projects that were double counted were removed or adjusted.

All data submitted were reviewed to ensure that projects were focused on the biological diversity of developing countries, active in 1989, funded or implemented by a U.S. public or private institution, and that their activities fell within the classification system. Examples of projects that met these criteria included:

- zoological monitoring in Amboseli National Park by Wildlife Conservation International
- work by the World Wildlife Fund and the King Mahendra Trust for Nature Conservation in Nepal's Anapurna Conservation Area
- an extractive reserves conference in the Amazon
- the Jessie Smith Noyes Foundation's support for science and conservation groups throughout Latin America (e.g., Fundacion Moises Bertoni in Paraguay, Fundacion Pro-Sierra Nevada de Santa Marta in Colombia)
- the Latin American Plant Sciences Network
- a USAID-funded study by U.S. and Filipino researchers of the impacts of destructive fishing methods on coastal biodiversity

- a National Science Foundation-funded study of ecosystem processes in treefall gaps in tropical rainforests.

Activities such as agricultural development studies and the budgets for administration of U.S. organizations engaged in conservation and research activities did not meet the criteria.

The respondents were asked to rank the three predominant types of activities undertaken in their projects based on a hierarchical scheme. The major categories were:

- research
- site or species management
- policy planning and analysis
- education
- institutional strengthening

These categories were further divided into such subcategories as ecosystem research, systematics and inventories, buffer-zone management, in-situ species management, conservation law and regulatory policy, debt-for-nature swaps, and technical training. The protected areas categories also include activities carried out outside strictly protected areas to maintain or improve biodiversity. The subcategories were refined from those used in the survey of 1987 activities. However, the broad categories (e.g., research, education) are the same. (*See Appendix I* for the full activity classification system and definitions used.)

A few examples will serve to illustrate the types of activities that fall within some of the subcategories.

WWF works with governmental and non-governmental organizations around the world by providing technical assistance and funding for diverse projects ranging from protected areas to species management to institutional strengthening. WWF partners include, among others, counterparts in Indonesia, the Peruvian Foundation for the Conservation of Nature (FPCN), the National Committee for the Defense of Flora and Fauna (CODEFF) in Chile, and the Natural History Institute in Mexico. The Nature Conservancy also works on site management, institution building and information systems development (principally in Latin America, where they have a Parks in Peril campaign).

The Organization for Tropical Studies hosts numerous basic research projects on species and ecosystems at its La Selva Biological Station in Costa Rica. In addition, OTS trains scientists and policy-makers from many countries. The Missouri Botanical Garden conducts plant biology and systematics research projects throughout the tropics. The U.S. National Cancer Institute funds explorations in Africa, Asia, and Latin America to discover species containing active ingredients that would be useful in treating cancer or human immunodeficiency virus. The MacArthur Foundation supports the work of Cultural Survival and indigenous peoples' associations in South America to sustainably manage their forest resources. The International Institute of Rural Reconstruction in the Philippines is developing seed banks of indigenous seed varieties.

The African Wildlife Foundation (an NGO) is active in mammalian research, park protection and management, and training, primarily in East Africa. With support from U.S. funders the National Universities of Mexico and Costa Rica are working to conserve many species, including primates, the olive ridley turtle, and squirrel monkeys.

The Jessie Smith Noyes Foundation supports conservation policy work by Brazil's Institute of Amazon Studies and Venezuela's Audubon Conservation Society. USAID has supported assessments of biological diversity in many countries, including the Eastern Caribbean, Bangladesh, Yemen, and Sri Lanka.
Debt-for-nature swaps were arranged or funded by USAID in Madagascar, The Nature Conservancy in Costa Rica and Ecuador, and the World

Wildlife Fund, Fundacion Natura, Missouri Botanical Garden, and the Charles Darwin Research Station in Ecuador.

With support from the W. Alton Jones Foundation, the Obor Foundation in Indonesia produced a reader on biodiversity to educate students and the general public. In India, the U.S. Fish and Wildlife Service sponsored a children's environmental television project. Along with other U.S. foundations and NGOs, it is also helping support a graduate training program in wildlife management at the National University of Costa Rica. Training for scientists, park personnel, government officials and others is provided by the U.S. National Park Service, the Peace Corps, and a number of NGOs.

Activities intended to make institutions working in developing countries more effective have been supported by many foundations (including Charles Stewart Mott, Jessie Smith Noyes, John D. and Catherine T. MacArthur, W. Alton Jones Foundations, and the Pew Charitable Trusts), the U.S. government, and NGOs. The institutions helped by these projects are primarily in-country NGOs, as well as universities, research institutions, and government agencies responsible for natural resources management. For example, the MacArthur Foundation funded a grants program that supports museums and botanical gardens in the Andean region of South America. Institutions helped by the foundations include Instituto Pro-Natura and S.O.S. Mata Atlantica in Brazil, Sociedad Peruana de Derecho Ambiental, the Belize Audubon Society, Fundacion Natura in Colombia, Centro de Estudios Conservacionista (CECON) in Guatemala, Synergos Institute in Mexico, and many others.

(*See Appendix III* for a full list of projects and their implementors by region and country.)

RESULTS

Globally, U.S.-based institutions invested $62.9 million in 1989 on 1,093 biodiversity research and conservation projects in 127 developing countries. This figure represents a 68-percent increase in funding over the $37.5 million spent on 873 projects in 1987. (*See Table 1.*) This increase represents a true rise in funding—there were no new types of institutions nor major individual institutions included in the data analyzed for this report.

Geographic Analysis

Regionally, the largest amount of money (31 percent of the total) went to projects in South America in 1989. (*See Figure 1, Table 1.*) The 14 countries in that region with U.S.-funded projects received $19.4 million for 310 projects in 1989, a 131-percent increase over 1987. The 247 projects in Central America received $16.1 million in 1989, a 33-percent increase over 1987. Projects in

Table 1. U.S. Funding for Biological Diversity Research and Conservation Projects by Region, 1987 and 1989

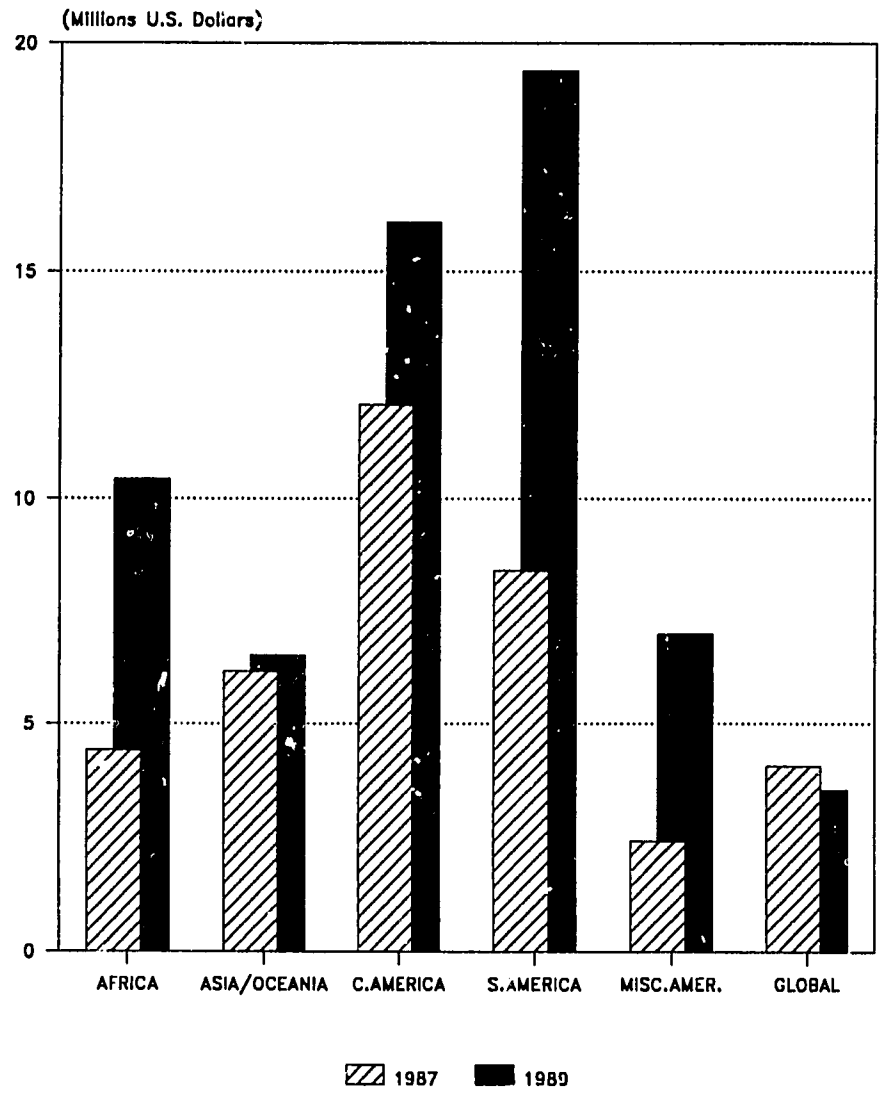
	1987			1989			1987 to 1989
	Funding ($US)	No. of Projects	Percent of Total Funding	Funding ($US)	No. of Projects	Percent of Total Funding	Percent Change in Funding
Africa	4,424,401	145	12	10,425,472	217	17	136
Asia	6,147,938*	135	16	5,735,464*	156	9	6**
Oceania	N/A*			763,497*	18	1	
Latin America and the Caribbean:							
Caribbean	918,465	46	2	2,826,613	44	4	208
Central America	12,056,945	194	32	16,077,382	247	26	33
South America	8,401,128	208	22	19,393,960	310	31	131
Regionwide	1,503,459	60	4	4,165,030	51	7	177
Global/Multiregional	4,070,854	85	11	3,548,995	50	6	-13
TOTAL	37,523,100	873	100	62,936,413	1,093	100	68

Source: Biodiversity Projects Database. World Resources Institute.
*Funding data for Oceania is listed under Asia for 1987.
** Combining Asia and Oceania.

the Caribbean received $2.8 million in 1989, a 208-percent increase over 1987. While this was the largest relative rise in funding among all of the regions, the Caribbean still received only 4 percent of the global total. Regional projects that were active in several countries within Latin America received $3.5 million, a slight drop from the 1987 total. When investments in projects in Central and South America and the Caribbean are combined, 67 percent of the total ($42.5 million) was spent on activities in the Neotropics. By comparison, in 1987, the Neotropics received 61 percent of the funding ($22.9 million).

Africa received a large relative increase in investments in biodiversity research and conservation since the previous study. (*See Figure 1* and *Table 1*.) In 1987, projects in Africa received $4.4 million, compared to $10.4 million in 1989, a 136-percent increase. Despite this large increase, this vast and diverse continent still received only 17 percent of the global total.

Figure 1. U.S. Funding for Biological Diversity by Region, 1987 and 1989



Source:Biodiversity Project Database. World Resources Institute.

Table 2. Ten Countries with the Most U.S. Funding for Biological Diversity Research and Conservation Projects in 1989

Country	1989 Funding ($US)	Percent of Total Funding	No. of Projects
Costa Rica	6,214,897	10	64
Mexico	5,528,809	9	89
Brazil	5,483,535	9	93
Ecuador	3,257,943	5	22
Madagascar	2,835,649	5	35
Kenya	2,101,179	3	36
Peru	1,923,4[illegible]5	3	46
Colombia	1,450,650	2	33
Indonesia	1,394,244	2	27
Guatemala	1,240,995	2	20
TOTAL	31,431,337	50	465

Source: Biodiversity Projects Database. World Resources Institute.

In 1987, Asia and Oceania together received $6.1 million for 135 projects. In 1989, funding rose slightly to $6.5 million for 174 projects. However, when the two years are compared, the percentage of total funding that the region received dropped from 16 percent in 1987 to 10 percent in 1989. Projects solely within Oceania received $0.8 million. 1989 was the first year Oceania (here defined as Fiji, Papua New Guinea, Solomon Islands and other islands of the south Pacific) was analyzed separately. Global or multi-regional projects received $3.5 million in 1989, a slight drop from 1987.

By country, the largest amount of money went to projects in Costa Rica. (*See Table 2.*) The presence of the established Organization for Tropical Studies (OTS), two large USAID projects, as well as the transaction of two debt-for-nature swaps accounted for over $4.0 million of the $6.2 million that the U.S. invested in Costa Rica in 1989. In 1987, Costa Rican projects received 15 percent of the global total, compared to 10 percent in 1989. Projects in Mexico and Brazil each received close to $5.5 million. Together, projects active in these three countries received almost 30 percent of the total funding.

When the ten countries with the most project funding are aggregated, they account for half of all funding, or $31.4 million. (*See Table 2.*) By comparison, in 1987 the "top 10" countries received $17.6 million, or 52 percent of that year's total. Notably, in 1987 only seven countries had more than $1 million in U.S. project funding. By 1989, 13 had. Countries with over $1 million in project funding that are not included in Table 2 are Uganda, Belize, and Jamaica. Some of the totals for individual countries deserve special explanation. As mentioned, in Costa Rica the debt-for-nature swaps, OTS, and USAID accounted for a majority of that country's funding. In Ecuador, debt-for-nature swaps and a large Galapagos Island campaign accounted for almost three quarters of the funding to that country. Likewise in Jamaica two USAID-funded projects accounted for almost all of its funding. In Peru, one large project accounted for one third. In Madagascar, a debt-for-nature swap also provided one third of its total.

Another useful way to measure funding is to examine how much funding a country receives per unit area. As Table 3 illustrates, only 23 countries of the 127 for which there is survey data, received even the modest amount of $5 per 1,000 hectares. Several of the countries that top this list are small countries housing large projects, many of them regional in nature, so the figures are somewhat slanted. Other countries, such as Brazil and Indonesia, that appeared in the list of countries with the most funding (*See Table 2*), are very large and receive very little per hectare relative to their size. On a regional basis, Central America and the Caribbean combined receive $822 per 1,000 hectares, South America $11 per 1,000 hectares, Africa $4 per 1,000 hectares, and Asia $2 per 1,000 hectares. (*See Appendix II.*) Included in Table 3 is one measure of a country's

diversity—plant species per unit area (Reid pers. comm., 1990). Using this measure these countries are all biologically rich, yet, as this table demonstrates on the basis of either area or number of plant species, only modest levels of U.S. funding are invested in these countries. By and large, countries with higher levels of funding tend to meet most or all of the following criteria: 1) demonstrated commitment to preserving their own biodiversity; 2) ability to effectively absorb and use outside funding; and 3) political and social stability.

In recent years, several attempts have been made to identify countries and regions of high priority for biodiversity conservation (IUCN/UNEP, 1986a,b,c; McNeely, et al., 1990; Mittermeier and Werner, 1990; Myers, 1988; National Academy of Sciences, 1980). Table 4 examines U.S. investments in biodiversity research and conservation in countries and regions identified in three of these schemes (Myers, IUCN/UNEP, Mittermeier). Where a region encompasses parts of several countries, the total funding for each country is listed, so totals may include funding for projects within the country yet outside of the region identified as a priority.

Myers (1988) identified ten tropical forest areas that deserve attention due to high biodiversity, high endemism, and rapid rates of habitat depletion. These "hotspots" received $20.2 million, or 32 percent of the total funding. Three "hotspots" (Queensland, New Caledonia, and Hawaii) were not covered by the survey or included in the funding total. For IUCN/UNEP (1986a,b,c), the MacKinnons identified regions within Africa, Asia, and Oceania in need of increased habitat protection based on their biodiversity, level of endemism, extent of remaining habitat and portion protected. The areas recommended in the IUCN/UNEP studies received 15 percent of the total funding ($9.2 million). Mittermeier and Werner (1990) recently updated Mittermeier's list of "megadiversity" countries to include 12 countries with high total species numbers and high levels of species, genus, and family level endemism. Together, these countries received $23.8 million, or 38 percent of the total funding.

Table 3. Level of Funding and Plant Species Estimated for Countries With U.S. Biodiversity Funding Greater Than $5 Per 1000 Hectares, 1989

Country	Land Area (000 ha)	1989 Funding ($US)	Dollars per 1,000 ha	Plant species per area
Costa Rica	5,106	6,214,897	1217	5,260
Jamaica	1,083	1,141,076	1054	3,110
Belize	2,280	1,199,342	526	2,461
Haiti	2,756	686,904	249	2,252
Panama	7,599	951,785	125	3,452
Rwanda	2,495	288,991	120	1,568
Ecuador	27,684	3,257,943	118	4,970
Guatemala	10,843	1,240,995	114	3,636
Fiji	1,827	116,640	64	1,235
Bhutan	4,700	249,888	53	3,000
Uganda	19,955	1,020,701	51	1,759
Madagascar	58,154	2,835,649	49	2,857
Honduras	11,189	420,076	38	2,252
Kenya	56,697	2,101,170	37	1,699
Mexico	190,869	5,528,809	29	3,495
Nepal	13,680	375,959	27	2,914
Paraguay	39,730	783,934	20	2,207
Peru	128,000	1,923,445	15	4,026
Colombia	103,870	1,450,650	14	9,427
Dominican Republic	4,838	66,407	14	2,559
Thailand	51,089	699,449	14	3,269
Malaysia	32,855	448,846	14	3,636
Philippines	29,817	363,068	12	2,896
Venezuela	88,205	791,102	9	5,636
Tanzania	88,604	742,758	8	2,233
Cameroon	46,540	380,603	8	2,237
Indonesia	181,157	1,394,244	8	na
Sierra Leone	7,162	54,873	8	878
Brazil	845,651	5,483,535	6	5,832
TOTAL	—	42,223,739	—	—

Source: FAO Production Yearbook (land areas), World Resources Institute Biodiversity Projects Database (funding), Walter Reid (plant species estimates).

Note: Table includes only countries with land areas greater than 1 million hectares, and funding greater than $50,000.

Table 4. U.S. Funding for Countries with High Priority Regions for Biological Diversity Conservation, 1989

Priority COUNTRIES and Regions		"Hotspots" (2)	IUCN/UNEP Priorities (3)	Megadiversity Countries (4)	1989 Funding (1) Amount ($)	1989 Funding (1) Percent of Total Funding
AFRICA	West African Tropical Forest					
	CAMEROON				380,603	1
	CONGO				5,000	<1
	EQUATORIAL GUINEA				0	0
	GABON				119,700	<1
	GHANA				0	0
	GUINEA				0	0
	IVORY COAST				10,000	<1
	LIBERIA				23,456	<1
	NIGERIA				0	0
	SIERRA LEONE				54,873	<1
	ZAIRE				119,750	<1
	VARIOUS COUNTRIES				80,000	<1
	East African Montane Forest					
	KENYA				2,101,170	3
	TANZANIA				742,758	1
	Sudanian Zone					
	BENIN				0	0
	BURKINA FASO				0	0
	CAMEROON				*	
	CENTRAL AFRICAN REPUBLIC				196,264	<1
	CHAD				0	0
	ETHIOPIA				121,554	<1
	GHANA				*	
	IVORY COAST				*	
	MALI				3,700	<1
	NIGERIA				*	
	SENEGAL				1,600	<1
	SUDAN				0	0
	TOGO				0	0
	MADAGASCAR				2,835,649	5
	Eastern Forests					
LATIN AMERICA (3)	ECUADOR				3,257,943	5
	Coastal Forest					
	BRAZIL				5,483,535	9
	Brazilian Atlantic Forest					
	COLOMBIA				1,450,650	2
	Choco Region Forest					
	Western Amazon Uplands					
	COLOMBIA				*	
	ECUADOR				*	
	PERU				1,923,445	3
	VARIOUS				1,723,000	3
	MEXICO				5,528,809	9

Table 4. U.S. Funding for Countries with High Priority Regions for Biological Diversity Conservation, 1989 (continued)

Priority COUNTRIES and Regions		"Hotspots" (2)	IUCN/UNEP Priorities (3)	Megadiversity Countries (4)	1989 Funding (1) Amount ($)	1989 Funding (1) Percent of Total Funding
ASIA	Indochina Plains and Valleys					
	CAMBODIA				0	0
	LAOS				0	0
	THAILAND				699,449	1
	Bengal and Assam Lowlands, Swamp Forest					
	BANGLADESH				15,000	<1
	INDIA				649,754	1
	South Indochina Coast					
	CAMBODIA				*	
	THAILAND				*	
	VIET NAM				5,500	<1
	Eastern Himalayas					
	BHUTAN				249,888	<1
	INDIA				*	
	NEPAL				375,959	1
	MALAYSIA				448,846	1
	Peninsular Malaysia					
	Northern Borneo (Sabah and Sarawak)					
	INDONESIA				1,394,244	2
	Northern Borneo (Kalimantan)					
	BURMA				10,151	<1
	CHINA				666,278	1
	PHILIPPINES				363,068	1
	SRI LANKA (Southwest Forest)				37,800	<1
OCEANIA	AUSTRALIA				N/A**	
	Queensland Forest					
	NEW CALEDONIA				N/A**	
TOTAL		20,155,981	9,202,646	23,758,903	26,163,459	42

Source: Biodiversity Projects Database. World Resources Institute.

Notes—

	Country or region identified as priority within the above scheme.
*	Country funding listed previously.
**	Not included in survey.

(1) Funding is by country and may include projects outside the indicated priority regions.

(2) Ten areas with high biodiversity, high endemism, and rapid rates of habitat depletion. See Myers, 1988, and McNeely, et al., 1990.

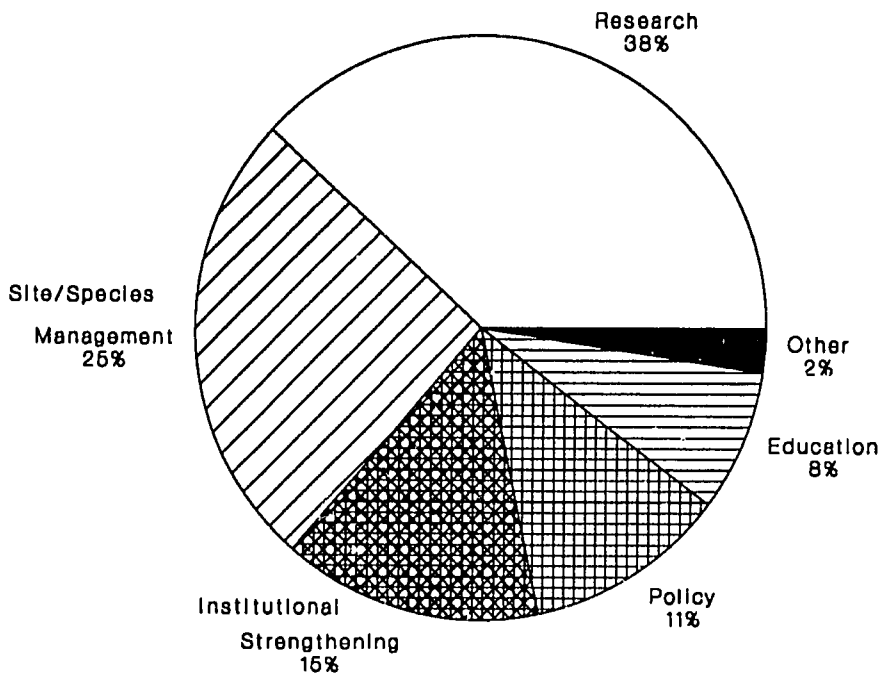
(3) Based on the IUCN/UNEP reports (1986 a,b,c), which identify regions for increased habitat protection based on their biological diversity, level of endemism, amount of original habitat remaining, and portion of habitat currently protected. The IUCN/UNEP report covering Latin America and the Caribbean has not yet been published.

(4) Megadiversity countries are the 12 nations with the greatest biological diversity and species endemism. These nations together hold about 60 to 70 percent of the world's biodiversity. See Mittermeier and Werner, 1988, and McNeely, et al., 1990.

Two additional priority schemes were also examined, but do not appear in Table 4. Conservation International (in McNeely, et al., 1990) identified several regions as major tropical forest wilderness areas—large expanses of primary forest likely to remain relatively undisturbed well into the next century. These areas include the central Zaire basin, southern Guianas, southern Venezuela, northernmost Brazilian Amazon, portions of the western Amazonian lowlands, and the island of New Guinea. Together, the countries included in these major wilderness areas received 27 percent of the total funding ($16.8 million). The U.S. National Academy of Sciences (1980) recommended eleven tropical areas for special attention because of their high diversity, endemism, and threat. These areas, which together received $16.6 million (28 percent), were the coastal forests of Ecuador, the cocoa region of Brazil, eastern and southern Brazilian Amazon, Camercon, the mountains of Tanzania, Madagascar, Sri Lanka, Borneo, Sulawesi, New Caledonia, and Hawaii.

The current survey included a question on the biome(s)—the complex of communities of living organisms characterized by distinctive climate and vegetation—in which the project was active. Two-thirds of the responses did not provide this information, and most of those that did were primarily from one large organization. As a result, biome data were not judged to be representative of all projects and so were not included in this analysis.

Figure 2. U.S. Funding for Biodiversity by Type of Activity, 1989



Source:Biodiversity Projects Database. World Resources Institute

Analysis of types of projects

Projects were classified by their three main activities. Not all projects had a secondary or tertiary focus of activity designated. Because in most cases the portion of funding allocated to various activities of a project could not be determined, all funds were assigned to the principal focus. In other words, if a research project had a training component, all funds were designated as research.

As in 1987, research projects received the most funding in 1989—38 percent of the total. (*See Figure 2.*) The $24.0 million spent in 1989 represents a 44-percent increase over 1987 research funding ($16.7 million). (*See Table 5.*) Most research funding was for basic ecosystem, species, and systematics research. (*See Table 6.*) A much smaller share supported applied research, such as studying ecosystem or species response to disturbance or assessing their economic value. Funding for systematics more than doubled, moving from $3.5 million for 123 projects in 1987 to $10.1 million for 141 projects in 1989.

Other areas also experienced an increase in funding in the two years since the last survey. (*See Table 5.*) Policy planning and analysis received $7.2 million in 1989, representing a doubling of 1987 levels. Part of this increase may reflect fine tuning of the categories in this focus area since the last survey. Also included in this figure is a substantial amount ($2.9 million) for debt-for-nature swaps. (*See Table 6.*) The figure reported for the debt swaps was the amount used to purchase the debt rather than the face value of that debt. For instance, if $0.5 million was used to purchase $4.0 million in debt, the $0.5 million was reported.

Site- and species-management received the second largest share of funding in both years of the study. In 1989, one fourth of the total was invested in these efforts. (*See Figure 2.*) The $16.0 million invested in 1989 represents an 88-percent increase over the 1987 figure of $8.5 million. (*See Table 5.*) Most of the 1989 funding was for site management; relatively less was directed towards managing individual species, probably because funders tend to support areas

Table 5. U.S. Funding for Biological Diversity Research and Conservation Projects by Focus of Activity, 1987 and 1989

	1987				1989				1987 to 1989
			Number of Projects				Number of Projects		
Project Focus	Funding ($US)*	Percent of Funding	Primary Focus	Secondary or Tertiary	Funding ($US)*	Percent of Funding	Primary Focus	Secondary or Tertiary	Percent Change in Funding
Research	16,664,752	44	346	72	24,017,953	38	413	136	44
Site/Species Management	8,544,109	23	193	99	16,037,342	25	226	135	88
Policy Planning/Analysis	2,284,852	6	62	22	7,219,463	11	75	34	216
Education	5,520,599	15	180	51	4,921,250	8	214	79	-11
Institutional Strengthening	4,445,878	12	87	14	9,243,752	15	149	33	108
Other	63,000	1	5	0	1,496,653	2	16	0	2276
TOTAL	37,523,190	100	873		62,936,413	100	1093		68

Source: Biodiversity Projects Database. World Resources Institute.

* In this analysis, all funds were allocated to the principal focus.

** Not all survey responses listed a secondary or tertiary focus for each project.

Table 6. U.S. Funding for Biological Diversity in Developing Countries by Specific Activity, 1989

	1989 Funding		Number of Projects	
	Amount	Percent of Focus Total	By Primary Focus	By Secondary and Tertiary Focuses
RESEARCH				
Basic Research				
Ecosystem Research	3,864,241	16	50	25
Species Research	3,700,029	15	125	23
General Basic Research	2,160,929	9	36	7
Systematics/Inventories	10,066,456	42	141	29
Applied Research				
Response to Disturbance	975,837	4	17	23
Economic Assessment of Species or Ecosystems	1,704,622	7	18	13
Social and Cultural Values of Biological Diversity	1,318,839	5	22	11
Other Specific Applied Research	45,000	0	1	1
General Applied Research	50,000	0	1	1
General Research	132,000	1	2	3
TOTAL FOR RESEARCH	24,017,953	100	413	136
SITE OR SPECIES MANAGEMENT				
Protected Areas				
Planning and Establishment	4,300,168	27	44	34
Management	3,992,989	25	69	37
Buffer Zone Management	1,672,110	10	14	17
General Protected Areas	2,411,513	15	10	7
Ecosystem Restoration	78,780	0	4	0
Species Management				
In-situ Species Mgmt.	1,871,343	12	62	21
Ex-situ Species Mgmt.	47,770	0	9	9
General Species Mgmt.	0	0	0	5
Other Site or Species Mgmt.	149,896	1	3	1
General Site or Species Mgmt.	1,512,773	9	11	4
TOTAL FOR MANAGEMENT	16,037,342	100	226	135
POLICY PLANNING AND ANALYSIS				
Conservation Law/Regulatory Policy	745,706	10	29	8
Natural Resources Accounting	0	0	0	0
Economic Policy Analysis and Reform	0	0	0	1
Program/Project Planning or Design	2,625,191	36	20	9
Program/Project Evaluation	21,684	0	2	0
Statistics/Indicators	313,966	4	9	7
Environmental Impact Statements	0	0	0	1
Biodiversity Assessments/Profiles	663,500	9	8	5
Other (Including Debt Swaps)	2,824,416	39	6	1
General Policy Planning and Analysis	25,000	0	1	2
TOTAL FOR POLICY PLANNING AND ANALYSIS	7,219,463	100	75	34
EDUCATION				
Public Awareness	625,918	13	41	26
Curriculum Develop.—Primary/Sec. Schools	51,217	1	3	5
Degree-Oriented Training	1,215,479	25	19	10
Technical Training	2,284,012	46	145	30
General Education	744,624	15	6	8
TOTAL FOR EDUCATION	4,921,250	100	214	79
INSTITUTIONAL SUPPORT	9,243,752	100	149	33
OTHER	1,496,653	100	16	0
TOTAL	62,936,413		1,093	

Source: Biodiversity Projects Database. World Resource Institute.

* Allocated by Primary Focus.

and actions that protect a diversity of species rather than a single species.

Support for strengthening organizations working in developing countries more than doubled to $9.2 million in 1989, representing a 108-percent increase. The number of projects increased from 87 (1987) to 149 (1989). Most of this funding went directly to in-country organizations; a smaller share went to U.S. organizations to provide grants and assistance to in-country organizations. Nearly $6.0 million of the total funding for institutional strengthening was provided by U.S. foundations. U.S. NGOs accounted for $1.8 million of the total.

The 214 projects focused primarily on education received $4.9 million in 1989. (*See Table 5.*) Relatively speaking, a large number of projects received a smaller per project amount than in other categories. Many other projects had some educational components. Even though the number of projects with education as their primary focus grew from 180 in 1987 to 214 in 1989, total funding for this category fell by 11 percent. This drop in funds probably reflects the absence of a large USAID and Fish and Wildlife Service small grants project included in the 1987 survey under the education category.

The final focus category ("other") showed a very large relative increase from 1987 to 1989. Most of the $1.5 million in this category was dedicated to the USAID-funded Conservation of Biological Diversity Project, which is a joint program of World Wildlife Fund, World Resources Institute, and The Nature Conservancy that carries out projects in all of the other categories.

A complete analysis of funding to specific types of activities within the sub-categories is found in Table 6.

When funding for various activities is analyzed on a regional basis, several interesting points emerge. Sixty-eight percent of all funding for research went to Latin America and the Caribbean. (*See Table 7.*) The research total for South America doubled between 1987 and 1989. Research funding in Africa nearly doubled between 1987 and 1989 to $4.2 million. While this represents only 17 percent of the 1989 global research funding, it accounts for 40 percent of total funding to Africa in that year. Only 8 percent of all research funding was allocated to Asian projects.

Funding to South America for site and species management more than tripled from 1987 to 1989. (*See Table 7.*) The $5.1 million for South American projects represents 32 percent of the 1989 world total for these activities. Central American projects received 26 percent of the total and Caribbean projects 10 percent. In Asia, the figure almost doubled from $0.9 million in 1987 to $1.6 million in 1989, but still represents only 10 percent of the world total for site and species management. The 20 percent of the world total for these activities that went to African projects represented 31 percent of the region's total funding.

Due to the large overall increase in funding for policy planning and analysis, all regions showed large gains. (*See Table 7.*) Almost half of all 1989 funding in this category went to projects in South America.

Of all education funding, over half (56 percent) went to Latin America, 12 percent to Africa, 8 percent to Asia, and 23 percent to global projects. For projects designed to strengthen institutions, 43 percent went to organizations working in Central America. That $4.0 million in 1989 is triple the 1987 figure for the region. The $2.6 million going to South American institutions represents 28 percent of the world total and only a slight increase in the 1987 figure. Institutional strengthening activities in Africa and Asia received $0.9 and $0.7 million, respectively.

Table 7. U.S. Funding for Biological Diversity Research and Conservation Projects by Region and Focus of Activity, 1989

Region	Primary Focus — 1989 Funding ($US)* (Number of Projects)						
	Research	Site/Species Management	Policy Planning/ Analysis	Education	Institutional Strengthening	Other	TOTAL
Africa	4,202,042 (93)	3,182,320 (49)	1,552,778 (16)	584,576 (42)	903,756 (17)	0 (0)	10,425,472 (217)
Asia	1,851,216 (46)	1,609,039 (41)	663,894 (13)	369,149 (25)	658,366 (19)	583,800 (12)	5,735,464 (156)
Oceania	606,987 (13)	81,450 (1)	65,000 (1)	5,060 (2)	5,000 (1)	0 (0)	763,497 (18)
Latin America and the Caribbean							
Caribbean	810,211 (16)	1,626,394 (8)	145,500 (3)	68,908 (11)	175,600 (6)	0 (0)	2,826,613 (44)
Central America	5,771,535 (89)	4,235,678 (65)	1,086,527 (12)	979,850 (39)	3,951,064 (41)	52,728 (1)	16,077,382 (247)
South America	7,538,130 (124)	5,077,892 (59)	3,521,343 (22)	694,629 (54)	2,557,966 (50)	4,000 (1)	19,393,960 (310)
Regionwide	2,460,549 (20)	44,569 (2)	7,000 (1)	1,102,012 (22)	550,900 (6)	0 (0)	4,165,030 (51)
Global/Multiregional	777,283 (12)	180,000 (1)	177,421 (7)	1,117,066 (19)	441,100 (9)	856,125 (2)	3,548,995 (50)
TOTAL	24,017,953 (413)	16,037,342 (226)	7,219,463 (75)	4,921,25 (214)	9,243,752 (149)	1,496.653 (16)	62,936,413 (1,093)

Source: Biodiversity Projects Database. World Resources Institute.

* In this analysis, all funds were allocated to the principal focus.

Analysis of funders

In 1987 and again in 1989, the largest U.S. funder of biodiversity research and conservation projects in developing countries was the U.S. government. (*See Figure 3* and *Table 8.*) Various agencies and departments funded $23.1 million, a 16-percent increase over 1987. The 1989 figure might have been higher if not for a drop in reporting by one U.S. government agency. The U.S. government funded half of the total for research and over one third of the site and species management projects. (*See Table 9.*) The two largest government funders remain the National Science Foundation (NSF) and the U.S. Agency for International Development (USAID). (The NSF was the single largest funder of basic research projects.) Both NSF and USAID increased their funding considerably in 1989—NSF by 71 percent to $10.6 million and USAID by 83 percent to $9.3 million.

The most outstanding change since 1987 has been the huge increase in funding by U.S. foundations. The $21.4 million donated by foundations represents a sevenfold increase in a two-year period. (*See Figure 3* and *Table 8.*) In 1989, they funded three times as many projects (158) as in 1987, making them the second largest U.S. funder. Much of this increase can be attributed to a very large increase in funding by the John D. and Catherine T. MacArthur Foundation, which provided over half of the total from all foundations in 1989. Large relative increases were also shown by the Pew Charitable Trusts, and the W. Alton Jones, Jessie Smith Noyes, and Mellon Foundations. While research and institution strengthening activities together received over half of all foundation support, their support is more evenly distributed among other activity categories than that of the government. (*See Table 9.*)

Non-governmental organizations contributed 16 percent of the total funding ($9.8 million for 437 projects), a slight increase over 1987. (*See Table 8.*) What may appear as a relatively flat level of funding is probably a reflection of more detailed reporting by NGOs on the sources of project funds in 1989. Most funding reported in the 1989 data was generated through donations from NGO members and supporters. Funding by NGOs was fairly evenly distributed among activities, with slightly over half focused on research and site and species management. (*See Table 9.*) Institution strengthening received almost one-fifth of the funds that NGOs provided.

Thirteen percent of the total ($8.1 million for 167 projects) was funded by a mixture of funders, including those types identified above. (*See Table 8.*) One percent of the total ($0.5 million) was funded by a variety of other types of funders including botanical gardens, zoos, corporations, museums, universities, and private sources.

Figure 4 examines the regional distribution of funding by types of funders. All major funder types—foundations, U.S. government, and NGOs—allocated over half of their funding to Latin America. Foundations devoted 88 percent of their funding to this region; NGOs, 60 percent; and the government, 54 percent. For projects in Africa or Asia and Oceania, foundations invested less than 5 percent in each. The government invested 24 percent in Africa and 20 percent in Asia and Oceania. NGOs invested 20 percent in Asia and Oceania, 17 percent in Africa. Table 10 lists the dollar amount invested in each region by funder type.

Analysis of types of project implementors

Thanks to the large overall increase in funding between 1987 and 1989, virtually all types of institutions that carry out project activities showed a rise in the amount of funding they used. (*See Table 11.*) Only the value of the projects undertaken by the U.S. government was constant over the two years. Botanical gardens and zoos

Table 8. U.S. Funding for Biological Diversity Research and Conservation Projects by Type of Funder, 1987 and 1989

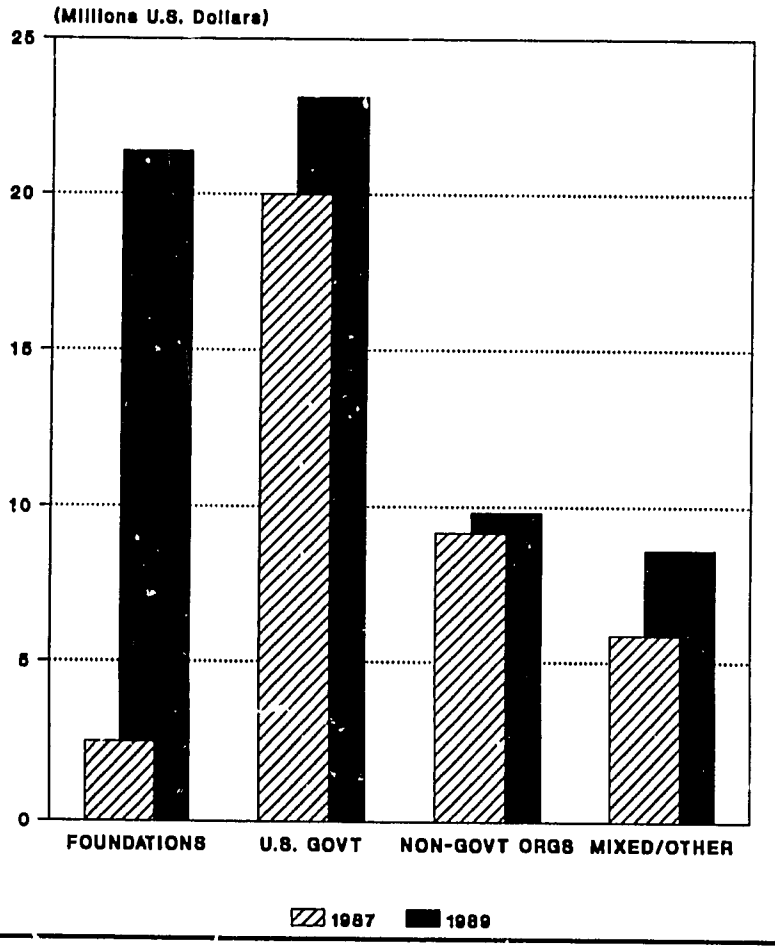
Funder	1987 Funding ($US)	1987 No. of Projects	1987 Percent of Total Funding	1989 Funding ($US)	1989 No. of Projects	1989 Percent of Total Funding	1987 to 1989 Percent Change in Funding
Foundations	2,491,771	56	7	21,365,612	158	34	757
Government (U.S.)	20,002,869	367	53	23,137,285	316	37	16
Non-Governmental Organizations (NGOs)	9,167,788	326	24	9,821,291	437	16	7
Mixed*	5,564,791	106	14	8,068,241	167	13	45
Other**	295,971	18	—	543,984	15	1	84
TOTAL	37,523,190	873	100	62,936,413	1,093	100	68

Source: Biodiversity Projects Database. World Resources Institute.

* More than one source of funding identified.

** Includes Botanical Gardens, Corporations, Museums, Universities, Zoos.

Figure 3. U.S. Biodiversity Investments by Type of Funder, 1987 and 1989



Source: Biodiversity Projects Database. World Resources Institute.

Table 9. U.S. Funding for Biological Diversity Research and Conservation Projects by Funder Type and Focus of Activity, 1989.

	Primary Focus — 1989 Funding ($)* (Number of Projects)						
Funder Type	Research	Site/Species Management	Policy Planning/ Analysis	Education	Institutional Strengthening	Other	TOTAL
Foundations	7,359,398 (31)	3,529,438 (23)	2,687,594 (13)	1,698,620 (28)	5,962,262 (62)	128,300 (1)	21,365,612 (158)
Government (U.S.)	11,896,453 (154)	6,048,147 (45)	1,817,365 (17)	1,396,007 (76)	646,824 (12)	1,332,489 (12)	23,137,285 (316)
Non-Governmental Orgs.	2,055,149 (118)	3,524,675 (124)	1,307,569 (36)	1,095,487 (89)	1,802,547 (67)	35,864 (3)	9,821,291 (437)
Mixed**	2,223,142 (96)	2,874,909 (33)	1,406,935 (9)	731,136 (21)	832,119 (8)	0 (0)	8,068,241 (167)
Others***	483,811 (14)	60,173 (1)	0 (0)	0 (0)	0 (0)	0 (0)	543,984 (15)
TOTAL	24,017,953 (413)	16,037,342 (226)	7,219,463 (75)	4,921,250 (214)	9,243,752 (149)	1,496,653 (16)	62,936,413 (1,093)

Source: Biodiversity Projects Database. World Resources Institute.

* In this analysis, all funds were allocated to the principal focus.

** More than one source of funding identified.

*** Includes Botanical Gardens, Corporations, Museums, Universities, Zoos.

Table 10. U.S. Funding for Biological Diversity Research and Conservation Projects by Funder Type and Region, 1989

Region	Funder Type — 1989 Funding ($)* (Number of Projects)					
	Foundations	Government Agencies	Non-Governmental Organizations	Mixed**	Others***	TOTAL
Africa	842,786 (15)	5,511,423 (67)	1,687,237 (64)	2,281,986 (70)	102,040 (1)	10,425,472 (217)
Asia	656,446 (14)	3,282,605 (73)	1,474,913 (54)	321,500 (15)	0 (0)	5,735,464 (156)
Oceania	0 (1)	513,357 (7)	209,140 (4)	41,000 (6)	0 (0)	763,497 (18)
Latin American and the Caribbean						
Caribbean	78,601 (4)	2,228,684 (17)	257,328 (18)	242,000 (3)	20,000 (2)	2,826,613 (44)
Central America	7,402,442 (43)	5,262,081 (76)	1,733,020 (101)	1,639,839 (24)	40,000 (3)	16,077,382 (247)
South America	9,555,337 (61)	3,462,870 (45)	3,347,750 (158)	2,956,059 (41)	71,944 (5)	19,393,960 (310)
Regionwide	1,770,000 (7)	1,553,766 (18)	577,790 (21)	263,474 (5)	0 (0)	4,165,030 (51)
Global/Multiregional	1,060,000 (13)	1,322,499 (13)	534,113 (17)	322,383 (5)	310,000 (2)	3,548,995 (50)
TOTAL	21,365,612 (158)	23,137,285 (316)	9,821,291 (437)	8,068,241 (169)	543,984 (13)	62,936,413 (1,093)

Source: Biodiversity Projects Database. World Resources Institute.

* In this analysis, all funds were allocated to the principal focus.

** More than one source of funding identified.

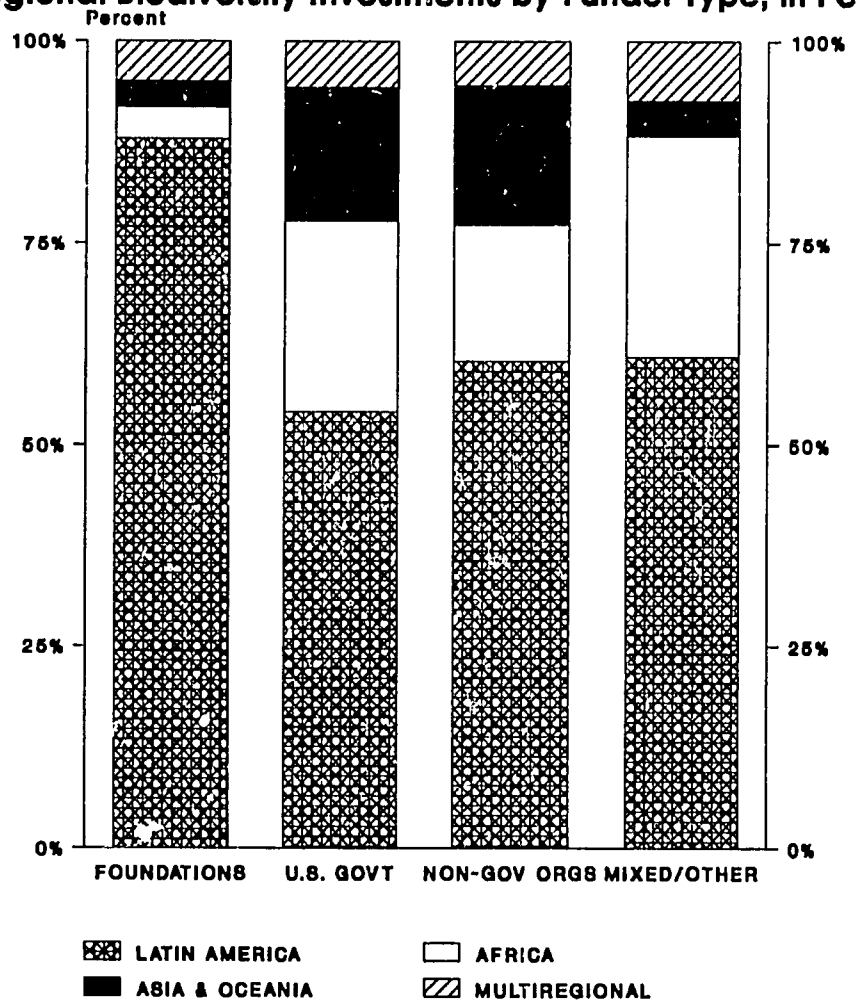
*** Others: Includes Botanical Gardens, Corporations, Individuals, Museums, Universities, Zoos.

showed the largest gain between 1987 and 1989. In 1987, they carried out 79 projects worth $3.2 million—9 percent of the 1987 total. In 1989, these institutions implemented 15 percent of the total—or $9.3 million (a 186 percent increase).

Non-governmental organizations also experienced a sizable increase in funding—87 percent over the two years. In 1989, they implemented 508 projects worth $28.4 million—45 percent of the total funding. University-implemented project funding rose 51 percent, largely because of the sizable increase in funding from the National Science Foundation, the principal funder of university-based biodiversity projects. While funding for museums has risen by 31 percent since 1987, the $0.6 million in projects they carried out represents only 1 percent of the 1989 total.

In the current study, the portion of U.S.-funded projects implemented by institutions within the countries where the project was taking place versus the portion implemented by U.S. or other outside institutions was determined for the first time. Projects were coded for in-country, U.S.,

Figure 4. Regional Biodiversity Investments by Funder Type, In Percent, 1989



Source: Biodiversity Projects Database. World Resources Institute.

Table 11. U.S. Funding for Biological Diversity Research and Conservation Projects by Type of Implementor, 1987 and 1989

Implementor Type	1987 Funding ($US)	1987 Percent of Total Funding	1987 No. of Projects	1989 Funding ($US)	1989 Percent of Total Funding	1989 No. of Projects	1987 to 1989 Percent Change in Funding
Botanical Gardens/Zoos	3,245,005	9	(79)	9,271,724	15	(114)	186
Government (U.S.)	9,134,551	24	(204)	9,205,212	15	(187)	1
Museums*	472,853	1	(16)	618,340	1	(26)	31
Non-Governmental Organizations	15,160,336	40	(431)	28,407,145	45	(508)	87
Universities	8,883,657	24	(136)	13,388,606	21	(218)	51
Mixed/Others**	626,788	2	(7)	2,045,386	3	(40)	226
TOTAL	37,523,190	100	(873)	62,936,413	100	(1,093)	68

Source: Biodiversity Projects Database. World Resources Institute.

* The Smithsonian Institution is included under government implementors.

** Mixed: More than one type of implementor identified. Other: includes foundations, private corporations, and individuals.

Table 12. U.S. Funding for Biological Diversity Research and Conservation Projects by Type and Origin of Implementor, 1989

Implementor Type	In-Country	U.S.	Other International	Mixed	TOTAL
	Implementor Origin —1989 Funding ($US) (No. of Projects)—				
Botanical Gardens/Zoos	135,466 (9)	9,125,934 (104)	10,324 (1)	0 (0)	9,271,724 (114)
Corporations	72,404 (2)	71,950 (2)	0 (0)	0 (0)	144,354 (4)
Foundations	10,300 (1)	50,000 (1)	0 (0)	0 (0)	60,300 (2)
Government (U.S.)	1,215,022 (39)	7,972,190 (147)	18,000 (1)	0 (0)	9,205,212 (187)
Individuals	33,376 (7)	91,500 (3)	0 (0)	0 (0)	124,876 (10)
Museums*	355,734 (12)	262,606 (14)	0 (0)	0 (0)	618,340 (26)
Non-Governmental Organizations(NGOs)	10,030,116 (217)	16,749,336 (263)	924,693 (24)	703,000 (4)	28,407,145 (508)
Universities	1,682,169 (50)	11,494,157 (162)	111,400 (2)	100,880 (4)	13,388,606 (218)
Mixed**	846,094 (11)	24,723 (2)	0 (0)	945,039 (11)	1,715,856 (24)
TOTAL	14,380,681 (348)	45,842,396 (698)	1,064,417 (28)	1,648,919 (19)	62,936,413 (1,093)

Source: Biodiversity Projects Database. World Resources Institute.

* The Smithsonian Institution is included under government implementors.

** More than one type of implementor identified.

other international, or geographically mixed implementors. U.S. institutions from all sectors implemented 72 percent of the U.S.-funded projects. (*See Table 12.*) NGOs, universities, botanical gardens and zoos, and U.S. government agencies, in that order, carried out sizable shares of the $45.8 million of funding to U.S. institutions for biodiversity activities. Institutions based in developing countries carried out nearly one quarter (23 percent) of these projects. Most of the $14.4 million in U.S.-funded projects implemented by in-country institutions was carried out by NGOs ($10.0 million). Almost 3 percent of the funding was given to a mixture of in-country, U.S., and other international institutions. Less than 2 percent went solely to other international institutions.

Table 13 shows the types of activities implemented by various institutions. As might be expected, universities, botanical gardens, and zoos focus primarily on research—spending more than 80 percent of all funds received for this purpose and carrying out 76 percent of all research projects. While the U.S. government funds most of the research ($12.0 million), it carries out relatively little itself ($1.1 million). NGOs implement more projects in site and species management (61 percent), institution strengthening (81 percent), and policy planning and analysis (63 percent) than does any other type of institution. Yet, even site and species management accounts for only 35 percent of the total carried out by NGOs. Clearly, the types of activities undertaken by NGOs are diverse.

Table 13. U.S. Funding for Biological Diversity Research and Conservation Projects by Implementor Type and Focus of Activity, 1989

	Primary Focus — 1989 Funding ($US)* (Number of Projects)						
Implementor Type	Research	Site/Species Management	Policy Planning/ Analysis	Education	Institutional Strengthening	Other	TOTAL
Botanical Gardens/Zoos	7,449,433 (86)	112,474 (7)	461,162 (3)	1,003,655 (16)	245,000 (2)	0 (0)	9,271,724 (114)
Corporations	86,950 (3)	57,404 (1)	0 (0)	0 (0)	0 (0)	0 (0)	144,354 (4)
Foundations	0 (0)	50,000 (1)	0 (0)	10,300 (1)	0 (0)	0 (0)	60,300 (2)
Government (U.S.)	1,088,114 (26)	4,042,730 (34)	1,493,384 (15)	2,185,586 (97)	395,398 (15)	0 (0)	9,205,212 (187)
Non-Governmental Orgs.	3,999,228 (121)	9,826,578 (148)	4,520,078 (45)	1,071,899 (66)	7,498,209 (113)	1,491,153 (15)	28,407,145 (508)
Museums	362,221 (19)	53,419 (3)	0 (0)	7,700 (3)	195,000 (1)	0 (0)	618,340 (26)
Universities	10,853,374 (150)	623,758 (25)	635,000 (10)	505,103 (20)	771,371 (13)	0 (0)	13,388,606 (218)
Individuals	9,000 (2)	0 (0)	0 (0)	26,595 (5)	83,781 (2)	5,500 (1)	124,876 (10)
Mixed**	169,633 (6)	1,270,979 (7)	109,839 (2)	110,412 (6)	54,993 (3)	0 (0)	1,715,856 (24)
TOTAL	24,017,953 (413)	16,037,342 (226)	7,219,463 (75)	4,921,250 (214)	9,243,752 (149)	1,496,653 (16)	62,936,413 (1,093)

Source: Biodiversity Projects Database. World Resources Institute.

* In this analysis, all funds were allocated to the principal focus.

** Mixed: More than one type of implementor identified.

CONCLUSIONS

The efforts of U.S. institutions to sustain biological wealth in the tropics reveal both promising signs and causes for continued concern. In 1987, U.S institutions spent $37.5 million on biodiversity research and conservation in developing countries. Two years later, investments by these institutions had increased two thirds to $62.9 million. Yet, Africa and Asia continued to receive very little funding in 1989 (less than $17.0 million together). The large relative increase in support for institutions based in developing countries, while still a small amount, is also encouraging for it is in their hands that the future ultimately rests. However, even regions, countries, or activities that may appear to have received relatively larger shares of the total funding still do not get enough to stem, much less reverse, the tide of biodiversity loss.

Certainly, measured against the pressing needs in these regions and compared to other types of development-related expenditures the amounts spent on biodiversity research and conservation are still shamefully small. In 1987, the United States provided $9.3 billion in Official Development Assistance (ODA) (WRI, 1990)—$37 for each American. (This figure excludes private contributions for development assistance.) In contrast, the $62.9 million spent by public and private institutions on biodiversity in developing countries represented a U.S. per capita investment of $0.25 (25 cents). Compared with expenditures for projects such as the space station ($30 billion), the superconducting supercollider ($8 billion), or the mapping of the human genome ($3 billion) (Lewin, 1990), the amount spent on ODA seems small—and the amount invested in global biodiversity appears minuscule. Indeed, Americans spent almost 1,000 times more on movie tickets, $5 billion in 1989 (*U.S. News and World Report*, 1990), than on biodiversity conservation.

While it is difficult to determine exactly how much would be required to ensure that our planet's biodiversity is maintained, it may be illustrative to note the levels of funding proposed by experts for elements of biodiversity conservation. For example, an international group charged with assessing the needs for improved conservation of plant genetic resources suggested establishing a Fund for Plant Genetic Resources with $500 million per year (Keystone Madras Dialogue, 1990). The Global Environmental Facility being established at the World Bank to provide grants or concessionary loans to member countries for global-scale projects to reduce global warming, protect international waters, and preserve biological diversity will be capitalized at $1 to $1.5 billion (*Wall Street Journal*, 1990).

Even in difficult economic times, people recognize that environmental degradation is a serious problem that jeopardizes their own and their children's future and have indicated their willingness to take action. A UNEP-commissioned public opinion poll (Harris, 1989) in 15 countries (including the United States) clearly demonstrates that from Argentina to Zimbabwe, people view biological impoverishment and land

degradation as dire problems. In country after country, the poll found, people perceive that in 50 years their environment will be more degraded than it is now, favor strong action by their own government and international institutions to protect the environment, and are ready to accept a lower standard of living and pay higher taxes to protect their health and the environment. Of course, it's easier to be idealistic in polls than in practice, but there are a wealth of examples in every country of the world of individuals and groups working locally to preserve their biological heritage. Efforts range from protecting the forest in Indonesia to planting trees in Kenya to preserving indigenous varieties of agricultural species in Guatemala to marching to save the butterflies in Mexico. Clearly, whether their feelings are grounded in the love of nature or in concern over food, water, health or livelihoods, the consensus on the need for action is strong.

Yet, basic issues remain unresolved: What is to be done? And who is to pay? Besides the countless local and national efforts, several international efforts are under way to address these issues and help decision-makers come to grips with them. The Latin American and Caribbean Commission on Development and Environment (1990) suggested that "...industrial countries must demonstrate an equal commitment ... in a manner commensurate with their contribution to environmental degradation and their substantial ability to support and implement new environmental policies." In *Conserving the World's Biological Diversity*, McNeely et al. (1990) maintain that funding mechanisms should be based on the principle that "...those who benefit from biological resources should pay more for the costs of ensuring that such resources are used sustainably." Another international effort, a follow-up report to the 1980 World Conservation Strategy, is now being prepared by the World Conservation Union (IUCN), the United Nations Environment Programme, and the World Wide Fund for Nature. Three international organizations— IUCN, UNEP, and WRI—are organizing a Biodiversity Conservation Strategy Programme in partnership with local and regional organizations around the world. Participants will develop a global strategy and action plan, to be released in 1992, and stimulate national plans for conserving biodiversity. In conjunction with this effort, the author will collect more data on the financial and institutional investments of other donor countries, as well as the actions and investments taken by nations within their own borders. A major focus will be to obtain information on the substantial financial and institutional investments that many developing countries have made to preserve their own biodiversity. Together, these data can help individuals, organizations, and governments monitor progress and make wise decisions about the future of the earth's biological wealth.

While it is clear that greater investments in conservation are called for, large increases in funding alone will not achieve the desired goal if government policies in other sectors are incompatible with these goals (McNeely, et al., 1990) and if related issues—population, economic policies and measurements, poverty, women's roles and status, land distribution, overexploitation, and others—are not part of the equation. Also critical is listening to the clear strong voice of the people who will ultimately be affected by such strategies. These people must feel certain that they will be able to provide for themselves and their children well into the future before they can take the steps needed locally to sustain the resource base. Only equipped with sufficient financial resources, critical information on status and trends, and the full participation of affected peoples can we maintain the biological wealth upon which the current and future generations of all nations depend.

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APPENDIX I

Questionnaire and Categories Used to Classify Biological Diversity Research and Conservation Activities

QUESTIONNAIRE
Survey Of Biological Diversity Research And Conservation Programs In Developing Countries In 1989

1. Reporting institution: _____

   Your name: _____

2. Project implementor (if different than reporting institution): _____

   _____

3. Project title: _____

4. Countries/region: _____

5. When was the project started? _____

   When will the project be completed? _____ _____

6. What other organizations are participating in the project (United States and host country)? _____

   _____

7. Project manager: _____

8. Total funds allocated in fiscal/calender year 1988: _____

   Source(s) of funds: _____

9. Total funds allocated in fiscal/calender year 1989: _____

   Source(s) of funds: _____

10. Which biome classification(s) best describes where the activities take place? Please check no more than two of the following:

- ☐ 1.0 Forest
  - ☐ 1.10 Tropical
    - ☐ 1.11 Moist (including lowland, premontane moist, wet, rainforest)
    - ☐ 1.12 Dry/Deciduous (including monsoon forest and woodland)
    - ☐ 1.13 Evergreen Sclerophyllous (including forest, scrub, woodland)
  - ☐ 1.20 Subtropical
- ☐ 2.0 Tropical grasslands/savannas
- ☐ 3.0 Desert/semidesert
- ☐ 4.0 River and lake systems
- ☐ 5.0 Coral reefs
- ☐ 6.0 Other coastal systems
- ☐ 7.0 Active in more than two biomes

11. How can the predominant foci of the program best be classified? Rank the top 3; 1 = most important activity. Descriptions of the categories are attached.

RESEARCH

1.10 Basic Research

- ☐ 1.11 Ecosystem
- ☐ 1.12 Species

1.20 Applied Research

- ☐ 1.21 Response to disturbance
- ☐ 1.22 Economic assessment of species or ecosystems
- ☐ 1.23 Social and cultural dimension/value of biological diversity
- ☐ 1.24 Other

☐ 1.30 Systematics/Inventory

SITE OR SPECIES MANAGEMENT

- ☐ 2.11 Protected areas planning and establishment
- ☐ 2.12 Protected areas management
- ☐ 2.13 Protected areas buffer zone management
- ☐ 2.20 Ecosystem restoration
- ☐ 2.31 In-situ species management
- ☐ 2.32 Ex-situ species management
- ☐ 2.40 Other

POLICY PLANNING AND ANALYSIS

- ☐ 3.1 Conservation law/regulatory policy
- ☐ 3.2 Natural resources accounting
- ☐ 3.3 Economic policy analysis and reform
- ☐ 3.4 Program/project planning or design
- ☐ 3.5 Program/project evaluation
- ☐ 3.6 Statistics, indicators
- ☐ 3.7 Environmental impact assessment
- ☐ 3.8 Other

EDUCATION

- ☐ 4.1 Public awareness
- ☐ 4.2 Curriculum development for primary and secondary schools
- ☐ 4.3 Degree-oriented training
- ☐ 4.4 Technical training

☐ **INSTITUTIONAL SUPPORT**

☐ **OTHER** (explain)

Please attach a brief description of the project and return to:

Janet N. Abramovitz
Center for International Development and Environment
World Resources Institute
1709 New York Avenue, NW
Washington, DC 20006

Categories Used To Classify Biological Diversity Research And Conservation Activities

RESEARCH

1.10 **Basic**

1.11 **Ecosystem**—Research into the patterns and processes of ecosystems.

1.12 **Species.**

1.20 **Applied**

1.21 **Response to disturbance**—Research on the impacts that human or natural disturbances can have on biological diversity; includes research and development of technologies to mitigate adverse impacts of human development activities.

1.22 **Economic assessment of species or ecosystems**—Quantification of the tangible values of conserving biological diversity; includes screening for valuable new species and varieties.

1.23 **Social and cultural dimension/value of biological diversity**—Documentation of the anthropological, religious and social values of biodiversity; includes assessment of the impact on society of a loss of biological diversity.

1.24 **Other.**

1.30 **Systematics/Inventory**—Identification and cataloging of species; includes traditional crop and animal varieties.

SITE OR SPECIES MANAGEMENT

2.11 **Protected areas planning and establishment**—Planning and establishment of national parks, wildlife sanctuaries, biosphere reserves, or other land areas with a primary function of maintaining the indigenous flora and fauna of the area.

2.12 **Protected areas management**—Management of national parks, wildlife, sanctuaries, biosphere reserves, or other land areas with a primary function of maintaining the indigenous flora and fauna of the area.

2.13 **Protected areas buffer zone management**—Development and management of multiple-use areas in buffer zones surrounding protected areas and critical natural ecosystems; activities within these areas may include more effective and sustainable silvicultural, agricultural, and rangeland practices or the development of rural employment.

2.20 **Ecosystem restoration**—Restoration of the ecological integrity of ecosystems through restoring and maintaining indigenous flora and fauna to degraded areas.

2.31 **In-situ species management**—Establishment or enhancement of wild plant and animal management programs in their native habitats; not limited to protected areas.

2.32 **Ex-situ species management**—Wild plant and animal management in a setting other than the native habitat; examples include seed banks and captive breeding programs.

2.40 Other.

POLICY PLANNING AND ANALYSIS

3.1 **Conservation law/regulatory policy**—Actions that further government adoption of laws and regulations that promote the conservation of biological diversity.

3.2 **Natural resources accounting**—Development of natural resource accounting mechanisms that identify the contributions of biological diversity to the value of goods and services in the national economy.

3.3 **Economic policy analysis and reform**—Analysis and/or reform of government economic policies that influence the conservation and use of biological diversity.

3.4 **Program/project planning and design**

3.5 **Program/project evaluation**—Assessing the effectiveness of programs'/projects' progress toward conservation objectives.

3.6 **Statistics, indicators**—Developing, compiling, and maintaining statistics on the distribution, condition, and trends of biological resources.

3.7 **Environmental impact assessment**—Assessments of the effects of development and construction activities on biological diversity.

3.8 **Other.**

EDUCATION

4.1 **Public awareness**—Educational campaigns aimed at informing the public about conservation issues and the value of biological diversity.

4.2 **Curriculum development for primary and secondary schools.**

4.3 **Degree-oriented training**—University training either in-country or abroad.

4.4 **Technical training**—Includes workshops, short courses, and other professional development programs.

INSTITUTIONAL SUPPORT—Financial or technical assistance for training, organizational development, or program implementation or improvement.

OTHER

APPENDIX II

U.S. Biodiversity Investments Per 1000 Hectares, 1989

U.S. Biodiversity Investments per 1000 Hectares, 1989

	Land Area (000 ha)	1989 Funding ($US)	Dollars per 1,000 ha
DEVELOPING COUNTRIES	6,936,928	62,936,413	9
AFRICA	2,732,182	10,425,472	4
Seychelles	27	149,699	5544
Rwanda	2,495	298,991	120
Uganda	19,955	1,020,701	51
Madagascar	58,154	2,835,649	49
Kenya	56,697	2,101,170	37
Tanzania	88,604	742,758	8
Cameroon	46,540	380,603	8
Sierra Leone	7,162	54,873	8
Gambia, The	1,000	5,695	6
Gabon	25,767	119,700	5
Central African Rep	62,298	196,264	3
Zimbabwe	38,667	105,245	3
Liberia	9,632	23,456	2
Zambia	74,072	162,872	2
Botswana	56,673	106,561	2
Ethiopia	110,100	121,554	1
Morocco	44,630	44,966	1
Burundi	2,565	2,263	1
Egypt	99,545	66,280	1
Zaire	226,760	119,750	1
Swaziland	1,720	897	1
Cote d'Ivoire	31,800	10,000	0
Congo	34,150	5,000	0
Malawi	9,408	900	0
Senegal	19,253	1,600	0
Somalia	62,734	5,000	0
Niger	126,670	6,800	0
Mali	122,019	3,700	0
Mauritania	102,522	837	0
Libya	175,954	na	na
Comoros	223	na	na
Sudan	237,600	na	na
Mozambique, People's Rep	78,409	na	na
Algeria	238,174	na	na
Chad	125,920	na	na
Nigeria	91,077	na	na
CapeVerde	403	na	na
Guinea	24,586	na	na
Togo	5,439	na	na
Equatorial Guinea	2,805	na	na
Tunisia	15,536	na	na
Mauritius	185	na	na
Burkina Faso	27,380	na	na

U.S. Biodiversity Investments per 1000 Hectares, 1989

	Land Area (000 ha)	1989 Funding ($US)	Dollars per 1,000 ha
AFRICA (cont'd)			
Guinea-Bissau	2,812	na	na
Benin	11,062	na	na
Djibouti	2,318	na	na
Ghana	23,002	na	na
Lesotho	3,035	na	na
Angola	124,670	na	na
Various Africa		1,731,688	
CENTRAL AMERICA & CARIBBEAN	23,004	18,903,995	822
Costa Rica	5,106	6,214,697	1217
Jamaica	1,083	1,141,076	1054
Belize	2,280	1,199,342	526
Haiti	2,756	686,904	249
Trinidad and Tobago	513	104,620	204
Panama	7,599	951,785	125
Guatemala	10,843	1,240,995	114
Honduras	11,189	420,076	38
Mexico	190,869	5,528,809	29
Dominican Rep	4,838	66,407	14
El Salvador	2,072	5,000	2
Nicaragua	11,875	9,438	1
Barbados	43	na	0
Cuba	11,086	na	0
Various Caribbean		827,606	
Various Central America		507,040	
SOUTH AMERICA	1,753,473	19,393,960	11
Ecuador	27,694	3,257,943	118
Paraguay	39,730	783,934	20
Peru	128,000	1,923,445	15
Colombia	103,870	1,450,650	14
Venezuela	88,205	791,102	9
Brazil	845,651	5,483,535	6
Suriname	16,147	59,993	4
Chile	74,880	222,111	3
Argentina	273,669	795,712	3
Bolivia	108,439	270,900	2
Uruguay	17,481	17,130	1
Guyana	19,685	na	0
Various South America		4,337,505	
OTHER LATIN AMERCA		4,165,030	

U.S. Biodiversity Investments per 1000 Hectares, 1989

	Land Area (000 ha)	1989 Funding ($US)	Dollars per 1,000 ha
ASIA	2,378,402	5,735,464	2
Bhutan	4,700	249,888	53
Nepal	13,680	375,959	27
Thailand	51,089	699,449	14
Malaysia	32,855	448,846	14
Philippines	29,817	363,068	12
Indonesia	181,157	1,394,244	8
Sri Lanka	6,474	37,800	6
Jordan	8,893	50,000	6
Yemen Arab Rep	19,500	55,000	3
India	297,319	649,754	2
Bangladesh	13,391	15,000	1
Pakistan	77,088	65,077	1
China	932,641	666,278	1
Turkey	76,963	30,000	0
Viet Nam	32,536	5,500	0
Myanmar	65,754	10,151	0
Lebanon	1,023	na	0
Kampuchea, Dem	17,652	na	0
Mongolia	156,500	na	0
Iraq	43,737	na	0
Lao People's Dem Rep	23,080	na	0
Iran, Islamic Rep	163,600	na	0
Korea, Dem People's Rep	12,041	na	0
Afghanistan	65,209	na	0
Yemen, People's Dem Rep	33,297	na	0
Syrian Arab Rep	18,406	na	0
Various Asia		619,450	
OCEANIA	49,867	763,497	na
Fiji	1,827	116,640	64
Papua New Guinea	45,286	68,950	2
Solomon Islands	2,754	0	0
Various		577,907	
GLOBAL		3,548,995	

Source: FAO (land areas); Biodiversity Projects Database, World Resources Institute (funding amounts).

Notes: "na" indicates no U.S. funding was reported for that country alone. Countries with this designation may have received project funding under regional projects.

APPENDIX III

1989 Biological Diversity Research and Conservation Activities and Implementors by Region and Country

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR

AFRICA

BOTSWANA

RISK-SENSITIVITY, SAMPLING BEHAV., AND SEASONAL ABSCONDING IN THE AFR. HONEYBEE	UNIVERSITY OF NORTH CAROLINA - CHARLOTTE
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
WWF-US SUPPORT FOR NATURAL RESOURCE CONSERVATION TRUST OF BOTSWANA	NATURAL RESOURCE CONSERVATION TRUST (NRCT)
PILOT PROJECT DEVELOPMENT FOR WILDLIFE MGMT. AREAS, BOTSWANA	WORLD WILDLIFE FUND

BURUNDI

AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
MONITORING OF PEACE CORPS/BURUNDI BIOLOGICAL DIVERSITY PROJECT	PEACE CORPS

CAMEROON

EXPLORATION, CAMEROUN	MISSOURI BOTANICAL GARDEN
SOUTHWESTERN CAMEROUN STUDY	MISSOURI BOTANICAL GARDEN
ETHNOBOTANY STUDY -- KORUP NATIONAL PARK, CAMEROUN	MISSOURI BOTANICAL GARDEN
EVOLUTION OF BILL SIZE POLYMORPHISM IN THE AFRICAN FINCH PYRENESTES	UNIVERSITY OF CALIFORNIA - BERKELEY
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
STATUS OF ELEPHANTS, SANTCHOU RESERVE	WILDLIFE CONSERVATION INTERNATIONAL
KORUP FOREST PROJECT	WILDLIFE CONSERVATION INTERNATIONAL
BLACK RHINO STATUS	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION OF MOUNT OKU MONTANE FORESTS, CAMEROON	CAMEROON MONTANE FOREST PROJECT AND WWF-US
MANATEE STUDIES, KORUP NATIONAL PARK, CAMEROON	YALE UNIVERSITY AND WWF-US

CENTRAL AFRICAN REPUBLIC

LOWLAND GORILLAS	MISSOURI BOTANICAL GARDEN
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
THE DZANGA-SANGHA DENSE FOREST RESERVE PROJECT	PEACE CORPS
ECOLOGY OF LOWLAND GORILLAS	WILDLIFE CONSERVATION INTERNATIONAL

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
TROPICAL FOREST CONSERVATION & DEVELOPMENT, SOUTHWEST CENTRAL AF. REP.	WORLD WILDLIFE FUND
CONGO	
WILDLIFE & FISH SURVEY, LAKE TELLE, CONGO	WOODS HOLE OCEANOGRAPHIC INSTITUTE AND WWF-US
EGYPT	
FLORA AND FAUNAL SURVEYS	US FISH AND WILDLIFE SERVICE
MEDITERRANEAN BASIN CONSERVATION SURVEY	US FISH AND WILDLIFE SERVICE
SINAI NATURAL RESOURCES PUBLICATION	US FISH AND WILDLIFE SERVICE
WILDLIFE FIELD STUDIES	US FISH AND WILDLIFE SERVICE
ETHIOPIA	
GOVERNMENT ADVISOR IN WILDLIFE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
SIMIEN FOX CONSERVATION & ECOLOGY	WILDLIFE CONSERVATION INTERNATIONAL
WWF-US SUPPORT FOR THE ETHIOPIAN WILDLIFE & NATURAL HISTORY SOCIETY	ETHIOPIAN WILDLIFE AND NATURAL HISTORY SOCIETY
ETHIOPIAN TO INTERNATIONAL SEMINAR ON NATIONAL PARKS IN ARID LANDS	MR. B.E. MAREGESI AND WWF-US
GABON	
HABITAT DISTURBANCE ANALYSIS	WILDLIFE CONSERVATION INTERNATIONAL
IMPACT OF LOGGING, LOPE RESERVE	WILDLIFE CONSERVATION INTERNATIONAL
RAIN FOREST UTILIZATION & GORILLAS/CHIMPS, LOPE RES., GABON	STATION D'ETUDE DES GORILLAS ET CHIMPANZEES (SEGC) AND WWF-US
CONSERVATION & PROTECTED AREA DEVELOPMENT, NORTHEAST GABON	WORLDWIDE FUND FOR NATURE
WWF-US SUPPORT TO WILDLIFE DEPARTMENT, LOPE RESERVE, GABON	GABON WILDLIFE DEPARTMENT
GAMBIA	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
IVORY COAST	
MANATEES & COASTAL CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
KENYA	
SERENGETI ECOSYSTEM PROCESSES: WATER OR NITROGEN CONTROL?	SYRACUSE UNIVERSITY

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
RESOURCE DISTRIBUTION AND POPULATION MONITORING	UNIVERSITY OF CALIFORNIA - SAN DIEGO
SYSTEMATICS AND EVOLUTIONARY TEMPO AND MODE IN AFRICAN BOVIDAE	YALE UNIVERSITY
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
NAIROBI NATIONAL PARK IMPROVEMENTS	WILDLIFE CONSERVATION INTERNATIONAL, GOVERNMENT OF KENYA
CAPITAL IMPROVEMENTS FOR AMBOSELI NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
ZOOLOGICAL MONITORING IN AMBOSELI NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
NAIROBI NATIONAL PARK TRAINING & MONITORING	WILDLIFE CONSERVATION INTERNATIONAL
BLACK RHINO TRANSLOCATION STUDIES, LAKE NAKURU NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
WILDLIFE CLUBS OF KENYA GENERAL SUPPORT	WILDLIFE CONSERVATION INTERNATIONAL
TOURIST IMPACT ON WILDLIFE, MASAI MARA	WILDLIFE CONSERVATION INTERNATIONAL
TANA RIVER PRIMATE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
ECOLOGY AND CONSERVATION OF LAKE NAIVASHA	UNIVERSITY OF LEICESTER (ENGLAND)
SUPPORT FOR WILDLIFE CLUBS OF KENYA	AFRICAN WILDLIFE FOUNDATION
SUPPORT FOR UVUMBUZI CLUB, KENYA	AFRICAN WILDLIFE FOUNDATION
KENYA ADULT EDUCATION	AFRICAN WILDLIFE FOUNDATION
TSAVO COMMUNITY EDUCATION PROJECT	AFRICAN WILDLIFE FOUNDATION
AMBOSELI ELEPHANT RESEARCH PROJECT	AFRICAN WILDLIFE FOUNDATION
ATTRACTING ELEPHANTS INTO PARKS USING SOUND	AFRICAN WILDLIFE FOUNDATION
KENYA RHINO CONSERVATION	AFRICAN WILDLIFE FOUNDATION
TSAVO PARK I	AFRICAN WILDLIFE FOUNDATION
TSAVO PARK II	AFRICAN WILDLIFE FOUNDATION
NAIROBI OFFICE	AFRICAN WILDLIFE FOUNDATION
VETERINARIAN FOR KENYA WILDLIFE SERVICE	AFRICAN WILDLIFE FOUNDATION
SUPPORT FOR KENYAN WILDLIFE SERVICE	AFRICAN WILDLIFE FOUNDATION
KENYA WILDLIFE CONSERVATION AND MANAGEMENT DEPARTMENT ELEPHANT ORPHANAGE	AFRICAN WILDLIFE FOUNDATION
USAID AND PVO CO-FINANCING FOR NATURAL RESOURCES AND WILDLIFE PROJECTS	VARIOUS NON GOVERNMENTAL ORGANIZATIONS
RHINO PROJECT, NAKURU NATIONAL PARK, KENYA	WORLD WILDLIFE FUND
NGARE SERGOI RHINO SANCTUARY EXTENSION, KENYA	WORLD WILDLIFE FUND
TANA RIVER FLOODPLAIN VEGETATION STRUCTURE & FUNCTION, KENYA	KENYATTA UNIVERSITY AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
ABERDARE NATIONAL PARK RHINO SANCTUARY ESTABLISHMENT, KENYA	KENYA WILDLIFE CONSERVATION AND MANAGEMENT DEPT. AND WWF-US
MASAI MARA NATIONAL RESERVE ECOLOGICAL MONITORING, KENYA	WORLD WILDLIFE FUND
WWF-US SUPPORT FOR KENYAN WILDLIFE CONSERVATION & MANAGEMENT DEPT.	WILDLIFE CONSERVATION AND MGMT. DEPT., MIN. OF TOURISM AND WILDLIFE
LIBERIA	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
SUPPORT FOR PARKS/WILDLIFE/ENVIRONMENTAL EDUCATION	PEACE CORPS
LARGE-MAMMAL SURVEY IN GOLA FOREST	PEACE CORPS
TIMING OF BREEDING ON BIRDS OF FOREST UNDERGROWTH IN LIBERIA	MUSEUM OF NATURAL SCIENCE, LOUISIANA STATE U.
WWF-US SOCIETY FOR CONSERVATION OF NATURE SUPPORT, LIBERIA	SOCIETY FOR THE CONSERVATION OF NATURE, LIBERIA (SCNL)
MADAGASCAR	
SYSTEMATICS OF ADANSONIA	MISSOURI BOTANICAL GARDEN
PALM PROJECT, MADAGASCAR	MISSOURI BOTANICAL GARDEN
STUDY OF GLADIOLUS	MISSOURI BOTANICAL GARDEN
STUDY OF CYNANCHINAE, MADAGASCAR	MISSOURI BOTANICAL GARDEN
STUDY OF ARALIACEAE, MADAGASCAR	MISSOURI BOTANICAL GARDEN
RURAL DEVELOPMENT, MASOLA PENINSULA	MISSOURI BOTANICAL GARDEN
BOTANICAL INVENTORY OF MAROJEJY RESERVE, MADAGASCAR	MISSOURI BOTANICAL GARDEN
MAROJEJY MASSIF PROJECT, MADAGASCAR	MISSOURI BOTANICAL GARDEN
BOTANICAL EXPLORATION, MADAGASCAR	MISSOURI BOTANICAL GARDEN
ANJOZOROBE FOREST STUDY, MADAGASCAR	MISSOURI BOTANICAL GARDEN
PARC DE TSIMBAZAZA PROJECT, MADAGASCAR	MISSOURI BOTANICAL GARDEN
FLORISTIC INVENTORY, MANGABE, MADAGASCAR	MISSOURI BOTANICAL GARDEN
MADAGASCAR PROJECT	MISSOURI BOTANICAL GARDEN
HUMAN SETTLEMENT, ENVIRONMENTAL CHANGE, AND MEGAFAUNAL EXTINCTION	UNIVERSITY OF CONNECTICUT
MAN AND THE MALAGASY RAIN FOREST: CONSERVATION/SUSTAINED DEVELOPMENT PROJECT	DUKE UNIVERSITY
AMBER MOUNTAIN CONSERVATION & DEVELOPMENT	WORLD WILDLIFE FUND - MADAGASCAR
RANOMAFANA NATIONAL PARK	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
DEBT-FOR-NATURE-SWAP	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
CONSERVATION DATA CENTER	WORLD WILDLIFE FUND-US
BEZA MAHAFALY TROPICAL FOREST	WORLD WILDLIFE FUND

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
CONSERVATION PROGRAM FOR SOUTHERN MADAGASCAR	YALE UNIVERSITY, WASHINGTON UNIVERSITY, AND WWF-US
MADAGASCAN TORTOISE RECOVERY PROGRAM	JERSEY WILDLIFE PRESERVATION TRUST AND WWF-US
SELECTIVE LOGGING IMPACT ON PRIMATES & TENRECS, MADAGASCAR	WORLD WILDLIFE FUND
SURVEY OF TWO CARNIVORES, SW SPINY DESERT, MADAGASCAR	SMITHSONIAN INSTITUTION AND WWF-US
CONSERVATION OF TWO ENDEMIC BIRDS, MADAGASCAR	WWF AIRES PROTEGEES
ESTABLISHMENT OF RANOMAFANA NATIONAL PARK, MADAGASCAR	DUKE UNIVERSITY AND WWF-US
CONSERVATION STATUS OF THE GOLDEN CROWNED SIFAKA, MADAGASCAR	DUKE UNIVERSITY AND WWF-US
ETHNOBOTANICAL STUDY, MANONGARIVO & TSARATANANA RESERVE, MADAGASCAR	MADAGASCAR ENVIRONMENTAL RESEARCH GROUP AND WWF-US
TRAINING OF MALAGASY ETHNOBOTANISTS, MADAGASCAR	MADAGASCAR ENVIRONMENTAL RESEARCH GROUP AND WWF-US
MALAGASY RODENT (HYPOGEOMYS ANTIMENA) SURVEY, MADAGASCAR	IMPERIAL COLLEGE AND WWF-US
THREATENED SPECIES INVENTORY, MAROJEJY RESERVE, MADAGASCAR	ST. CATHARINE'S COLLEGE AND WWF-US
PRODUCTION OF BROCHURE ON THE PALMS OF MADAGASCAR	PARC TSIMBAZAZA AND WWF-US
AQUATIC TENREC STATUS, MADAGASCAR	WORLDWIDE FUND FOR NATURE AND WORLD WILDLIFE FUND-US
FOREST DESTRUCTION IN MADAGASCAR: FRENCH LITERATURE REVIEW	YALE UNIVERSITY AND WWF-US
SURVEY OF CHEIROGALID PRIMATES, MADAGASCAR	DUKE UNIVERSITY PRIMATE CENTER AND WWF-US
■ MALAWI	
PARKS/WILDLIFE/ENVIRONMENTAL EDUCATION	PEACE CORPS
■ MALI	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
■ MAURITANIA	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
■ MOROCCO	
PURCHASE OF FIELD GUIDE	PEACE CORPS
INTEGRATED PARKS/WILDLIFE/ENVIRON. EDUC. AND AGRI. IN-SERVICE TRAINING WORKSHOP	PEACE CORPS
TECHNICAL ASSISTANCE TO PEACE CORPS BIODIVERSITY PROGRAM IN MOROCCO	U.S. FISH AND WILDLIFE SERVICE

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
NIGER	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
RWANDA	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
NYUNGWE FOREST PROJECT	WILDLIFE CONSERVATION INTERNATIONAL
ANIMAL SEED DISPERSERS AS KEY ELEMENTS FOR CONSERV. OF TROP. FOREST, NYUNGWE	WILDLIFE CONSERVATION INTERNATIONAL
USAID SUPPORT TO PVOS TO MANAGE TROPICAL FORESTS AND NATIONAL PARKS	AFRICAN WILDLIFE FOUNDATION, WILDLIFE CONSERVATION INTERNATIONAL, OTHERS
MOUNTAIN GORILLA PROJECT, RWANDA: EDUCATION & EXTENSION PROGRAM	AFRICAN WILDLIFE FOUNDATION AND WWF-US
SENEGAL	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
SEYCHELLES	
SYSTEMATICS OF SEYCHELLEAN CAECILIANS	UNIVERSITY OF MICHIGAN - ANN ARBOR
SCIENTIFIC INVESTIGATIONS OF ALDABRA ATOLL AND ENVIRONS	SMITHSONIAN INSTITUTION - NATIONAL MUSEUM OF NATURAL HISTORY
SIERRA LEONE	
TRAINING FOR PARKS/WILDLIFE/ENVIRONMENTAL EDUCATION	PEACE CORPS
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
MATERIALS FOR TIWAI ISLAND AND OUTAMBA - KILIMI NATIONAL PARKS	PEACE CORPS
PRIMATE CONSERVATION & EDUCATION, TIWAI ISLAND	WILDLIFE CONSERVATION INTERNATIONAL
ESTABLISHMENT OF OUTAMBA KILIMI NATIONAL PARK, SIERRA LEONE	U.S. PEACE CORPS, CONSERVATION SOCIETY OF SIERRA LEONE
SOMALIA	
SOMALI WILD ASS CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
SWAZILAND	
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
TANZANIA	

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
RESEARCH ACTIVITIES IN TANZANIA	MISSOURI BOTANICAL GARDEN
STUDY OF KANGA MOUNTAIN, TANZANIA	MISSOURI BOTANICAL GARDEN
SERENGETI ECOSYSTEM PROCESSES: WATER OR NITROGEN CONTROL?	SYRACUSE UNIVERSITY
LONG TERM STUDIES OF AFRICAN LIONS	UNIVERSITY OF MINNESOTA - ST. PAUL
MECH. & EVOLUTN. OF REPRODUCTIVE PHENOMENA IN A COOPERATIVELY - BREEDING MAMMAL	PURDUE RESEARCH FUND
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
JACKAL ECOLOGY & TANZANIAN CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION STATUS OF FOREST BIRDS IN THE UZUNGWA MOUNTAINS	WILDLIFE CONSERVATION INTERNATIONAL
CONTROL OF DISEASE SPREAD BETWEEN WILD & DOMESTIC RUMINANTS	WILDLIFE CONSERVATION INTERNATIONAL
GRADUATE TRAINING IN CONSERVATION BIOLOGY	WILDLIFE CONSERVATION INTERNATIONAL
MONITORING & CONSERVATION OF RUAHA NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
LAKE MANYARA N.P. EXPANSION & MONITORING	WILDLIFE CONSERVATION INTERNATIONAL
TARANGIRE N.P. CONSERVATION & MONITORING	WILDLIFE CONSERVATION INTERNATIONAL
NOYES FOUNDATION FELLOWSHIPS	WILDLIFE CONSERVATION INTERNATIONAL
NGORONGORO CRATER MONITORING & TRAINING	WILDLIFE CONSERVATION INTERNATIONAL
ASPECTS OF THE ECOLOGY OF THE ORIBI	WILDLIFE CONSERVATION INTERNATIONAL
SUPPORT FOR MWEKA COLLEGE OF WILDLIFE MANAGEMENT	AFRICAN WILDLIFE FOUNDATION
TRAINING IN COMMUNITY CONSERVATION, TANZANIA	AFRICAN WILDLIFE FOUNDATION
TARANGIRE NATIONAL PARK, TANZANIA	AFRICAN WILDLIFE FOUNDATION
SELOUS GAME RESERVE	AFRICAN WILDLIFE FOUNDATION
SERENGETI PROJECT	AFRICAN WILDLIFE FOUNDATION
GOMBE	AFRICAN WILDLIFE FOUNDATION
ELEPHANT & RHINO CONSERVATION, SELOUS GAME RESERVE, TANZANIA	WORLD WILDLIFE FUND EAST AFRICA REGIONAL OFFICE
SERENGETI ECOLOGICAL MONITORING & TRAINING PROJECT,TANZANIA	FRANKFURT ZOOLOGICAL SOCIETY AND WWF/I
WWF-US ANTI-POACHING AID TO TANZANIA WILDLIFE DEPARTMENT	WILDLIFE DEPT., TANZANIA MINISTRY OF NATURAL RESOURCES AND TOURISM
■ UGANDA	
ECOLOGY & BEHAVIOR OF CHIMPANZEES	WILDLIFE CONSERVATION INTERNATIONAL

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
NOYES FOUNDATION FELLOWSHIPS	WILDLIFE CONSERVATION INTERNATIONAL
RWENZORI FOREST NATIONAL PARK	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
DEVELOPMENT AND CONSERVATION IN THE KIBALI FOREST	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION OF IMPENETRABLE FOREST, UGANDA	IMPENETRABLE FOREST CONSERVATION PROJECT AND WWF-US
DEVELOPMENT THROUGH CONSERVATION PROJECT, UGANDA	CARE
■ VARIOUS	
SYSTEMATICS OF LAPEIROUSIA	MISSOURI BOTANICAL GARDEN
SYSTEMATICS STUDIES IN IRIDACEAE	MISSOURI BOTANICAL GARDEN
SYSTEMATICS OF GLADIOLUS	MISSOURI BOTANICAL GARDEN
INVENTORY OF RAINFOREST MOSSES, AFRICA	MISSOURI BOTANICAL GARDEN
MOSSES OF SOUTHERN AFRICA	MISSOURI BOTANICAL GARDEN
EVOLUTION OF PLANT BREEDING SYSTEMS	BRIGHAM YOUNG UNIVERSITY
SCREENING OF TROPICAL PLANTS FOR ANTICANCER AND ANTI-HIV ACTIVITY - AFRICA	MISSOURI BOTANICAL GARDEN
AFRICA REGION ENVIRONMENTAL EDUCATION WORKSHOP	PEACE CORPS
REPRINTING OF AFRICAN WILDLIFE MANAGEMENT BOOK	PEACE CORPS
IVORY ECONOMICS & TRADE ANALYSIS	WILDLIFE CONSERVATION INTERNATIONAL
AFRICAN ELEPHANT ACTION PLAN	WILDLIFE CONSERVATION INTERNATIONAL
SUPPORT FOR AFRICAN ELEPHANT & RHINO SPECIALIST GROUP (IUCN)	WILDLIFE CONSERVATION INTERNATIONAL
AFRICAN ELEPHANT IVORY GENETICS/"FINGERPRINTING" TECHNIQUE	WILDLIFE CONSERVATION INTERNATIONAL
FOREST ELEPHANT, IVORY TRADE ANALYSIS	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION ENDEAVOR	AFRICAN WILDLIFE FOUNDATION
WILDLIVES BOOK	AFRICAN WILDLIFE FOUNDATION
HOLDEN GUIDEBOOKS	AFRICAN WILDLIFE FOUNDATION
INTERNATIONAL GORILLA CONSERVATION	AFRICAN WILDLIFE FOUNDATION
UNEP CONSULTANCY FOR ELEPHANT SURVEY	AFRICAN WILDLIFE FOUNDATION
CITES/OLINDO	AFRICAN WILDLIFE FOUNDATION
PARK MAINTENANCE	AFRICAN WILDLIFE FOUNDATION
PLANNING AND ASSESSMENT FOR WILDLIFE MANAGEMENT	AFRICAN WILDLIFE FOUNDATION
IUCN/REINTRODUCTION SPECIALIST GROUP	AFRICAN WILDLIFE FOUNDATION
ELEPHANT/IVORY INFORMATION SERVICE	AFRICAN WILDLIFE FOUNDATION

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
LOST CROPS OF AFRICA	NATIONAL ACADEMY OF SCIENCES
LOW IMPACT TOURISM FOR SUSTAINING NATURAL RESOURCE CONSERVATION	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
SUPPORT FOR WORLD WILDLIFE FUND EAST AFRICA FIELD OFFICE	WORLD WILDLIFE FUND
PAN AFRICAN ORNITHOLOGICAL CONGRESS FELLOWSHIPS, NAIROBI	INTERNATIONAL COUNCIL FOR BIRD PRESERVATION AND WWF-US
WWF-US GRANT FUND FOR LOCAL CONSERVATION ENDEAVORS, EAST AFRICA	WORLD WILDLIFE FUND
EAST AFRICAN INTERNSHIP PROGRAM	WORLDWIDE FUND FOR NATURE
ELEPHANT IVORY TRADE STUDIES	WORLDWIDE FUND FOR NATURE
COMPUTER EQUIPMENT FOR AFRICAN ELEPHANT DATABASE	WORLD WILDLIFE FUND
ELEPHANT & RHINO GROUP WEST AND CENTRAL AFRICA MEETING SUPPORT, GABON	IUCN-WORLD CONSERVATION UNION/SSC AFRICAN ELEPHANT AND RHINO GROUP
PARTICIPANT TO SMITHSONIAN WILDLIFE CONS. & MGMT. TRAINING PROGRAM	MR. EDWARD G. GBEINTOR AND WWF-US
AFRICAN ELEPHANT WORKING GROUP MEETING, BOTSWANA	WORLD WILDLIFE FUND
FELLOWSHIPS TO 1ST MEETING OF AFRICAN ELEPHANT WORKING GROUP, KENYA	CITES SECRETARIAT AND WWF-US
ACOUSTIC COMMUNICATION IN AFRICAN ELEPHANTS	CORNELL UNIVERSITY AND WWF-US
■ VARIOUS (CAMEROON, KENYA, TANZ., ZAMBIA, ZIMBABWE)	
RHINO RESCUE FUND	WILDLIFE CONSERVATION INTERNATIONAL
■ VARIOUS (CONGO, GABON, ZAIRE)	
CONGO FOREST SURVEYS-REGIONAL NETWORKING & TRAINING	WILDLIFE CONSERVATION INTERNATIONAL
■ VARIOUS (EAST AFRICA)	
EVOLUTION OF SENECIO AND LOBELIA IN EAST AFRICAN MOUNTAINS	UNIVERSITY OF MICHIGAN - ANN ARBOR
■ VARIOUS (RWANDA, UGANDA)	
MOUNTAIN GORILLA PROJECT	AFRICAN WILDLIFE FOUNDATION
MOUNTAIN GORILLA PROJECT/BORDER EDUCATION	AFRICAN WILDLIFE FOUNDATION
■ VARIOUS (UGANDA, KENYA, TANZANIA)	
POOLE ELEPHANT CENSUS	AFRICAN WILDLIFE FOUNDATION
■ VARIOUS (WEST AND CENTRAL AFRICA)	
FOREST ELEPHANT SURVEY	WILDLIFE CONSERVATION INTERNATIONAL

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PROJECT TITLE	PROJECT IMPLEMENTOR
■ ZAIRE	
OKAPI ECOLOGY & BEHAVIOR PARKS PLANNING, ITURI FOREST	WILDLIFE CONSERVATION INTERNATIONAL
WANANDE IMMIGRATION & COLONIZATION ITURI FOREST	WILDLIFE CONSERVATION INTERNATIONAL
RHINO & ECOSYSTEM MONITORING, GARAMBA NATIONAL PARK, ZAIRE	WORLD WILDLIFE FUND
■ ZAMBIA	
ZAMBIA WILDLANDS AND HUMAN NEEDS PROJECT	ZAMBIAN NATIONAL PARKS AND WILDLIFE SERVICE, AND WWF-US
■ ZIMBABWE	
WILDLIFE UTILIZATION STUDY, ZIMBABWE	WORLD WILDLIFE FUND
BLACK RHINO CONSERVATION PROGRAM, ZIMBABWE	RAOUL F. DU TOIT AND WWF-US

ASIA

■ BANGLADESH	
BIOLOGICAL DIVERSITY ASSESSMENT IN BANGLADESH	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
■ BHUTAN	
DEVELOPMENT OF MANAS NATIONAL PARK, BHUTAN	BHUTAN DEPARTMENT OF FORESTRY AND WWF-US
WWF-US SUPPORT FOR DEPARTMENT OF FORESTS, BHUTAN	DEPARTMENT OF FORESTS, BHUTAN
WWF-US SUPPORT FOR ROYAL SOCIETY FOR THE PROTECTION OF NATURE, BHUTAN	ROYAL SOCIETY FOR THE PROTECTION OF NATURE (RSPN)
WWF-US CONSERVATION FELLOWSHIP PROGRAM FOR BHUTAN	DEPARTMENT OF FORESTS, BHUTAN
SURVEY & ASSESSMENT OF PRIORITY SPECIES IN BHUTAN	DEPARTMENT OF FORESTRY, BHUTAN, AND WWF-US
WWF-US SUPPORT FOR SHERUBTSE COLLEGE ECOLOGY CLUB, BHUTAN	SHERUBTSE COLLEGE
■ BURMA	
PROTECTED AREA TECHNICAL ASSISTANCE, BURMA	U.S. NATIONAL PARK SERVICE, BURMA DEPARTMENT OF FORESTS, AND WWF-US
■ CHINA	
FLORA OF CHINA	MISSOURI BOTANICAL GARDEN
MODELS OF SELECTION AND INTERACTION AMONG POPULATIONS	ROCKEFELLER UNIVERSITY

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PROJECT TITLE	PROJECT IMPLEMENTOR
CRANIAL STRUCTURE OF CHINESE LIASSIC MAMMALS AND TRITYLODONTIDS	HARVARD UNIVERSITY
MOLECULAR SYSTEMATICS OF CHICKADEES	ACADEMY OF NATURAL SCIENCE OF PHILADELPHIA
SYSTEMATICS OF ARALIA (ARALIACEAE)	OHIO ST. UNIVERSITY RESEARCH FOUNDATION
FLORA OF CHINA PROJECT	MISSOURI BOTANICAL GARDEN
GIANT PANDA BIOLOGY, REPRODUCTION, AND CONSERVATION	SMITHSONIAN INSTITUTION - NATIONAL ZOO
WILDLIFE SURVEYS & RESERVE PLANNING, TIBET	WILDLIFE CONSERVATION INTERNATIONAL
AUTUMN BIRD MIGRATION AT BEIDAIHE	BEIJING NATURAL HISTORY MUSEUM
STUDY, TRAVEL FOR PARKS AND REFUGES OFFICIALS	US FISH AND WILDLIFE SERVICE
BIRD BANDING SYMPOSIUM	US FISH AND WILDLIFE SERVICE
PARKS AND REFUGES: COMPARISON OF ECOLOGICAL DATA	US FISH AND WILDLIFE SERVICE
CITES ORIENTATION	US FISH AND WILDLIFE SERVICE
CHINA CONSERVATION PROGRAM	WORLD WILD FUND FOR NATURE AND WORLD WILDLIFE FUND-US
CHINESE PRIMATOLOGIST FELLOWSHIP TO MAHIDOL UNIVERSITY, THAILAND	WORLD WILDLIFE FUND
■ INDIA	
COOPERATIVE COLONY FOUNDATION IN DESERT ANTS	ARIZONA STATE UNIVERSITY
DEMOGRAPHIC ADVANTAGES OF EUSOCIALITY	RICE UNIVERSITY
TIGERS AND OTHER CARNIVORES AT NAGARAHOLE NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
LION-TAILED MACAQUE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
MAPPING AND ANIMAL LOCATION DATA ANALYSIS WORKSHOP	US FISH AND WILDLIFE SERVICE
AVIFAUNA DATA BANK AND MIGRATION STUDY	US FISH AND WILDLIFE SERVICE
POINT CALIMERE ECOLOGY STUDY	US FISH AND WILDLIFE SERVICE
INDIAN ELEPHANT ECOLOGY STUDY	US FISH AND WILDLIFE SERVICE
REULADEO NATIONAL PARK ECOLOGY STUDY	US FISH AND WILDLIFE SERVICE
DEVELOPMENT OF WILDLIFE INSTITUTE OF INDIA	US FISH AND WILDLIFE SERVICE
WOLF/BLACKBUCK DYNAMICS STUDY	US FISH AND WILDLIFE SERVICE
PREDATOR/PREY RELATIONSHIPS STUDY, NAGARAHOLE NATIONAL PARK	US FISH AND WILDLIFE SERVICE
CHILDREN'S ENVIRONMENTAL EDUCATION TELEVISION PROJECT	US FISH AND WILDLIFE SERVICE
ENVIRONMENTAL EVALUATION WORKSHOP	U.S. FISH AND WILDLIFE SERVICE
RESTORATION ECOLOGY ANALYSIS	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
SUPPORT FOR RANTHAMBORE TIGER RESERVE, INDIA	RAJ MATA OF JAIPUR AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
LION TAILED MACAQUE STUDY, INDIA: PURCHASE OF VEHICLE	DR. AJITH KUMAR AND WWF-US
HUMAN CONFLICT CASE STUDY, RAJAJI NATIONAL PARK, INDIA	HIMRAJ DANG AND WWF-US
■ INDONESIA	
YEAR FOR BIODIVERSITY PROGRAM SUPPORT & DEVELOPMENT OF MASTER CONSERVATION PLAN	INDONESIAN MINISTRY OF STATE FOR POPULATION AND ENVIRONMENT
TRAINING FOR INDONESIANS AT FIELD RESEARCH STATION IN WEST KALIMANTAN	NEW YORK ZOOLOGICAL SOCIETY
PRODUCTION OF A READER ON BIODIVERSITY FOR STUDENTS AND THE PUBLIC IN INDONESIA	OBOR FOUNDATION
PRESERVATION OF TROPICAL RAINFORESTS IN INDONESIA	PROJECT LIGHTHAWK
CONSERVATION ACTIVITIES IN INDONESIA	WORLD WILDLIFE FUND
TROPICAL ECOLOGY & TRAINING WORKSHOPS, WEST KALIMANTAN, BORNEO	WILDLIFE CONSERVATION INTERNATIONAL
BALI MYNAH REINTRODUCTION	WILDLIFE CONSERVATION INTERNATIONAL
LONG-TERM RESEARCH ON WILD ORANGUTANS AT TANJUNG PUTING NATIONAL PARK	ORANGUTAN RESEARCH AND CONSERV. CTR. (INDONESIA) & SIMON FRASER UNIV. (CANADA)
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT BIODIVERSITY SMALL GRANTS PROGRAM	VARIOUS NON-GOVERNMENTAL ORGANIZATIONS
ECOLOGY, MANAGEMENT AND CONSERVATION OF NATIVE FRUITS IN WEST KALIMANTAN	NEW YORK BOTANICAL GARDEN, UNIVERSITAS TANJUNGPURA, YALE UNIVERSITY
WORKSHOP ON LARGE MAMMAL CONSERVATION	WORLD WILDLIFE FUND-US
LARGE MAMMAL ECOLOGY STUDIES	WORLD WILDLIFE FUND-US
PLANT IDENTIFICATION WORKSHOP	WORLD WILDLIFE FUND-US
ADVISOR TO INDONESIAN DIRECTORATE FOR FOREST PROTECTION AND CONSERVATION	WORLD WILDLIFE FUND-US, WORLD RESOURCES INSTITUTE, THE NATURE CONSERVANCY
SUPPORT FOR INDONESIAN FIELD REPRESENTATIVE	WORLD WIDE FUND FOR NATURE AND WORLD WILDLIFE FUND-US
CONSERVATION PROGRAM FOR INDONESIA	WORLD WIDE FUND FOR NATURE AND WORLD WILDLIFE FUND-US
PAGAI ISLANDS CONSERVATION, INDONESIA	UNIVERSITY OF THE PACIFIC AND WWF-US
IRIAN JAYA RURAL COMMUNITY DEVELOPMENT FOUNDATION SUPPORT, INDONESIA	YPMD AND WWF-US
SURVEY OF TWO ENDANGERED MACAQUES, INDONESIA	YALE UNIVERSITY AND WWF-US
LAND USE & MGMT. IMPROVEMENT, GUNUNG LEUSER NATIONAL PARK, INDONESIA	WWF INDONESIAN OFFICE AND WWF-US
DEVELOPMENT OF RAPID TROPICAL FOREST SITE ASSESSMENT, INDONESIA	WWF INDONESIAN OFFICE AND WWF-US
MANAGEMENT OF KEPULAUAN SERIBU, JAKARTA BAY, JAVA, INDONESIA	WWF INDONESIAN OFFICE AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
ETHNOBOTANY BY FOREST DWELLERS, KALIMANTAN, INDONESIA	WWF INDONESIAN OFFICE AND WWF-US
CONSERVATION OF CELEBES MACAQUE, INDONESIA	UNIVERSITY OF COLORADO AND WWF-US
PLANT ID AND CRITICAL HABITATS FOR JAVAN RHINOS, INDONESIA	WORLD WIDE FUND INDONESIAN OFFICE AND WWF-US
IMPORTANCE OF SULAWESI PIG AS SOURCE OF MEAT, INDONESIA	WORLD WIDE FUND INDONESIAN OFFICE AND WWF-US
CENSUS TECHNIQUES DEVELOPMENT FOR JAVAN RHINO, INDONESIA	WORLD WILDLIFE FUND
■ JORDAN	
HABITAT CONSERVATION IN JORDAN	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
■ MALAYSIA	
DATABASE FOR FLORA OF MT. KINABALU	MICHIGAN STATE UNIVERSITY
BIOLOGY AND SYSTEMATICS OF SOUTHEAST ASIAN VOICELESS FROGS	UNIVERSITY OF UTAH
GENETIC ANALYSIS OF DIMORPHISM IN DIOPSID DIPTERANS	UNIVERSITY OF MARYLAND - COLLEGE PARK
PROBOSCIS MONKEY, WILDLIFE SURVEYS, & LOGGING IMPACT, SARAWAK	WILDLIFE CONSERVATION INTERNATIONAL
PROBOSCIS MONKEY CONSERVATION, SARAWAK	WILDLIFE CONSERVATION INTERNATIONAL
MALAYSIAN SEA TURTLE CONSERVATION	UNIVERSITY OF FLORIDA AND WWF-US
CONFERENCE ON CONSERVATION & DEVELOPMENT IN BORNEO, MALAYSIA	WORLD WILDLIFE FUND
■ NEPAL	
A SURVEY OF SMALL CARNIVORES	UNIVERSITY OF MINNESOTA
ANNAPURNA AREA CONSERVATION PROGRAM	KING MAHENDRA TRUST FOR NATURE'S CONSERVATION
WOODLANDS INSTITUTE CONSERVATION FOR THE HEART OF THE HIMALAYAS PROGRAM	NEPAL CONSERVATION TRAINING AND RESEARCH INSTITUTE
NEPAL PROGRAM - ANAPURNA AND CHITWAN	WORLD WILDLIFE FUND-US
ANNAPURNA CONSERVATION AREA PROJECT, NEPAL	KING MAHENDRA TRUST FOR NATURE CONSERVATION AND WWF-US
HIMALAYAN RED PANDA PROJECT, NEPAL	WORLD WILDLIFE FUND
PARK PEOPLE INTERACTION STUDY, CHITWAN NATIONAL PARK, NEPAL	ROYAL CHITWAN NATIONAL PARK AND WWF-US
MUSK DEER STUDY, NEPAL	WORLD WILDLIFE FUND
WWF-US SUPPORT FOR HIMAL ASSOCIATES, NEPAL	HIMAL ASSOCIATES
SAURAHA/CHITWAN COMMUNITY FORESTRY PROJECT, NEPAL	KING MAHENDRA TRUST FOR NATURE CONSERVATION AND WWF-US
ROYAL CHITWAN NATIONAL PARK HANDBOOK, NEPAL	DEPT. OF NATIONAL PARKS AND WILDLIFE CONSERVATION AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
CONSERVATION OF RHINOS IN NEPAL	WORLD WILDLIFE FUND
■ PAKISTAN	
STUDY OF VASCULAR PLANTS, PAKISTAN	MISSOURI BOTANICAL GARDEN
TRAINING OF TWO PAKISTANI HERPETOLOGISTS	US FISH AND WILDLIFE SERVICE
TROGOPON HABITAT CONSERVATION	INTERNATIONAL COUNCIL FOR BIRD PRESERVATION
WWF-US INSTITUTIONAL SUPPORT FOR WWF PAKISTAN	WWF PAKISTAN
■ PHILIPPINES	
DEBT-FOR-NATURE SWAP CONSERVATION PROGRAMS IN PHILIPPINES	WORLD WILDLIFE FUND
SEEDS OF HOPE - INDIGENOUS VARIETIES SEED BANKS	INTERNATIONAL INSTITUTE OF RURAL RECONSTRUCTION
MARINE/COASTAL BIODIVERSITY ASSESSMENT- STUDY OF DESTRUCTIVE FISHING METHODS	UNIVERSITY OF RHODE ISLAND, UNIVERSITY OF THE PHILIPPINES
WWF-US SUPPORT FOR THE HARIBON FOUNDATION	THE HARIBON FOUNDATION
IMPLEMENTATION OF CONSERVATION STRATEGY IN PHILIPPINES	THE HARIBON FOUNDATION AND WWF-US
PUBLIC EDUCATION & AWARENESS CAMPAIGN FOR THE ENVIRONMENT, PHILIPPINES	WORLD WILDLIFE FUND
■ SRI LANKA	
BIODIVERSITY ASSESSMENT FOR COUNTRY PROFILE	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
TRAINING PROGRAM FOR SRI LANKANS	U.S. NATIONAL PARK SERVICE AND WWF-US
FIELD GUIDE TO COMMON TREES & SHRUBS, SRI LANKA	YALE UNIVERSITY AND WWF-US
WWF-US SUPPORT FOR THE MARCH FOR CONSERVATION, SRI LANKA	MARCH FOR CONSERVATION
■ THAILAND	
TRAINING FOR PARKS/WILDLIFE/ENVIRONMENTAL EDUCATION	PEACE CORPS
CARNIVORE ECOLOGY, HUAI KHA KHAENG SANCTUARY	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION TRAINING & COORDINATION	WILDLIFE CONSERVATION INTERNATIONAL
RESEARCH & TRAINING IN CONSERVATION BIOLOGY	WILDLIFE CONSERVATION INTERNATIONAL
NOYES FOUNDATION FELLOWSHIPS	WILDLIFE CONSERVATION INTERNATIONAL
ECOLOGY OF HORNBILLS IN CENTRAL THAILAND, KHAO YAI NATIONAL PARK	MAHIDOL UNIVERSITY (THAILAND), MEIJO UNIVERSITY, NAGOYA (JAPAN)
USAID/ANE BUY-IN TO COOPERATIVE AGREEMENT FOR THE CONSERVATION OF BIODIVERSITY	WORLD WILDLIFE FUND-US, WORLD RESOURCES INSTITUTE, THE NATURE CONSERVANCY

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PROJECT TITLE	PROJECT IMPLEMENTOR
RECOVERY PROGRAM FOR ELD'S DEER	WORLD WILDLIFE FUND-US
WWF-US SUPPORT FOR WILDLIFE FUND THAILAND	WILDLIFE FUND THAILAND
HUAI KHA KHAENG SANCTUARIES SOCIOECONOMIC STUDY, THAILAND	WILDLIFE FUND THAILAND AND WWF-US
WWF-US SUPPORT FOR WILDLIFE FUND THAILAND	WILDLIFE FUND THAILAND
ETHNOBOTANY & CONSERVATION OF HILL TRIBES, N. THAILAND	WHITMAN COLLEGE AND WWF-US
SEA TURTLE CONSERVATION, THAILAND	WORLD WILDLIFE FUND
SALT LICK EXPLOITATION, HUAI KHA KHAENG SANCTUARY, THAILAND	WORLD WILDLIFE FUND
FLORA OF THAILAND PUBLICATION	WORLD WILDLIFE FUND
■ TURKEY	
U.S FISH & WILDLIFE SERVICE AND USAID SUPPORT FOR BIODIVERSITY UNIT	ENVIRONMENTAL PROBLEMS FOUNDATION OF TURKEY
■ VARIOUS	
MOLECULAR SYSTEMATICS OF CHICKADEES	ACADEMY OF NATURAL SCIENCE OF PHILADELPHIA
SCREENING OF TROPICAL PLANTS FOR ANTICANCER AND ANTI-HIV ACTIVITY - ASIA	UNIVERSITY OF ILLINOIS -- CHICAGO
POPULATION BIOLOGY AND GENETICS OF THE ASIAN ELEPHANT	SMITHSONIAN INSTITUTION
PLANNING LONG-TERM RESEARCH SITES IN ASIA	HARVARD INSTITUTE FOR INTERNATIONAL DEVELOPMENT
REGIONAL TRAINING SOUTHEAST ASIA	WILDLIFE CONSERVATION INTERNATIONAL
TRAINING/REFERENCE MATERIALS	US FISH AND WILDLIFE SERVICE
RESTORATION ECOLOGY STUDIES	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
TRAINING AND FELLOWSHIPS	WORLD WILDLIFE FUND-US
PROGRAM SUPPORT FOR COOPERATIVE AGREEMENT WITH USAID/ANE	WORLD WILDLIFE FUND-US
SMALL GRANTS PROGRAM GENERAL FUND	U.S. FISH AND WILDLIFE SERVICE
GENERAL TECHNICAL ASSISTANCE TO USAID MISSIONS IN ASIA AND THE NEAR EAST	U.S. FISH AND WILDLIFE SERVICE
NARTHANG PROJECT, ASIA	KATHLEEN DYHR
MONITORING THE ORIENTAL MEDICINAL TRADE, ASIA	JAY SORDEAN AND WWF-US
WWF-US ASIAN FELLOWSHIP PROGRAM	VARIOUS
RAINFOREST CANOPY WALKWAY DEVELOPMENT, CHINA & MALAYSIA	INTEGRATED CONSERVATION RESEARCH AND WWF-US
CONFERENCE OF ASIAN CONSERVATION ORGANIZATIONS, BANGKOK, THAILAND	WORLD WILDLIFE FUND
WWF-US SUPPORT FOR ASIAN FORUM OF ENVIRONMENTAL JOURNALISTS	ASIAN FORUM OF ENVIRONMENTAL JOURNALISTS (AFEJ)

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PROJECT TITLE	PROJECT IMPLEMENTOR
ASSESSMENT OF CONSERVATION TRAINING NEEDS FOR ASIA	WORLD WILDLIFE FUND
ASIAN ECOSYSTEM & HABITAT PRESERVATION PROGRAM	WORLD WILDLIFE FUND
BUDDHIST PERCEPTION OF NATURE, ASIA	NANCY NASH, TIBETAN AND THAI SCHOLARS, AND WWF-US
■ VARIOUS (MALAYSIA, INDONESIA)	
MOTHS OF BORNEO	BISHOP MUSEUM
■ VIET NAM	
WILDLIFE SURVEYS & CONSERVATION ASSISTANCE	WILDLIFE CONSERVATION INTERNATIONAL
STATUS OF PRIMATES, VIETNAM	UNIVERSITY OF HANOI AND WWF-US
■ YEMEN	
YEMEN BIOLOGICAL DIVERSITY ASSESSMENT	U.S. FISH AND WILDLIFE SERVICE, INTERNATIONAL COUNCIL FOR BIRD PRESERVATION

CARIBBEAN

■ BRITISH VIRGIN ISLANDS	
BOTANIC GARDENS PROJECT, BRITISH VIRGIN ISLANDS	BRITISH VIRGIN ISLANDS NATIONAL PARKS TRUST AND WWF-US
■ DOMINICA	
DOMINICA WORKSHOP	NATIONAL PARK SERVICE
■ DOMINICAN REPUBLIC	
EBANO VERDE SCIENTIFIC RESERVE	PROGRESSIO, THE NATURE CONSERVANCY
ENVIRONMENTAL EDUCATION TRAINING FOR TEACHERS, NE DOMINICAN REPUBLIC	PARQUE ZOOLOGICO NACIONAL (ZOODOM) AND WWF-US
HUMPBACK WHALE RESEARCH, DOMINICAN REPUBLIC	CENTER FOR COASTAL STUDIES AND WWF-US
WWF-US SUPPORT FOR ENVIRONMENTAL EDUCATION GRADUATE PROGRAM	INST. TECNOLOGICO DE SANTO DOMINGO
UNIV. PROFESSORS ENV. EDUC. TRAINING WORKSHOP, D. REPUBLIC	LIC. FELICITA HEREDIA L. AND WWF-US
CONSERVING BIOLOGICAL DIVERSITY IN THE DOMINICAN REPUBLIC	DPTO. DE VIDA SILVESTRE AND WWF-US
■ HAITI	
CONSERVATION STATUS OF HAITIAN PALMS	NEW YORK BOTANICAL GARDEN

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PROJECT TITLE	PROJECT IMPLEMENTOR
USAID AGROFORESTRY OUTREACH PROJECT	INTERNATIONAL RESOURCES GROUP
TARGETED WATERSHED MANAGEMENT - PIC MACAYA NATIONAL PARK	UNIVERSITY OF FLORIDA, HAITIAN NON GOVERNMENTAL ORGANIZATIONS
LES ARCADIN NATIONAL PARK MANAGEMENT, HAITI	HAITI HOTEL ASSOCIATION AND WWF-US
PUBLICATION OF "USEFUL TREES OF HAITI"	YALE UNIVERSITY AND WWF-US
JAMAICA	
ECOLOGY OF MIGRATORY PASSERINE BIRDS ON BREEDING AND WINTERING AREAS	DARTMOUTH COLLEGE
ECOLOGY OF MIGRATORY PASSERINE BIRDS ON BREEDING AND WINTERING AREAS	TULANE UNIVERSITY
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	JAMAICA CONSERVATION AND DEVELOPMENT TRUST
BLUE MOUNTAIN TRAIL IMPROVEMENT PROJECT	JAMAICA CONSERVATION AND DEVELOPMENT TRUST (JCDT) AND THE NATURE CONSERVANCY
PROTECTED AREAS RESOURCES CONSERVATION PROJECT	THE NATURE CONSERVANCY, GOV. OF JAMAICA, AND JAMAICA CONSERV. AND DEVELOP. TRUST
PROTECTED AREAS RESOURCE CONSERVATION	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
HURRICANE DAMAGE ASSESSMENT ON FOREST RESERVE, COSTA RICA & JAMAICA	US FOREST SERVICE -- INSTITUTE OF TROPICAL FORESTRY AND WWF-US
MONTSERRAT	
ENVIRONMENTAL EDUCATION PROGRAM ON MONTSERRAT WILDLIFE	US FISH AND WILDLIFE SERVICE
NETHERLANDS ANTILLES	
SPECIATION AND EVOLUTION OF THE BIRDS OF PARADISE	UNIVERSITY OF ILLINOIS - CHICAGO
WWF-US SUPPORT FOR SABA MARINE PARK, NETHERLAND ANTILLES	SABA MARINE PARK, NETHERLAND ANTILLES
SAINT LUCIA	
COASTAL RESOURCE MGMT. FIELD PROGRAM, SE COAST ST. LUCIA	EASTERN CARIBBEAN NATURAL AREAS MANAGEMENT PROGRAM AND WWF-US
TRINIDAD AND TOBAGO	
LIFE HISTORY EVOLUTION IN TRINIDADIAN GUPPIES	UNIVERSITY OF CALIFORNIA - RIVERSIDE
HABITAT HETEROGENEITY AND THE THERMAL BIOLOGY OF FOREST FROGS	UNIVERSITY OF ALABAMA - BIRMINGHAM AND RUTGERS UNIVERSITY
VARIOUS	
MOSS FLORA OF THE WEST INDIES	NEW YORK BOTANICAL GARDEN

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PROJECT TITLE	PROJECT IMPLEMENTOR
ENHANCE SKILLS OF CONSERVATION PROFESSIONALS IN THE INSULAR CARIBBEAN	EASTERN CARIBBEAN NATURAL AREA MANAGEMENT PROGRAM
EASTERN CARIBBEAN NATURAL AREA MANAGEMENT PROGRAM	NATIONAL PARK SERVICE
CARTAGENA CONVENTION, SPECIAL PROTECTED AREA PROTOCOL	NATIONAL PARK SERVICE
COUNTRY ENVIRONMENTAL PROFILES FOR THE EASTERN CARIBBEAN	ISLAND RESOURCES FOUNDATION
INSTITUTIONAL DEVELOPMENT OF EASTERN CARIBBEAN NGOS	ISLAND RESOURCES FOUNDATION
CENTER FOR ENVIRONMENTAL STUDIES, UNIVERSITY OF THE WEST INDIES	UNIVERSITY OF WEST INDIES AND WWF-US
TEACHING SUPPORT, UNIV. OF WEST INDIES ENVIRONMENTAL STUDIES PROGRAM	ECNAMP
MIGRANT LAND BIRDS, CARIBBEAN	UNIVERSITY OF PUERTO RICO AND WWF-US
CARIBBEAN CONSERVATION ASSOCIATION EDUCATION PROGRAM SUPPORT	CARIBBEAN CONSERVATION ASSOCIATION AND WWF-US
PARTICIPANTS TO NATIONAL PARKS PROJECT DEVELOPMENT WORKSHOP, DOMINICA	CARIBBEAN CONSERVATION ASSOCIATION AND WWF-US
■ VARIOUS (CUBA, DOMINICAN REPUBLIC)	
SYSTEMATIC INVESTIGATIONS OF CUBAN AND HISPANIOLAN HERPETOFAUNA	PENN STATE UNIVERSITY - CENTER OFFICE
MONOGRAPH OF MACROSCOPIC FRESHWATER RHODOPHYTA OF NORTH AMERICA	UNIVERSITY OF RHODE ISLAND
■ VARIOUS (DOMINICAN REPUBLIC, HAITI)	
PTERIDOFLORA OF HISPANIOLA	NEW YORK BOTANICAL GARDEN
EVOLUTIONARY ECOMORPHOLOGY OF WEST INDIAN ANOLIS LIZARDS	UNIVERSITY OF CALIFORNIA - BERKELEY
■ VARIOUS (EASTERN CARIBBEAN)	
DEVELOPING NGO INITIATIVES FOR NATURAL RESOURCES MANAGEMENT, E. CAR	ISLAND RESOURCE FOUNDATION AND WWF-US
■ VARIOUS (INCLUDING BELIZE)	
CARIBBEAN CORAL REEF ECOSYSTEMS PROGRAM	SMITHSONIAN INSTITUTION - NATIONAL MUSEUM OF NATURAL HISTORY
■ VIRGIN ISLANDS	
VIRGIN ISLANDS BIOSPHERE RESERVE TRAINING PROGRAM	NATIONAL PARK SERVICE

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PROJECT TITLE	PROJECT IMPLEMENTOR

CENTRAL AMERICA

BELIZE

INTERCELLULAR CONNECTIONS AND THE ORDINAL SYSTEMATICS OF THE RED ALGAE	STATE UNIVERSITY OF NEW YORK - BINGHAMTON
RIO BRAVO RESERVE AND NATIONAL PROGRAM OF ENVIRONMENTAL EDUCATION	PROGRAMME FOR BELIZE
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	BELIZE AUDUBON SOCIETY
RIO BRAVO BIOLOGICAL RESEARCH AND TRAINING PROJECT	MANOMET BIRD OBSERVATORY
W. ALTON JONES FOUNDATION PROGRAM SUPPORT	PROGRAMME FOR BELIZE
ENVIRONMENTAL EDUCATION AND PROGRAMMING WORKSHOP	NATIONAL PARK SERVICE
WORKSHOP ON CONSERVATION AND ENVIRONMENTAL EDUCATION	PEACE CORPS
COMMUNICATION/PARK INTERPRETATION SKILLS WORKSHOP	PEACE CORPS
SUPPORT TO BELIZE AUDUBON SOCIETY	PEACE CORPS
BELIZE BARRIER REEF CONSERVATION & MANAGEMENT	WILDLIFE CONSERVATION INTERNATIONAL
TROPICAL FOREST RESERVE PLANNING, CARACOL	WILDLIFE CONSERVATION INTERNATIONAL
RIO BRAVO CONSERVATION AND MANAGEMENT AREA	PROGRAMME FOR BELIZE
MANAGEMENT & DEVELOPMENT OF COCKSCOMB BASIN WILDLIFE SANCTUARY, BELIZE	BELIZE AUDUBON SOCIETY AND WWF-US
EXPANDING CONSERVATION & ENVIRONMENTAL EDUCATION IN BELIZE	BELIZE ZOO TROPICAL EDUCATION CENTER AND WWF-US
HOL CHAN MARINE RESERVE ESTABLISHMENT, BELIZE	BELIZE MINISTRY OF AGRICULTURE AND WWF-US
COMMON IGUANA CAPTIVE BREEDING PROGRAM, BELIZE	THE BELIZE ZOO AND TROPICAL EDUCATION CENTER AND WWF-US
ESTABLISHING THE BLADEN BRANCH NATURE RESERVE, BELIZE	DUKE UNIVERSITY AND WWF-US
SUPPORT TO BERMUDIAN LANDING HOWLER MONKEY RESERVE, BELIZE	WORLD WILDLIFE FUND

COSTA RICA

TALAMANCA PROJECT	MISSOURI BOTANICAL GARDEN
W.L. BROWN FELLOWSHIP	MISSOURI BOTANICAL GARDEN
MANUAL OF FLORA, COSTA RICA	MISSOURI BOTANICAL GARDEN
STUDY OF TROPICAL FOREST, COSTA RICA	MISSOURI BOTANICAL GARDEN
INVENTORY OF RIO PENAS BLANCAS, COSTA RICA	MISSOURI BOTANICAL GARDEN
SPATIAL VARIATION IN THE STRUCTURE OF A MUTUALISM-CENTERED COMMUNITY	NSF INDIVIDUAL AWARD TO GOLDWASSER

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PROJECT TITLE	PROJECT IMPLEMENTOR
MANUAL TO THE PLANTS OF COSTA RICA	MISSOURI BOTANICAL GARDEN
IMPACT OF HERBIVORES ON A COSTA RICAN DECIDUOUS FOREST	UNIVERSITY OF PENNSYLVANIA
MOTH FAUNA OF COSTA RICA	UNIVERSITY OF PENNSYLVANIA
NECTARS AND THEIR ROLE IN ATTRACTING ANT PROTECTORS	NSF INDIVIDUAL AWARD TO LANZA
N2O AND NO FLUX FROM TROPICAL PASTURES AND FORESTS	UNIVERSITY OF WYOMING
IMPACT OF ENVIRONMENT ON PLANT SUSCEPTIBILITY TO LEAF-CUTTER ANTS	PENN STATE UNIVERSITY - CENTER OFFICE
SYSTEMATIC, MORPHOLOGICAL, AND ECOLOGICAL STUDIES OF SALAMANDERS	UNIVERSITY OF CALIFORNIA - BERKELEY
GRANT TO ENLARGE THE TORTUGUERO RESERVE IN COSTA RICA	WILDLIFE CONSERVATION INTERNATIONAL
COSTA RICA LAND PROGRAM - LAND ACQUISITION IN MONTE VERDE PARK	WILD WINGS FOUNDATION
FELLOWSHIPS FOR WILDLIFE MANAGEMENT GRADUATE PROGRAM	UNIVERSIDAD NACIONAL
EDUCATION PROGRAM AT GUANACASTE NATIONAL PARK	FUNDACION DE PARQUES NACIONALES
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	FUNDACION NEOTROPICA
TROPICAL ECOLOGY COURSE AND RESEARCH FELLOWSHIPS IN COSTA RICA	ORGANIZATION FOR TROPICAL STUDIES, INC.
BIOSPHERE RESERVE PROJECTS	NATIONAL PARK SERVICE
ENVIRONMENTAL EDUCATION TRAINING	PEACE CORPS
TARPON STATUS & MARINE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
FLORA COSTARICENSIS	FIELD MUSEUM, HERBARIO NACIONAL AND MUSEO NACIONAL, COSTA RICA
TRAVEL FUNDS FOR COSTA RICAN NGOS	THE NATURE CONSERVANCY
THE NATURE CONSERVANCY SUPPORT FOR BRAULIO CARILLO NATIONAL PARK	FUNDACION DE PARQUES NACIONALES, COSTA RICA
THE NATURE CONSERVANCY SUPPORT FOR INBIO	INSTITUTO NACIONAL DE BIODIVERSIDAD (INBIO)
DEBT FOR NATURE SWAP -- COSTA RICA	THE NATURE CONSERVANCY
GUANACASTE NATIONAL PARK DEBT SWAP	THE NATURE CONSERVANCY
VOLCANOLOGY AND BIRTH OF A TROPICAL FOREST: ARENAL VOLCANO	SMITHSONIAN INSTITUTION
SEED DISPERSAL BY BIRDS AND ANTS IN A TROPICAL RAIN FOREST	UNIVERSITY OF FLORIDA
RITUAL COURTSHIP: MALE-MALE COOPERATION AMONG LEKKING MANAKIN	UNIVERSITY OF FLORIDA
HOWLER MONKEYS: A LONG-TERM STUDY OF ECOLOGY AND BEHAVIOR	DUKE UNIVERSITY, TULANE UNIVERSITY
ECOSYSTEM PROCESS IN TREEFAL GAPS OF A LOWLAND TROPICAL RAIN FOREST	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES

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PROJECT TITLE	PROJECT IMPLEMENTOR
BIOLOGICAL CONTROL OF SOIL PROPERTIES IN THE HUMID TROPICS	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES
LABORATORY FACILITIES FOR ECOLOGICAL RESEARCH IN THE TROPICAL RAIN FOREST	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES
LABORATORY EQUIPMENT FOR RESEARCH IN HUMID TROPICAL SYSTEMS	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES
LA SELVA BIOLOGICAL STATION - ADMINISTRATION, MAINTENANCE AND DEVELOPMENT	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES
TRIALS - SCREENING INDIGENOUS TREE SPECIES	DUKE UNIV/ORGANIZATION FOR TROPICAL STUDIES
NATIONAL UNIVERSITY OF COSTA RICA GRADUATE PROGRAM IN WILDLIFE MANAGEMENT	US FISH AND WILDLIFE SERVICE
BIODOC CENTER	US FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE SERVICE WILDLIFE MANAGEMENT WORKSHOP - COSTA RICA	US FISH AND WILDLIFE SERVICE
WETLANDS INVENTORY WORKSHOP - COSTA RICA	US FISH AND WILDLIFE SERVICE
FOREST RESOURCES FOR STABLE ENVIRONMENT - FORESTA	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
COMPREHENSIVE CONSERVATION AND DEVELOPMENT PLAN FOR TORTUGERO	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
MANAGEMENT OF CORCOVADO NATIONAL PARK, COSTA RICA	FUNDACION NEOTROPICA AND WWF-US
LA AMISTAD NATL PARK, COSTA RICA	FUNDACION NEOTROPICA AND WWF-US
SUSTAINABLE RURAL DEVELOPMENT, TALAMANCA (GANDOCA), COSTA RICA	ASOCIACION ANAI AND WWF-US
WHITE TAILED DEER REINTRODUCTION, COSTA RICA	UNIVERSIDAD NACIONAL DE COSTA RICA AND WWF-US
MANAGEMENT OF TORTUGUERO NATIONAL PARK, COSTA RICA	COSTA RICA NATIONAL PARKS FOUNDATION AND WWF-US
SAVING THE MONTEVERDE CLOUD FOREST, COSTA RICA	MONTEVERDE CONSERVATION LEAGUE AND WWF-US
SUPPORT FOR LOMAS BARBUDAL, COSTA RICA	UNIVERSITY OF CALIFORNIA, AMIGOS DE LOMAS BARBUDAL, AND WWF-US
PALO VERDE NATIONAL PARK, COSTA RICA: PURCHASE OF IN-HOLDINGS	FUNDACION DE PARQUES NACIONALES AND WWF-US
TRAINING COORDINATOR SUPPORT, CATIE WILDLAND UNIT, C. RICA	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
GUANACASTE NATIONAL PARK, COSTA RICA	DR. DANIEL JANZEN
OLIVE RIDLEY POPULATION MONITORING, SANTA ROSA NATIONAL PARK	UNIVERSIDAD NACIONAL, COSTA RICA, AND WWF-US
FIRST CONGRESS ON NATIONAL CONSERVATION STRATEGY, COSTA RICA	MINISTRY OF NATURAL RESOURCES, ENERGY AND MINES, COSTA RICA, WWF-US
SQUIRREL MONKEY SURVEY & EDUCATION CAMPAIGN, COSTA RICA	UNIVERSIDAD NACIONAL, COSTA RICA, AND WWF-US
SEA TURTLE POPULATION STUDY, PACIFIC COAST, COSTA RICA	WORLD WILDLIFE FUND

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PROJECT TITLE	PROJECT IMPLEMENTOR
INTERPRETIVE TRAINING FOR COSTA RICAN'S NATIONAL PARK DIRECTOR	SERVICIO DE PARQUES NACIONALES AND WWF-US
BOSCOSA PROJECT: SUSTAINABLE FOREST MGMT., CORCOVADO NATIONAL PARK	CONSERVATION FOUNDATION, FUNDACION NEOTROPICA AND WWF-US
SOCIO-ECONOMIC ANALYSIS, BARRA DE COLORADO REFUGE, C. RICA	CORP. FOR THE INVESTIGATION OF SOCIO-ECOLOGICAL DEV. (CIDESA), WWF-US
WWF-US SUPPORT FOR COSTA RICAN ASSOCIATION FOR CONS. OF NATURE, ASCONA	ASOCIACION COSTARRICENSE PARA LA CONSERVACION DE LA NATURALEZA, ASCONA
STRATEGY FOR CONSERVATION & RURAL DEVELOPMENT, GUANACASTE, COSTA RICA	PROYECTO PARQUE NACIONAL GUANACASTE AND WWF-US
REVIEW OF CATIE WILDLANDS PLANNING & MANAGEMENT TRAINING, COSTA RICA	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
■ EL SALVADOR	
WWF-US SUPPORT FOR GRUPO ECOLOGICO DOCENTAS SCIENCIAS, EL SALVADOR	GRUPO ECOLOGICO DOCENTES SCIENCIAS DE EL SALVADOR
■ GUATEMALA	
TELEVISION SERIES ON THE VALUE OF WILDERNESS IN CENTRAL AMERICA	CENTRO REGIONAL DE AUDIOVISUALES
STUDIES OF RAPTOR ECOLOGY, TRAINING ZOOLOGISTS, AND PROMOTING COOPERATION	PEREGRINE FUND
IMPROVED MANAGEMENT OF MAYA BIOSPHERE RESERVE AND DOS LAGUNAS FIELD STATION	CENTRO DE ESTUDIOS CONSERVACIONISTAS (CECON)
MANAGING AGRICULTURAL LANDS FOR WILDLIFE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
HABITAT EVALUATION, EL PETEN	WILDLIFE CONSERVATION INTERNATIONAL
OCELLATED TURKEY STATUS & HABITAT CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
POPULATION SIZE & STRUCTURE OF MORELET'S CROCODILE, EL PETEN	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION DATA CENTER	CENTRO DE ESTUDIOS CONSERVACIONISTAS (CECON) AND THE NATURE CONSERVANCY
PETEN PARK DESIGN	THE NATURE CONSERVANCY
BIODIVERSITY AND CONSERVATION PLANNING	CENTRO DE ESTUDIOS CONSERVACIONISTS (CECON)
DEVELOPMENT TRAINING & SUPPORT	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
WILDLANDS MANAGEMENT TRAINING PROJECT	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
MONTERRICO BIOSPHERE RESERVE SUPPORT, GUATEMALA	CONSERVATION CENTER, UNIVERSITY OF SAN CARLOS (CECON) AND WWF-US
ENVIRONMENTAL EDUCATION OFFICER, DEFENSORES DE LA NATURALEZA	DEFENSORES DE LA NATURALEZA AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
WWF-US SUPPORT FOR DEFENSORES DE LA NATURALEZA, GUATEMALA	FUNDACION DEFENSORES DE LA NATURALEZA
SIERRA DE LAS MINAS FEASIBILITY STUDY, GUATEMALA	DEFENSORES DE LA NATURALEZA AND WWF-US
PROJECT FARO, GUATEMALA	PROJECT FARO AND WWF-US
NATIONAL ADVISORY COUNCIL ON PROTECTED AREAS ASSISTANCE, GUATEMALA	COMISION NACIONAL PARA EL MEDIO AMBIENTE (CONAMA) AND WWF-US
WWF-US SUPPORT FOR AMIGOS DEL BOSQUE, GUATEMALA	AMIGOS DEL BOSQUE
BIOTOPE RESERVE SYSTEM CONSOLIDATION, GUATEMALA	WORLD WILDLIFE FUND
HONDURAS	
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	ASOCIACION HONDURENA DE ECOLOGIA PARA LA CONSERVACION DE LA NATURALEZA
ENVIRONMENTAL EDUCATION WORKSHOP FOR TEACHERS	PEACE CORPS
NATIONAL ENVIRONMENTAL EDUCATION ENCOUNTER	PEACE CORPS
PROJECT DEVELOPMENT AND WILDLAND PLANNING WORKSHOP	PEACE CORPS
ENVIRONMENTAL EDUCATION PST MODULE	PEACE CORPS
HONDURAS CRACIDS	WILDLIFE CONSERVATION INTERNATIONAL
NATURAL RESOURCES MANAGEMENT - RIO PLATANO BIOSPHERE RESERVE	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
FORESTRY DEVELOPMENT PROJECT - BIOLOGICAL RESERVE MANAGEMENT	HONDURAN FORESTRY DEVELOPMENT CORPORATION (COHDEFOR)
LAND USE PRODUCTIVITY ENHANCEMENT	U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
RIO PLATANO BIOSPHERE RESERVE MANAGEMENT, HONDURAS	ASOCIACION HONDURENA DE ECOLOGIA AND WWF-US
MANAGEMENT & DEVELOPMENT, LA TIGRA NATIONAL PARK, HONDURAS	ASOCIACION HONDURENA DE ECOLOGIA (AHE) AND WWF-US
WWF-US SUPPORT FOR HONDURAN ECOLOGICAL SOCIETY	ASOCIACION HONDURENA DE ECOLOGIA
AMINA ENVIRONMENTAL EDUCATION TRAINING PROGRAM, LA TIGRA NAT'L PARK	ASOCIACION HONDURENA DE ECOLOGIA AND WWF-US
CROCODILIAN POPULATION STUDIES, HONDURAS	UNIVERSIDAD NACIONAL, HONDURAS, AND WWF-US
PICO BONITO NATIONAL PARK, HONDURAS: BUFFER ZONE DELIMITATION	UNIVERSIDAD NACIONAL AUTONOMA DE HONDURAS AND WWF-US
WWF-US SUPPORT FOR ASOCACION HONDURENA DE ECOLOGIA	ASOCIACION HONDURENA DE ECOLOGIA
CELAQUE NATIONAL PARK OPERATIONAL PLAN IMPLEMENTATION, HONDURAS	ASOCIACION HONDURENA ECOLOGICA (AHE) AND WWF-US
CUSUCO NATIONAL PARK OPERATIONAL PLAN IMPLEMENTATION, HONDURAS	ASOCIACION HONDURENA ECOLOGICA (AHE) AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
SIERRA DE AGALTA NATIONAL PARK OPERATION PLAN IMPLEMENTATION, HONDURAS	ASOCIACION HONDURENA ECOLOGICA (AHE) AND WWF-US
■ MEXICO	
FERNS FOR THE FLORA NOVO-GALICIANA	NEW YORK BOTANICAL GARDEN
MOLECULAR PHYLOGENY OF THE CRUSTACEA	FLORIDA STATE UNIVERSITY
SYSTEMATICS OF AN OLD POLYPLOID COMPLEX IN GENUS GAUDICHAUDIA	UNIVERSITY OF MICHIGAN - ANN ARBOR
PHYLOGENY, ORIGINS, AND PALEOBIOGEOGRAPHY OF FAGACEAE	UNIVERSITY OF CONNECTICUT
FLORA MESOAMERICANA - PHASE 2	MISSOURI BOTANICAL GARDEN
CLADISTIC ANALYSES OF VIBURNUM: SYSTEMATICS OF ERYTHRINA	UNIVERSITY OF ARIZONA
SYSTEMATICS OF ERYTHRINA AND EVOLUTION OF POLLINATION SYSTEMS	CORNELL UNIVERSITY
MOLECULAR SYSTEMATICS OF LEGUME TRIBE PHASEOLEAE AND ALLIES	CORNELL UNIVERSITY
BIOCHEMICAL SYSTEMATICS OF PUPFISHES	OKLAHOMA STATE UNIVERSITY
HABITAT DETERMINATION IN TROPICAL PIPER SPECIES	CARNEGIE INSTITUTE OF WASHINGTON
PHYLOGENETIC RELATIONSHIPS IN CHEILANTHOID FERNS	INDIANA UNIVERSITY FOUNDATION
SYSTEMATIC STUDIES IN PLANT FAMILY LYTHRACEAE	KENT STATE UNIVERSITY
HYBRIDIZATION BETWEEN WESTERN AND GALUCOUS WINGED GULLS	UNIVERSITY OF CALIFORNIA - BERKELEY
NUTRITIONAL BASIS FOR INSULAR GIGANTISM IN SMALL MAMMALIAN HERBIVORES	UNIVERSITY OF CALIFORNIA - IRVINE
SELECTION ALLOCATION AND GAMETE PRODUCTION IN DROSOPHILA PACHEA	ARIZONA STATE UNIVERSITY
BIOGEOGRAPHY AND EVOLUTIONARY GENETICS OF STENOCEREUS	UNIVERSITY OF TEXAS - AUSTIN
PHYLOGENETICS, POPULATION STRUCTURE, AND HYBRID ZONE DYNAMICS	BRIGHAM YOUNG UNIVERSITY
SEED POPUL. DYNAMICS & COEXISTENCE OF PIONEER TREE SPECIES IN TROPICAL FORESTS	UNIVERSITY OF CALIFORNIA - BERKELEY
COMPETITION AND GENOTYPIC DIVERSITY IN POECILIOPSIS	RUTGERS UNIVERSITY - NEW BRUNSWICK
BIOSYSTEMATICS OF THE GENUS CORNUS	DUKE UNIVERSITY
DOMESTICATED CHENOPODIUM OF MEXICO	TEXAS A&M RESEARCH FOUNDATION
EFFECTS OF NEOTROPICAL DEFORESTATION ON MIGRATORY BIRD POPULATIONS	SMITHSONIAN INSTITUTION
ECOLOGY, UTILIZATION, MGMT. OF MANGROVES -- LAGUNA DE TERMINOS REGION, MEXICO	LOUISIANA STATE UNIVERSITY AND UNIVERSIDAD NACIONAL AUTONOMA, MEXICO
TRAINING IN ECOSYSTEMS IN TROPICAL MEXICO	UNIVERSITY OF FLORIDA FOUNDATION
GRADUATE FELLOWSHIPS AT CENTER FOR ECOLOGY	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO

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PROJECT TITLE	PROJECT IMPLEMENTOR
AID INST. OF NAT. HISTORY, DEVELOP BIOSPHERE RESERVES, PLAN TROP. ECOL. RES. CTR	FUNDACION CHIPANECA MIGUEL ALVAREZ DEL TORO PARA LA PROTECTION DE LA NATURALEZA
CONSERVATION PROGRAM FOR THE NEW CALAKMUL BIOSPHERE RESERVE IN CAMPECHE	BIOCENOSIS, A.C.
NATURAL RESOURCE MGMT WITH LOCAL GROUPS AND GOVERNMENT IN CHIMALAPAS, OAXACA	SYNERGOS INSTITUTE
COLLABORATIVE PROGRAM ON TRADITIONAL SYSTEMS OF RESOURCE MGMT. IN SOUTH MEXICO	UNIVERSITY OF CALIFORNIA, CONSORTIUM ON MEXICO AND THE UNITED STATES(MEXUS)
CONSERV. AND SUSTAINABLE DEVELOPMENT PROGRAM IN THE SIAN KA'AN BIOSPHERE RESERVE	AMIGOS DE SIAN KA'AN
NATURAL FOREST MANAGEMENT PROGRAM IN SOUTHERN QUINTANA ROO	SOCIEDAD DE PRODUCTORES FORESTALES DE QUINTANA ROO
MACARTHUR SUPPORT FOR MEXICO PROGRAMS	WORLD WILDLIFE FUND
SELVA LACANDONA PROJECT	CONSERVATION INTERNATIONAL
INVENTORIES AND RESEARCH IN S. MEXICO AND EST. OF A NAT. ECOLOGICAL INFO. SYSTEM	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO
3RD CHIHUAHUAN DESERT SYMPOSIUM	NATIONAL PARK SERVICE
INTERNATIONAL SEMINAR OF ENVIRONMENTAL EDUCATION AND 1ST INTERPRETIVE WORKSHOP	NATIONAL PARK SERVICE
CURRICULUM DEVELOPMENT FOR 2 COURSES IN NORTHERN MEXICO & BORDER STATES CONF.	NATIONAL PARK SERVICE
SIERRA DEL CARMEN PARK INITIATIVE	NATIONAL PARK SERVICE
NPS SOUTHWEST REGIONAL OFFICE MEXICO PROGRAM	NATIONAL PARK SERVICE
3RD MID-LEVEL MANAGEMENT COURSE IN MEXICO	NATIONAL PARK SERVICE
SONORAN DESERT BIOSPHERE RESERVE MEXICO AND U.S.A.	NATIONAL PARK SERVICE
1ST PROTECTED AREA PLANNING COURSE FOR CUATROCIENIGAS	NATIONAL PARK SERVICE
STUDY OF RELATIONSHIP OF SHORE BIRDS AND MANGROVES, UCAMACINTA DELTA	NATIONAL PARK SERVICE
MIGRATORY BIRD MONITORING WORKSHOP	NATIONAL PARK SERVICE
ECOTOURISM AND "LA RUTA MAYA"	NATIONAL PARK SERVICE
FOREST FRAGMENTATION & RAPTOR CONSERVATION, LACANDONA NATIONAL PARK	WILDLIFE CONSERVATION INTERNATIONAL
JAGUAR SURVEY, CALAKMUL	WILDLIFE CONSERVATION INTERNATIONAL
ECOLOGY OF THE HORNED GUAN, CHIAPAS	WILDLIFE CONSERVATION INTERNATIONAL
WHITE-LIPPED PECCARY STUDY & HABITAT EVALUATION, CALAKMUL	WILDLIFE CONSERVATION INTERNATIONAL
CALAKMUL BIOSPHERE RESERVE	PRONATURA YUCATAN AND THE NATURE CONSERVANCY
SIAN KA'AN BIOSPHERE RESERVE	AMIGOS DE SIAN KA'AN AND THE NATURE CONSERVANCY

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PROJECT TITLE	PROJECT IMPLEMENTOR
RIO CELESTUN AND RIO LAGARTOS WILDLIFE REFUGES	PRONATURA YUCATAN AND THE NATURE CONSERVANCY
RIO CELESTUM AND RIO LAGARTOS WILDLIFE REFUGES	PRONATURA YUCATAN AND THE NATURE CONSERVANCY
EL TRIUNFO BIOSPHERE RESERVE	INSTITUTO DE HISTORIA NATURAL DE CHIAPAS AND THE NATURE CONSERVANCY
LA ENCRUCIJADA ECOLOGICAL RESERVE	INSTITUTO DE HISTORIA NATURAL DE CHIAPAS AND THE NATURE CONSERVANCY
EL OCOTE ECOLOGICAL RESERVE	INSTITUTO DE HISTORIA NATURAL DE CHIAPAS AND THE NATURE CONSERVANCY
EL PINACATE DESERT RESERVE	CENTRO ECOLOGICO DE SONORA AND THE NATURE CONSERVANCY
CONSERVATION AND STUDY OF SEA TURTLES IN QUINTANA ROO PROVINCE	WOODS HOLE INSTITUTE, CENTRO DE INVESTIGACIONES DE QUINTANA ROO (MEXICO)
HUMPBACK WHALES OF BAJA CALIFORNIA	UNIVERSIDAD AUTONOMA DE BAJA CALIF. SUR (MEXICO), CENTER FOR WHALE RESEARCH
SPINY LOBSTER RESOURCE PRESERVATION IN SIAN KA'AN BIOSPHERE RESERVE	CENTRO DE INVESTIGACIONES DE QUINTANA ROO, STATE UNIVERSITY OF NEW YORK-CORTLAND
ASTERACEAE OF MEXICO	PLANT RESOURCES CENTER, UNIVERSITY OF TEXAS
SEA TURTLE CONSERVATION, MICHOACAN, MEXICO	UNIVERSIDAD DE MICHOACAN AND WWF-US
MONARCH BUTTERFLY OVERWINTERING HABITAT CONS., MEXICO	MONARCA, A. C. AND WWF-US
CONSERVATION & DEVELOPMENT EFFORTS, TUXTLA MTNS., S. VERACRUZ, MEXICO	CAESAR KLEBERG RESEARCH INSTITUTE AND WWF-US
TROPICAL RAIN FOREST CONSERVATION, CHIAPAS, MEXICO	INSTITUTO DE HISTORIA NATURAL AND WWF-US
FIELD GUIDE TO BIRDS OF MEXICO/SPANISH PUBLICATION	IUCN-WORLD CONSERVATION UNION AND WWF-US
ESTABLISHING THE SIERRA DE MANANTLAN BIOSPHERE RESERVE, MEXICO	LABORATORIA NATURAL LAS JOYAS AND WWF-US
4TH PROTECTED AREA MANAGEMENT & TRAINING COURSE, SALTILLO, MEXICO	UNIVERSIDAD AUTONOMA AGRARIA ANTONIO NARRO AND WWF-US
INSTITUTIONAL SUPPORT FOR MONARCA, A.C., MEXICO	MONARCA, A.C., AND WWF-US
BIOLOGICAL DIVERSITY MEETING FOLLOW-UP, MEXICO	WORLD WILDLIFE FUND
CONSERVATION OF THE SIAN KA'AN BIOSPHERE RESERVE, MEXICO	AMIGOS DE SIAN KA'AN AND WWF-US
ETHNOFLORA OF THE CHINAMPA AGRICULTURAL SYSTEM, MEXICO	UNIVERSITY OF CALIFORNIA, RIVERSIDE, AND WWF-US
ETHNOBOTANICAL STUDIES IN OAXACA, MEXICO	SOCIEDAD PARA EL ESTUDIO DE LOS RECURSOS BIOTICOS DE OAXACA AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
REINTRODUCTION OF ENDANGERED MEXICAN MAMMAL SPECIES	UNIVERSIDAD VERACRUZANA AND WWF-US
WILDLIFE CONSERVATION IN MEXICO PUBLICATION	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO
BIOLOGICAL DIVERSITY SYMPOSIUM, MEXICO	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO AND WWF-US
THREATENED PLANT USES IN PROTECTED AREAS, U.S./MEXICAN BORDER	THE FLORUTIL GROUP AND WWF-US
MAYAN GARDENS, WILDLIFE DENSITY & SUBSISTANCE HUNTING, MEXICO	JEFFREY P. JORGENSON AND WWF-US
BIOLOGICAL & INSTITUTIONAL OVERVIEW OF OAXACA, MEXICO	BIOCENOSIS, A.C. AND WWF-US
WWF-US SUPPORT FOR AMIGOS DE SIAN KA'AN, MEXICO	AMIGOS DE SIAN KA'AN
PHRAGMIPEDIUM ORCHID POPULATION STUDIES, MEXICO	IUCN ORCHID SPEC. GROUP, ASOC. MEX. DE ORQUIDEOLOGIA AND WWF-US
ISLAND CONSERVATION, SEA OF CORTES, BAJA CALIFORNIA, MEXICO	UNIVERSITY OF MEXICO AND WWF-US
BIOLOGICAL DIVERSITY SEMINARS ON CONSERVATION, MEXICO	MUSEUM OF ZOOLOGY, MEXICO AND WWF-US
DEVELOPMENT OF MANAGEMENT PLAN, CALAKMUL BIOLOGICAL RESERVE, MEXICO	PRONATURA YUCATAN AND WWF-US
SIERRA LA LAGUNA BIOLOGICAL RESERVE MGMT., BAJA CALIF. SUR, MEXICO	CENTRO DE INVESTIGACIONES BIOLOGICAS AND WWF-US
PRIMATE & HABITAT CONSERVATION, SOUTHERN MEXICO	UNIVERSIDAD NACIONAL AND WWF-US
WWF-US SUPPORT TO CULTURA ECOLOGICA, MEXICO	CULTURA ECOLOGICA
WWF-US SUPPORT FOR FUNDAMAT, CHIAPAS, MEXICO	FUND. CHIAPANECA M. ALVAREZ DEL TORO PARA LA CONSERV. DE LA NATURALEZA
WWF-US SUPPORT TO PRONATURA-CHIAPAS, MEXICO	ASOC. MEXICANA PROCONSERVACION DE LA NATURALEZA - CHIAPAS AND WWF-US
■ NICARAGUA	
SAN JUAN WATERSHED SEMINAR, NICARAGUA	WORLD WILDLIFE FUND
WWF-US SUPPORT FOR NICARAGUAN ENV. MOVEMENT & ASSOC. OF BIOL. & ECOL.	ASOCIACION DE BIOLOGOS Y ECOLOGOS DE NICARAGUA
■ PANAMA	
STUDY OF CERRO TACARCUNA, PANAMA	MISSOURI BOTANICAL GARDEN
BOTANICAL INVENTORY OF DARIEN, PANAMA	MISSOURI BOTANICAL GARDEN
STUDY OF BOCAS DEL TORO, PANAMA	MISSOURI BOTANICAL GARDEN
CONSEQUENCES OF LEAF LIFETIME FOR PHOTOSYNTH. PHYSIOL., SECONDARY METAB.,& ANAT.	UNIVERSITY OF UTAH
REVISION OF PHILODENDRON (ARACEAE) FOR CENTRAL AMERICA	MISSOURI BOTANICAL GARDEN

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PROJECT TITLE	PROJECT IMPLEMENTOR
POPULATION GENETIC STRUCTURE AND AVIAN EXTINCTION ON BARRO COLORADO ISLAND	UNIVERSITY OF ILLINOIS URBANA
SEASONAL AND SPATIAL VARIATION IN A NEOTROPICAL CANOPY TREE	COLLEGE OF WOOSTER
A MONOGRAPH OF THE NEOTROPICAL ZAMIACEAE	NEW YORK BOTANICAL GARDEN
ECOLOGY, BEHAVIOR, AND EVOLUTIONARY RELATIONSHIPS OF ALPHEID SHRIMPS	SMITHSONIAN INSTITUTION TROPICAL RESEARCH INSTITUTE
THE ROLE OF PREDATORS IN CORAL REEFS	SMITHSONIAN INSTITUTION TROPICAL RESEARCH INSTITUTE
SUPPORT FOR FIRST INTER-AMERICAN INDIGENOUS CONFERENCE	PROJECT FOR THE STUDY OF MGMT. FOR WILDLAND AREAS OF KUNA YALA (PEMASKY)
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	ASOCIACION NACIONAL PARA LA CONSERVACION DE LA NATURALEZA (ANCON)
IMPROVED MANAGEMENT OF THE DARIEN BIOSPHERE RESERVE	ASOCIACION NACIONAL PARA LA CONSERVACION DE LA NATURALEZA
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	ASOCIACION NACIONAL PARA LA CONSERVACION DE LA NATURALEZA (ANCON)
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	KUNA EMPLOYEES' ASSOCIATION
ECOLOGY AND MIGRATION OF MARINE TURTLES	WILDLIFE CONSERVATION INTERNATIONAL
THE EFFECTS OF DEFORESTATION ON GROWTH IN REEF-CORALS	UNIVERSITY OF IOWA
PROTECTION & DEVELOPMENT OF DARIEN NATIONAL PARK, PANAMA	FUNDACION ANCON AND WWF-US
KUNA INDIAN RESERVE MANAGEMENT, PANAMA	PROYECTO PEMASKY AND WWF-US
PANAMANIAN TO PAN AMERICAN DEVELOPMENT FOUNDATION MEETING, D.C.	RENEWABLE RESOURCES AGENCY, PANAMA (INRENARE) AND WWF-US
CORPORATE FUNDRAISING CAMPAIGN SUPPORT, ANCON, PANAMA	ASOCIACION NACIONAL PARA LA CONSERVACION DE LA NATURALEZA AND WWF-US
■ VARIOUS	
MOSS FLORA OF CENTRAL AMERICA	MISSOURI BOTANICAL GARDEN
RESEARCH AND TRAINING IN DESIGN OF MONTANE BIOLOG. RESERVES IN CENTRAL AMERICA	RARE CENTER FOR TROPICAL BIRD CONSERVATION
GENERAL SUPPORT FROM WILLIAM AND FLORA HEWLETT FOUNDATION	ORGANIZATION FOR TROPICAL STUDIES
MOBILE SEMINAR FOR PARK PLANNING	NATIONAL PARK SERVICE
EVOLUTIONARY RELATIONSHIPS OF CENTRAL AMERICAN MAMMALS	MUSEUM OF NATURAL SCIENCE, LOUISIANA STATE U.
SUPPORT FOR WORLD WILDLIFE FUND FIELD REPRESENTATIVE, CENTRAL AMERICA	WORLD WILDLIFE FUND
WILDLIFE MANAGEMENT GRADUATE PROGRAM, UNA, COSTA RICA	UNIVERSIDAD NACIONAL AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
BIOLOGICAL DOCUMENTATION CENTER, UNIVERSIDAD NACIONAL, C. RICA	UNIVERSIDAD NACIONAL AND WWF-US
CENTRAL AMERICAN PROTECTED WILDLANDS SYSTEM ACTION PLAN	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
FIRST GENERAL ASSEMBLY OF CENTRAL AMERICAN ENVIRONMENTAL NGO'S	BELIZE AUDUBON SOCIETY AND WWF-US
■ VARIOUS (BELIZE, PANAMA)	
GROWTH, PHENOTYPIC PLASTICITY AND POPULATION DYNAMICS OF REEF-CORALS	UNIVERSITY OF IOWA
■ VARIOUS (MEXICO AND CENTRAL AMERICA)	
MIGRATORY BIRDS BIODIVERSITY AUDIOVISUALS	NATIONAL PARK SERVICE
■ VARIOUS (MEXICO, BELIZE, GUATEMALA)	
CONSERVATION OF THE CENTRAL AMERICAN RIVER TURTLE	WILDLIFE CONSERVATION INTERNATIONAL

LATIN AMERICA

■ VARIOUS	
SCREENING OF TROPICAL PLANTS FOR ANTICANCER AND ANTI-HIV ACTIVITY--LATIN AMERICA	NEW YORK BOTANICAL GARDEN
■ VARIOUS	
FERN GENUS ELAPHOGLOSSUM FOR FLORA MESOAMERICA	NEW YORK BOTANICAL GARDEN
LATIN AMERICAN PLANT SCIENCE NETWORK	MISSOURI BOTANICAL GARDEN
REVISION OF RHODOSPATHA, NEOTROPICS	MISSOURI BOTANICAL GARDEN
STUDY OF BIGNONIACEAE III	MISSOURI BOTANICAL GARDEN
STUDY OF PHILODENDRON, NEOTROPICS	MISSOURI BOTANICAL GARDEN
NEOTROPICAL REVISION, PLEUROTHYRIUM (LAURACEAE)	MISSOURI BOTANICAL GARDEN
CHLOROPLAST DNA PHYLOGENY FOR THE CYATHEACEAE	MOUNT HOLYOKE COLLEGE
MAN AND THE BIOSPHERE BIODIVERSITY PROGRAM	SMITHSONIAN INSTITUTION - MAN AND THE BIOSPHERE BIODIVERSITY PROGRAM
LATIN AMERICAN PLANTS PROJECT	SMITHSONIAN INSTITUTION
INSTITUTION BUILDING FOR SMALL LATIN AMERICAN CONSERVATION GROUPS	WORLD WILDLIFE FUND
BUILDING SELF-SUSTAINING CONSERVATION ORGANIZATIONS IN LATIN AMERICA	THE NATURE CONSERVANCY

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
RESOURCE MANAGEMENT IN LATIN AMERICAN TROPICAL FORESTS	CULTURAL SURVIVAL, INC.
PROGRAM TO IMPROVE THE SELF-SUFFICIENCY OF LATIN AMERICAN CONSERVATION ORGANIZ.	THE NATURE CONSERVANCY
ESTABLISHING LATIN AMERICAN PLANT SCIENCES NETWORK	MISSOURI BOTANICAL GARDEN
TRAINING MANUAL FOR PROTECTED AREA MANAGEMENT IN LATIN AMERICA	NATIONAL PARK SERVICE
MANAGING OF PROTECTED AREAS IN THE TROPICS	BIOCENOSIS (MEXICO), US NATIONAL PARK SERVICE
FIELD MANAGER'S HANDBOOK ON STREAM QUALITY & LAND USE IMPACTS	NATIONAL PARK SERVICE
TRAINING MANUAL IN PROTECTED AREA MANAGEMENT FOR LATIN AMERICA	NATIONAL PARK SERVICE
ENVIRONMENTAL EDUCATION PROGRAMMING WORKSHOP	PEACE CORPS
NGO DEVELOPMENT PROGRAM	THE NATURE CONSERVANCY
CITES KIT FOR LATIN AMERICA	FUND. V. SILVESTRE, US FISH AND WILDLIFE S.
ENVIRONMENTAL EDUCATION SMALL GRANTS PROGRAM	US FISH AND WILDLIFE SERVICE
CATIE COURSE ON WILDLANDS PLANNING & MANAGEMENT, C. RICA	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
VIDA SILVESTRE NEOTROPICAL - LATIN AMERICA WILDLIFE JOURNAL	WORLD WILDLIFE FUND
PALM CONSERVATION & UTILIZATIONS IN LATIN AMERICA & CARIBBEAN	WORLD WILDLIFE FUND - US
FWS INTERNATIONAL WORKSHOP ON WILDLIFE RESOURCES MGMT., LATIN AMERICA	U.S. FISH AND WILDLIFE SERVICE AND WWF-US
SEA TURTLE MOVEMENTS, PACIFIC COAST, LATIN AMERICA	UNIVERSIDAD DE COSTA RICA AND WWF-US
SPANISH TRANSLATION OF THREATENED PLANTS NEWSLETTER	IUCN THREATENED PLANTS UNIT AND WWF-US
PUBLICATION OF BOLETIN PRIMATOLOGICO LATINOAMERICANO	GRUPO ARGENTINO DE ESPECIALISTAS EN PRIMATOLOGIA (GADEP) AND WWF-US
CATIE 5TH INTL MOBILE SEMINAR ON WILDLAND MANAGEMENT, COSTA RICA	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
NATURE TOURISM STUDY, LATIN AMERICA	VARIOUS, WORLD WILDLIFE FUND-US
US NATIONAL PARK SERVICE/WWF-US JOINT LATIN AMERICAN ACTIVITIES	VARIOUS
SUSTAINABLE DEVELOPMENT WORKSHOP: TECHNIQUES FOR MANAGERS	WORLD WILDLIFE FUND
COMMERCIAL USE OF NEOTROPICAL WILDLIFE: SPANISH BOOK TRANSLATION	SPAIDERA, ARGENTINA, AND WWF-US
WWF-US TRAVEL GRANTS FOR TROPICAL FORESTRY PROGRAM	VARIOUS

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
EL VOLANTE MIGRATORIO -- MIGRATORY BIRD NEWSLETTER, LATIN AMERICA	GENERAL DIRECTORATE OF FORESTRY AND WILDLIFE AND WWF-US
GENERAL TRAINING SERVICES FOR LATIN AMERICAN NGO STAFF	WORLD WILDLIFE FUND
WWF-US SUPPORT TO PARTICIPANTS 2ND INTL COASTAL & MARINE PARKS SEMINAR	GILES ROMULUS AND CONSTANTINI A. MONTERROSO
INDIGENOUS PEOPLES CONFERENCE ON NATURAL RESOURCE MANAGEMENT & CONSER.	PEMASKY AND WWF-US
NEEDS OF NETWORKING NON GOVERNMENTAL ORGANIZATIONS IN LATIN AMERICA	FUNDACION PA.NA.M.A. AND WWF-US
WWF-US SUPPORT FOR XI LATIN AMERICAN ZOOLOGICAL CONGRESS	FUNDACION NATURA
■ VARIOUS (ARGENTINA, BRAZIL, COSTA RICA)	
MOLECULAR SYSTEMATICS OF THE MALPIGHIACEAE	UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL
■ VARIOUS (ARGENTINA, MEXICO)	
SYSTEMATIC STUDIES OF VIGUIERA AND RELATED GENERA	UNIVERSITY OF TENNESSEE - KNOXVILLE
■ VARIOUS (BELIZE, CHILE, USA)	
BIOSYSTEMATICS OF LEAF-MINING LEPIDOPTERA	SMITHSONIAN INSTITUTION
■ VARIOUS (COSTA RICA, COLOMBIA, PANAMA)	
FERN GENIUS ELAPHOGLOSSUM FOR PTERIDOFLORA OF COSTA RICA, PANAMA, COLOMBIA	NEW YORK BOTANICAL GARDEN
■ VARIOUS (COSTA RICA, GUATEMALA, JAMAICA)	
CENOZOIC EVOLUTION OF TROPICAL AMERICAN VEGETATION	KENT STATE UNIVERSITY FOUNDATION
■ VARIOUS (DOMINICAN REPUBLIC, VENEZUELA)	
POP. DIFFERENTIATION, PHYLOGENY, AND BIOGEOGRAPHY OF WEST INDIES YELLOW WARBLERS	UNIVERSITY OF MICHIGAN - ANN ARBOR
■ VARIOUS (ECUADOR, MEXICO, SURINAM)	
POPULATION STRUCTURE OF THE GREEN SEA TURTLE	UNIVERSITY OF GEORGIA
■ VARIOUS (JAMAICA, MEXICO)	
SYSTMTCS., PHYLOGENY, & EVOL. OF BIOLUMINESCENT SIGNALS IN CYPRIDINID OSTRACODES	UNIVERSITY OF CALIFORNIA - LOS ANGELES

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR

OCEANIA

CORAL SEA ISLANDS

ECOSYSTEM PROCESSES IN TREEFALL GAPS OF LOWLAND TROPICAL RAIN FOREST	DUKE UNIVERSITY

FIJI

ECOLOGY AND GEOLOGY OF SHALLOW WATER REEF	UNIVERSITY OF TORONTO
BIODIVERSITY DATABASE FOR THE SOUTH PACIFIC	THE NATURE CONSERVANCY

FRENCH POLYNESIA

BEHAVIORAL ECOLOGY OF TAHITIAN SPINNER DOLPHINS	UNIVERSITY OF CALIFORNIA - SANTA CRUZ

GUAM

GUAM RAIL REINTRODUCTION, ROTA	WILDLIFE CONSERVATION INTERNATIONAL

PAPUA NEW GUINEA

SUPPORT FOR NEW CONSERVATION ORGANIZATION	WILDLIFE CONSERVATION INTERNATIONAL
BIRDS OF PARADISE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
GIANT CASSOWARY CONSERVATION & RESERVE PLANNING	WILDLIFE CONSERVATION INTERNATIONAL
INSECT DIVERSITY IN THE NEW GUINEA RAIN FOREST CANOPY	BISHOP MUSEUM
EVOLUTION OF INSECT DEFENSES IN A TROPICAL HABITAT	SCIENTIFIC METHODS, INC. (CALIFORNIA)

TONGA

EXTINCTION AND BIOGEOGRAPHY OF INSULAR VERTEBRATES	UNIVERSITY OF THE STATE OF NEW YORK
BIOLOGICAL IMPACT OF GIANT CLAM CIRCLES	MARINE RESEARCH FOUNDATION (FLORIDA)

VARIOUS

DATABASES ON PACIFIC INSECTS AND TERRESTRIAL ARTHROPODS	BISHOP MUSEUM
INSECTS OF MICRONESIA	BISHOP MUSEUM

VARIOUS (PACIFIC ISLANDS)

COMPETITIVE DISPLACEMENT: THE ROLE OF REPRODUCTIVE MODE AND PARASITISM	UNIVERSITY OF CALIFORNIA - SAN DIEGO
EVOLUTION OF PLANT BREEDING SYSTEMS	BRIGHAM YOUNG UNIVERSITY

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PROJECT TITLE	PROJECT IMPLEMENTOR
■ WESTERN SAMOA	
PROJECT SUPPORT FOR ENVIRONMENTAL EDUCATION/PARKS PROGRAM	PEACE CORPS
COASTAL ZONE MANAGEMENT WORKSHOP	PEACE CORPS

SOUTH AMERICA

■ ARGENTINA	
PHYLOGENETIC STUDIES OF THERAPSIDA AND MESOZOIC MAMMALIA	UNIVERSITY OF CHICAGO
ANIMAL INFLUENCES ON AQUATIC LANDSCAPE	UNIVERSITY OF WASHINGTON
SYSTEMATIC AND EVOLUTIONARY STUDIES IN THE PLANT FAMILY ONAGRACEAE	MISSOURI BOTANICAL GARDEN
SOUTHERN CONE TRAINING CENTER PLANNING IGUAZU NATIONAL PARK	NATIONAL PARK SERVICE
RIGHT WHALE/TOURIST INTERACTIONS	WILDLIFE CONSERVATION INTERNATIONAL
SEA LION ECOLOGY & COASTAL MANAGEMENT	WILDLIFE CONSERVATION INTERNATIONAL
SUPPORT FOR DEPARTMENT OF CONSERVATION, CHUBUT PROVINCE	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION OF PUNTA LEON SEABIRD MAMMAL COLONIES	WILDLIFE CONSERVATION INTERNATIONAL
CALED PENGUINS, COASTAL CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL, ECOBIOS
CETACEAN STRANDING NETWORK	WILDLIFE CONSERVATION INTERNATIONAL
MAGELLANIC PENGUINS AT PUNTA TOMBO	WILDLIFE CONSERVATION INTERNATIONAL
VALDES RESEARCH STATION & CONSERVATION COORDINATION	WILDLIFE CONSERVATION INTERNATIONAL
FLAMINGO AND SEABIRD SURVEYS	WILDLIFE CONSERVATION INTERNATIONAL
NOYES FOUNDATION FELLOWSHIPS	WILDLIFE CONSERVATION INTERNATIONAL
RESERVE MANAGER TRAINING PROGRAM	US FISH AND WILDLIFE SERVICE
CONSERVATION EDUCATION CURRICULUM, ARGENTINA	FUNDACION VIDA SILVESTRE ARGENTINA AND WWF-US
MANAGEMENT OF TUPINAMBIS TEGU LIZARD, ARGENTINA	UNIV. NACIONAL DE TUCUMAN AND WWF-US
CITES ADMINISTRATION & IMPLEMENTATION INVESTIGATION, ARGENTINA	TRAFFIC SOUTH AMERICA AND WWF-US
TUPINAMBIS LIZARD POPULATION, BIOLOGY & ECOLOGY, ARGENTINA	UNIVERSITY OF NEW MEXICO, UNIVERSIDAD NACIONAL DE TUCUMAN, AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
VEHICLE PURCHASE FOR ARGENTINE PRIMATE SPECIALISTS GROUP	GRUPO DE ESPECIALISTAS EN PRIMATES AND WWF-US
WWF-US SUPPORT FOR SABBATICAL TO US FOR DR. ENRIQUE BUCHER, ARGENTINA	DR. ENRIQUE BUCHER
WILDLIFE TRADE EDUCATION MATERIAL PRODUCTION, ARGENTINA	FUNDACION VIDA SILVESTRE ARGENTINA
SOUTHERN RIGHT WHALE CENSUS, PENINSULA VALDEZ, ARGENTINA	CARLOS OSCAR GARCIA AND WWF-US
■ BOLIVIA	
BOLIVIA TROPICAL FOREST PROJECT	MISSOURI BOTANICAL GARDEN
PILON LAJAS PROJECT, BOLIVIA	MISSOURI BOTANICAL GARDEN
STUDY OF FLORA OF YUNGAS VALLEYS OF BOLIVIA	MISSOURI BOTANICAL GARDEN
ORNITHOLOGICAL EXPLORATION OF THE SERRANIA DE HUANCHACA, BOLIVIA	MUSEUM OF NATURAL SCIENCE, LOUSIANA STATE U.
BENI BIOSPHERE RESERVE EDUCATION CENTER, BOLIVIA	CENTRO INTERDISCIPLINARIO DE ESTUDIOS COMUNITARIOS (CIEC) AND WWF-US
WWF-US SUPPORT: INSTIT. STRENGTHENING FOR BOLIVIAN ENVIRONMENTAL NGO'S	LIGA DE DEFENSA DEL MEDIO AMBIENTE (LIDEMA)
■ BRAZIL	
BOTANICAL DIVERSITY OF THE ATLANTIC COAST FORESTS OF BRAZIL	NEW YORK BOTANICAL GARDEN
BRAZILIAN ANGIOSPERMS WORKSHOP	MISSOURI BOTANICAL GARDEN
EVOLUTION OF PROTOZOAN PARASITES	HARVARD UNIVERSITY
ROLE OF PERIPHYTON ON THE AMAZON RIVER FLOODPLAIN	UNIVERSITY OF MARYLAND - CEES HORN POINT
PLANT ECOPHYSIOLOGY OF TEMPERATE AND TROPICAL FOREST SYSTEMS	UNIVERSITY OF WISCONSIN - MADISON
BIOGEOCHEMISTRY OF THE AMAZON RIVER: MAINSTEM - FLOOD PLAIN LINKAGES	UNIVERSITY OF WASHINGTON
PHOSPHORUS, CARBON, AND NITROGEN DYNAMICS IN PERTURBED NEOTROPICAL DRY FOREST	COLORADO STATE UNIVERSITY
CONSERVATION AND REINTRODUCTION OF GOLDEN LION TAMARIN	SMITHSONIAN INSTITUTION - NATIONAL ZOO
JESSIE SMITH NOYES FOUNDATION SUPPORT FOR POLICY WORK	INSTITUTO DE ESTUDOS AMAZONICOS
TRAINING AND RESEARCH ON EXTRACTIVE RESERVES	INSTITUTO DE ESTUDOS AMAZONICOS AND UNIV. OF CALIFORNIA - LOS ANGELES
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	FUNDACAO S.O.S. MATA ATLANTICA
DESIGN FOR BRAZILIAN COURSE ON BIODIVERSITY IN ACRE	NEW YORK BOTANICAL GARDEN
ENCOUNTER TO SAVE THE AMAZON AND HER PEOPLE	CHICO MENDES FUND - NATIONAL WILDLIFE FEDERATION

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
COLLAB. CONSERVATION PROJ. IN ATLANTIC FOREST AND DEVELOPMENT OF ACTION PLAN	CONSERVATION INTERNATIONAL
ATLANTIC FOREST RESEARCH AND CONSERVATION, TRAINING IN NATURAL RESOURCE MGMT.	FUNDACAO BIODIVERSITAS
CONSERVATION, SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL EDUCATION	FUNDACAO S.O.S. MATA ATLANTICA
SURVEYS OF THE ATLANTIC FOREST IN SOUTHERN BAHIA	NEW YORK BOTANICAL GARDEN
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	MUSEU PARENSE EMILIO GOELDI
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	FUNDACAO PRO-NATUREZA
TRAINING, RESEARCH AND CONSERV. PROG. WITH THE JARDIM BOTANICO DO RIO DE JANEIRO	INSTITUTO PRO-NATURA
RESEARCH ON THE BOTANICAL DIVERSITY OF THE JUREIA MOUNTAINS	INSTITUTO DE BOTANICA DO ESTADO DE SAO PAULO
W. ALTON JONES GENERAL SUPPORT TO FUNATURA TO PROTECT BRAZIL'S BIODIVERSITY	FUNATURA
MANAGEMENT TRAINING WITH SECRETARY OF ENVIRONMENT	NATIONAL PARK SERVICE
ECOLOGICAL IMPACT OF RUBBER-TAPPING IN ACRE PROVINCE	WILDLIFE CONSERVATION INTERNATIONAL
PRIMATE STUDIES IN FLOODED FORESTS & CONSERVATION COORDINATION	WILDLIFE CONSERVATION INTERNATIONAL
BIOLOGICAL DIVERSITY OF FOREST FRAGMENTS STUDY, BRAZIL	WORLD WILDLIFE FUND
FISHES & THE FOREST: PORTUGUESE BOOK PUBLICATION	MUSEU GOELDI AND WWF-US
WWF-US SUPPORT FOR FUNDACAO BRASILEIRA PARA CONSERVACAO NATUREZA	FUNDACAO BRASILEIRA PARA CONSERVACAO NATUREZA
GOLDEN LION TAMARIN CONSERVATION PROGRAM: REINTRODUCTION & EDUCATION	SMITHSONIAN INSTITUTION AND WWF-US
UNA BIOLOGICAL RESERVE, BRAZIL	RESERVA BIOLOGICA DE UNA - IBAMA, AND WWF-US
ENDANGERED BIRD STUDIES, NORTHEAST BRAZILIAN ATLANTIC FOREST	MUSEU NACIONAL AND WWF-US
PINCINGUABA STATE PARK, BRAZIL	INSTITUTO FLORESTAL, SAO PAULO, AND WWF-US
THREATENED PLANT SPECIES, BRAZIL	FUNDACAO BRASILEIRA PARA CONSERVACAO DA NATUREZA (FBCN) AND WWF-US
KAYAPO INDIAN ETHNOBIOLOGICAL STUDY, BRAZIL	MUSEU GOELDI
SOROCABA ZOO PROGRAM FOR CONSERVATION EDUCATION, BRAZIL	FUNATURA AND WWF-US
SMALL CETACEAN SURVEY, BRAZIL	FEMA (FOUNDATION FOR OCEANIC STUDIES) AND WWF-US
ENVIRONMENTAL CAMPAIGN SUPPORT FOR THE NEW CONSTITUTION, BRAZIL	FABIO FELDMANN AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
SUPPORT FOR WWF FIELD REPRESENTATIVE, BRAZIL	WORLD WILDLIFE FUND-US AND WORLDWIDE FUND FOR NATURE
KAYAPO INDIAN ETHNOBIOLOGICAL RESEARCH, BRAZIL	MUSEU GOELDI AND WWF-US
AMAZON FOREST FIRE STUDIES: FOREST CONSERVATION STRATEGIES, BRAZIL	PENNSYLVANIA STATE UNIVERSITY AND WWF-US
EXTRACTIVE PRODUCTS TRADE STUDY, BRAZILIAN AMAZON	UNIVERSITY OF NEW MEXICO AND WWF-US
PUBLICATION OF FRUITS OF THE AMAZON, BRAZIL	NATIONAL INSTITUTE FOR AMAZON RESEARCH (INPA) AND WWF-US
RIGHT WHALE POPULATION SURVEY & CONSERVATION CAMPAIGN, BRAZIL	FUNDACAO BRASILEIRA PARA A CONSERVACAO DA NATUREZA (FBCN) AND WWF-US
LOCAL SUPPORT FOR PROTECTED AREAS CONSERVATION COURSE & MANUAL, BRAZIL	WORLD WILDLIFE FUND
PRIMATE COMMUNITY CONSERVATION, BRAZILIAN AMAZONIA	CAMBRIDGE UNIVERSITY AND WWF-US
SURVEY OF CERRADO REGION, MINAS GERAIS., EST. PROT. AREA	FUNATURA AND WWF-US
CROCODILIAN CONSERVATION PROGRAM, BRAZILIAN AMAZON	NEW YORK ZOOLOGICAL SOCIETY AND WWF-US
BIRD SURVEYS TO ESTABLISH CONSERVATION PRIORITIES, BRAZIL FORESTS	MUSEU GOELDI AND WWF-US
FAZENDA MONTES CLAROS RESERVE MANAGEMENT/MURIQUI CONSERVATION, BRAZIL	FUNDACAO BRASILEIRA PARA A CONSERVACAO DA NATUREZA (FBCN) AND WWF-US
COASTAL FOREST REESTABLISHMENT IN SECONDARY VEGETATION, BRAZIL	UNIVERSITY OF GEORGIA AND WWF-US
EDUCATION CAMPAIGN FOR COASTAL MANATEE PRESERVATION, BRAZIL	BRAZILIAN FORESTRY DEVELOPMENT INSTITUTE (IBDF) AND WWF-US
WILDLIFE SANCTUARIES SURVEY FOR NETWORK ESTABLISHMENT, BRAZIL	FUNDACAO PRO-NATUREZA (FUNATURA) AND WWF-US
ECOLOGY OF FOUR HARDWOOD TREE SPECIES, ATLANTIC FOREST, BRAZIL	NORTH CAROLINA STATE UNIVERSITY AND WWF-US
MARINE AWARENESS PROGRAMS, CEARA STATE, BRAZIL	SUPERINTENDENCIA DO MEIO AMBIENTE, FORTALEZA, BRAZIL, AND WWF-US
WWF-US SUPPORT FOR SOS MATA ATLANTICA FOUNDATION, BRAZIL	SOS MATA ATLANTICA FOUNDATION
TROPICAL FOREST MGMT. & ROLE OF ITTO WORKSHOP, BRAZIL	SOS MATA ATLANTICA AND WWF-US
TRAVEL FUNDS FOR CONGRESS OF ETHNOBOTANY, BELEM, BRAZIL	SAN DIEGO NATURAL HISTORY MUSEUM AND WWF-US
FEEDING STUDY OF LEAR'S MACAW, BRAZIL	FEDERAL UNIV. OF MINAS GERAIS AND WWF-US
TRAINING PROGRAM, CONSERVATION OF CARYOCAR BRASILIENSE TREES, BRAZIL	THE MONTES CLAROS HEALTH DEPARTMENT, BRAZIL, AND WWF-US
DESENGANO STATE PARK FLORAL INVENTORY, BRAZIL	JARDIM BOTANICO DO RIO DE JANEIRO AND WWF-US

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PROJECT TITLE	PROJECT IMPLEMENTOR
BLACK LION TAMARIN ECOLOGY & BEHAVIOR, BRAZIL	CLAUDIO VALLADARES PADUA AND WWF-US
ATLANTIC FOREST REGION ACTION PLAN, BRAZIL	FUNDACION SOS PRO-MATA ATLANTICO AND WWF-US
BRAZILIAN TO JERSEY WILDLIFE PRES. TRUST TRAINING PROGRAM	CIBELE CARVALHO AND WWF-US
BRAZILIANS TO IUCN CROCODILE SPECIALISTS GROUP MTG., PAPUA NEW GUINEA	INSTITUTO NACIONAL DE PESQUISAS DA AMAZONIA (INPA), BRAZIL, AND WWF-US
EXTRACTIVE RESERVES CONFERENCE, BRAZILIAN AMAZON	GUSTAVO SUAREZ DE FREITAS, FPCN AND WWF-US
NPS PROTECTED AREA MANAGEMENT TRAINING FOR TRAINERS COURSE	US NATIONAL PARK SERVICE AND WWF-US
MANUAL OF THE PALMS OF LEGAL AMAZONIA, BRAZIL	NEW YORK BOTANICAL GARDEN AND WWF-US
RESEARCH ON LA CONDAMINE'S VOYAGE TO AMAZONIA, BRAZIL	MUSEU GOELDI AND WWF-US
FELLOWSHIPS TO INTERNATIONAL TOURISM CONFERENCE, VANCOUVER, CANADA	JESUS DELGADO, UNESP
SPIDER & HOWLER MONKEY CONSERVATION, BRAZIL	MUSEU GOELDI AND WWF-US
CONSERVATION DATA CENTER ESTABLISHMENT, PANTANAL, BRAZIL	STATE ENVIRONMENT FOUNDATION (FEMA) AND WWF-US
PEDRA TALHADA STATE PARK MANAGEMENT, NE BRAZIL	COORDENACAO DO MEIO AMBIENTE (ESTADO DO ALAGOAS) AND WWF-US
RELOCATION OF CONFISCATED GOLDEN PARAKEETS, BRAZIL	MUSEU GOELDI AND WWF-US
SATELLITE IMAGERY & GIS CASE STUDY, S. BAHIA, BRAZIL	UNIVERSITY OF FLORIDA AND WWF-US
SUPPORT FOR ARARAJUBA - BRAZILIAN JOURNAL OF ORNITHOLOGY	BRAZILIAN SOCIETY OF ORNITHOLOGY AND WWF-US
MURIQUI RESEARCH IN BRAZIL	BELOIT COLLEGE AND WWF-US
ENVIRONMENTAL EDUCATION PROGRAM, RIO GRANDE DO SUL, BRAZIL	SUSANA LARA RESENDE & FRANS LEEUWENBERG AND WWF-US
BUFF HEADED MARMOSET DISTRIBUTION & STATUS, BRAZIL	MUSEU DE BIOLOGIA AND WWF-US
PRESERVATION OF GUARIBA HOWLER MONKEYS, PARIBA STATE, BRAZIL	UNIVERSIDADE FEDERAL PARAIBA AND WWF-US
PRIMATE CENSUS OF GUAREQUECABA ENV. PROTECTION AREA, BRAZIL	SOCIETY FOR WILDLIFE RESEARCH AND ENV. EDUCATION (SPVS) AND WWF-US
ECONOMICS & MANAGEMENT OF VIROLA TREE SPECIES IN THE AMAZON, BRAZIL	MUSEU GOELDI AND WWF-US
CROCODILIAN TRADE CONTROL PRIORITIES MTG., PANTANAL, BRAZIL	NEW YORK ZOOLOGICAL SOCIETY AND WWF-US
WWF-US SUPPORT TO FUNDACAO BIODIVERSITAS, BRAZIL	FUNDACAO BIODIVERSITAS
SMALL MAMMAL PROJECT, POCO DAS ANTAS RESERVE, BRAZIL	UNIVERSIDADE FEDERAL DE MINAS GERAIS AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
COATI RESEARCH & EDUCATION PROGRAM, CARATINGA BIOLOGICAL STATION	ESTAAO BIOLOGICA DE CARATINGA AND WWF-US
ECOLOGY & BEHAVIOR OF HOWLER MONKEY, BRAZIL	UNIVERSIDADE DE BRASILIA AND WWF-US
BRAZILIAN TO SMITHSONIAN WILDLIFE MGMT. TRAINING COURSE	EMBRAPA AND WWF-US
PAMPAS & BROCKET DEER STUDIES, CERRADO REGION, BRAZIL	BRAZILIAN INSTITUTE FOR GEOGRAPHY AND STATISTICS (IBGE) AND WWF-US
FRESHWATER TURTLE POPULATION SURVEY, AMAZONAS STATE, BRAZIL	BRAZILIAN NATIONAL INSTITUTE FOR THE ENVIRONMENT (IBAMA) AND WWF-US
RENEWABLE RESOURCE INVENTORY & UTILIZATION TRAINING, ACRE, BRAZIL	NEW YORK BOTANICAL GARDEN AND WWF-US
INTERNATIONAL SYMPOSIUM FOR CONSERVATION OF PANTANAL, BRAZIL	STATE SECRETARIAT FOR THE ENVIRONMENT, MATO GROSSO DO SUL (SEMA-MS)
WWF-US SUPPORT FOR EDUCATION OFFICER, SOS MATA ATLANTICA, BRAZIL	FUNDACAO SOS PRO-MATA ATLANTICA
AMAZON EXTRACTIVE RESERVES RESEARCH, BRAZIL	ENVIRONMENTAL DEFENSE FUND AND WWF-US
■ CHILE	
MOLECULAR PHYLOGENY AND EVOLUTION OF COMPOSITAE OF THE JUAN FERNANDEZ ISLANDS	OHIO STATE UNIVERSITY RESEARCH FOUNDATION
SYSTEMATICS AND EVOLUTION OF CALANDRINIA SUBGENUS HIRSUTAE	WASHINGTON UNIVERSITY
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	LATIN AMERICAN PLANT SCIENCES NETWORK
FLAMINGO HABITAT PRESERVATION	WILDLIFE CONSERVATION INTERNATIONAL
HUMBOLDT PENGUIN CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
CONSERVATION & MGMT. ALTERNATIVES FOR NATIVE FORESTS, S-CENTRAL CHILE	COMITE PRO-DEFENSA DE LA FLORA Y LA FAUNA (CODEFF) AND WWF-US
CONSERVATION OF ALERCE FORESTS IN CHILE	COMITE NACIONAL PRODEFENSA DE LA FAUNA Y FLORA (CODEFF) AND WWF-US
FELLOWSHIPS TO INTERNATIONAL SEMINAR ON ARID & SEMI-ARID LANDS, U.S.	CARLOS NOTON RAMIREZ
ENVIRONMENTAL EDUCATION WORKSHOP FOR TEACHERS IN CHILE	COMIT. NACIONAL PRODEFENSA DE LA FAUNA Y FLORA (CODEFF) AND WWF-US
WWF-US SUPPORT FOR CODEFF, CHILE	COMIT. NACIONAL PRODEFENSA DE LA FAUNA Y FLORA (CODEFF)
OUTLINE DEVELOPMENT FOR ENVIRONMENTAL BLUEPRINT FOR NEW CHILEAN GOVT.	RAFAEL ASENJO AND WWF-US
■ COLOMBIA	
STUDY OF ARACEAE OF WESTERN COLOMBIA	MISSOURI BOTANICAL GARDEN
INVENTORY OF UTRIA PARK	MISSOURI BOTANICAL GARDEN

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
CONSERVATION OF NATURAL RESOURCES	MISSOURI BOTANICAL GARDEN
LA PLANADA PROJECT	MISSOURI BOTANICAL GARDEN
STUDY -- FLORA ANTIOQUIA, COLOMBIA	MISSOURI BOTANICAL GARDEN
MOSS FLORA OF COLOMBIA	NEW YORK BOTANICAL GARDEN
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	FUNDACION PUERTO RASTROJO
JESSIE SMITH NOYES FOUNDATION SUPPORT FOR COLOMBIAN SCIENTISTS	MISSOURI BOTANICAL GARDEN
ECOLOGY SEMINAR AT CAPARU BIOLOGICAL STATION IN AMAZON	FUNDACION NATURA
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	FUNDACION PRO-SIERRA NEVADA DE SANTA MARTA
RESEARCH AND PROTECTION PROGRAM IN UTRIA NATIONAL PARK	FUNDACION NATURA
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	FUNDACION NATURA
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	COLEGIO DE VILLA DE LEYVA
INVENTORIES IN THE CARPANTA BIOLOGICAL RESERVE - AN ANDEAN CLOUD FOREST	FUNDACION NATURA
AVIFAUNA SURVEY & CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
PROTECTED AREAS: CARPANTA BIOL. RESERVE, UTRIA NATIONAL PARK, QUINDIO WATERSHED	FUNDACION NATURA, COLOMBIA
INSTITUTIONAL DEVELOPMENT	FUNDACION NATURA, COLOMBIA
IMPLEMENTATION OF LA PLANADA RESERVE OPERATION PLAN, COLOMBIA	FUNDACION PARA LA EDUCACION SUPERIOR (FES) AND WWF-US
ORCHID CONSERVATION, COLOMBIA	FUNDACION PARA LA EDUCACION SUPERIOR, HERENCIA VERDE, AND WWF-US
FLORISTIC INVENTORY OF LA PLANADA, COLOMBIA	UNIVERSIDAD DE NARIO AND WWF-US
1ST COLOMBIAN ETHNOBOTANY SYMPOSIUM: PROCEEDING PUBLICATION	UNIVERSIDAD TECNOLGICA DEL MAGDALENA, UNIV. DEL CAUCA, AND WWF-US
CONSOLIDATION & MANAGEMENT OF UTRIA SOUND NATIONAL PARK, COLOMBIA	FUNDACION NATURA, INDERENA, AND WWF-US
ETHNOBOTANICAL RESEARCH, EMBERA & NOANAMA, UTRIA BAY, COLOMBIA	DR. LUIS EDUARDO FORERO PINTO AND WWF-US
COTTON TOP TAMARIN CONSERVATION EDUCATION PROGRAM, COLOMBIA	UNIVERSITY OF WISCONSIN AND WWF-US
CAHUINARI NATIONAL PARK, COLOMBIA: DEVELOPMENT OF MANAGEMENT PLAN	FUNDACION PUERTO RASTROJO AND WWF-US
BOTANICAL GARDEN DEVELOPMENT, SIBUNDOY VALLEY, COLOMBIA	FUNDACION JARDIN BOTANICO "LEANDRO AGREDA" AND WWF-US
PRIMATE ECOLOGY & ETHNOBOTANY IN COLOMBIAN AMAZON	DRS. THOMAS AND SARA DEFLER AND WWF-US
WWF-US INSTITUTIONAL SUPPORT FOR HERENCIA VERDE, COLOMBIA	FUNDACION HERENCIA VERDE

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
WWF-US SUPPORT FOR FUNDACION PUERTO RASTROJO, COLOMBIA	FUNDACION PUERTO RASTROJO
KUNA TRAINING SUPPORT AT LA PLANADA RESERVE, COLOMBIA	PROYECTO PEMASKY AND WWF-US
SUSTAINABLE DEVELOPMENT & FOREST CONSERVATION, ALTO QUINDIO REGION	FUNDACION HERENCIA VERDE AND WWF-US
NATURAL RESOURCES USE STUDY BY AWA INDIANS, COLOMBIA	FUNDACION PARA LA EDUCACION SUPERIOR (FES) AND WWF-US
PLANTS OF THE NORTHWEST AMAZON: BOOK PUBLICATION	WORLD WILDLIFE FUND
■ ECUADOR	
FERN GENUS ELAPHOGLOSSUM FOR FLORA OF ECUADOR	NEW YORK BOTANICAL GARDEN
STUDY OF UPPER RIO NAPO, ECUADOR	MISSOURI BOTANICAL GARDEN
LAURACEAE OF ECUADOR STUDY	MISSOURI BOTANICAL GARDEN
ECOLOGY AND BEHAVIOR OF DARWIN'S FINCHES ON GALAPAGOS ISLANDS	PRINCETON UNIVERSITY
DEBT-FOR-NATURE SWAP	THE NATURE CONSERVANCY
COLLAB. RESEARCH PROG., ECUADOR, AND SUPPORT OF QUITO NATURAL SCIENCE MUSEUM	ACADEMY OF NATURAL SCIENCES
ENVIRONMENTAL AWARENESS/EDUCATION WORKSHOP	PEACE CORPS
NGO SUPPORT & CONSERVATION FIELD RESEARCH	WILDLIFE CONSERVATION INTERNATIONAL
PINZON ISLAND GIANT TORTOISE CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
DEBT FOR NATURE SWAP -- ECUADOR	THE NATURE CONSERVANCY
GALAPAGOS ISLANDS CAMPAIGN	THE NATURE CONSERVANCY
MAQUIPUCANA RESERVE	FUNDACION MAQUIPUCANA AND THE NATURE CONSERVANCY
DIVERSITY OF CROP GENETIC RESOURCES IN SUMACO NATIONAL PARK	FUNDACION NATURA, THE NATURE CONSERVANCY, USDA GERMPLASM SERVICES LAB
PURCHASE OF DEBT SWAP, GALAPAGOS, ECUADOR	CHARLES DARWIN RESEARCH STATION AND WWF-US
PURCHASE OF DEBT SWAP, MAINLAND ECUADOR	FUNDACION NATURA AND WWF-US
WWF-US SUPPORT FOR FUNDACION NATURA, ECUADOR	FUNDACION NATURA
SUPPORT TO NATIONAL STRATEGY FOR PROTECTED AREA SYSTEM, ECUADOR	FUNDACION NATURA AND WWF/I
CUYABENO FAUNAL RESERVE, ECUADOR: MANAGEMENT PLAN IMPLEMENTATION	ECUADOR NATIONAL PARK SERVICE AND WWF-US
BINATIONAL AWA PROJECT, ECUADOR & COLOMBIA	CONFEDERACION DE NACIONALIDADES INDIGENAS DEL ECUADOR (CONAIE), WWF-US
NATIONAL CONSERVATION AWARD, ECUADOR	FUNDACION NATURA AND WWF-US
MARINE TURTLE FISHING & COMMERCIALIZATION STUDY, ECUADOR	FUNDACION NATURA AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
BOSQUE PROTECTOR MINDO-NAMBILLO ENVIRONMENTAL EDUCATION PROGRAM	GRUPO ECOLOGICO TIERRA VIVA AND WWF-US
■ FALKLAND ISLANDS	
WWF-US SUPPORT FOR FALKLAND ISLANDS FOUNDATION	FALKLAND ISLANDS FOUNDATION
■ PARAGUAY	
FLORISTIC INVENTORY OF THREE CORDILLERAS, PARAGUAY	MISSOURI BOTANICAL GARDEN
FLORISTIC INVENTORY, THREE MOUNTAINS, PARAGUAY	MISSOURI BOTANICAL GARDEN
SYSTEMATIC AND EVOLUTIONARY STUDIES IN PLANT FAMILY ONAGRACEAE	MISSOURI BOTANICAL GARDEN
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	FUNDACION MOISES BERTONI
GENERAL SUPPORT, FOREST PROTECTION PROJECT IN MBARACAYU	FUNDACION MOISES BERTONI
WORKSHOP ON ENVIRONMENTAL EDUCATION IN MUSEUMS & BUFFER ZONES	PEACE CORPS
ECOLOGY & CONSERVATION OF THE CHACOAN PECCARY	WILDLIFE CONSERVATION INTERNATIONAL
MBARACAYU NATURE RESERVE PROJECT	THE NATURE CONSERVANCY, FUNDACION MOISES BERTONI
PARAGUAY BIOLOGICAL INVENTORY	US FISH AND WILDLIFE SERVICE
LAND MANAGEMENT AND PARK PROTECTION	FUNDACION MOISES BERTONI
TREBOL TREE RECOVERY PROJECT, PARAGUAY	FUNDACION PHYSIS AND WWF-US
PARAGUAYAN FUNDRAISING/TRAINING VISIT TO UNITED STATES	AIDA LUZ AQUINO SHUSTER AND WWF-US
CHACO NATIONAL PARK PLANNING WORKSHOP, PARAGUAY	FUNDACION MOISES BERTONI AND WWF-US
CERRA CORA NATIONAL PARK ENVIRONMENTAL EDUCUCATION& FORESTRY EXTENSION	DIRECCION DE PARQUES NACIONALES, PARAGUAY, AND WWF-US
SUPPORT FOR NATIONAL BIOLOGICAL INVENTORY PROGRAM, PARAGUAY	INVENTARIO BIOLOGICO NACIONAL AND WWF-US
BIOLOGICAL INVENTORY, MBARACAYU WILDLAND PROJECT, PARAGUAY	WORLD WILDLIFE FUND
DEFENSORES DEL CHACO NATIONAL PARK MANAGEMENT, PARAGUAY	DIRECCION DE PARQUES NACIONALES AND WWF-US
■ PERU	
FERN GENUS ELAPHOGLOSSUM FOR FERN FLORA OF PERU	NEW YORK BOTANICAL GARDEN
TROPICOS DATA BANK, PERU	MISSOURI BOTANICAL GARDEN
LAURACEAE STUDIES NEAR IQUITOS, PERU	MISSOURI BOTANICAL GARDEN
SPECIATION AND BIOGEOGRAPHY OF ANURAN AMPHIBIANS IN CENTRAL ANDES	UNIVERSITY OF KANSAS - MAIN CAMPUS

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
SYSTEMATICS AND EVOLUTION OF COLUMNEA SECTION PENTADENIA (GESNERIACEAE)	UNIVERSITY OF WISCONSIN - MADISON
ZOOLOGICAL INVENTORY OF RIO ABISEO NATIONAL PARK	UNIVERSITY OF COLORADO FOUNDATION
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	SOCIEDAD PERUANA DE DERECHO AMBIENTAL
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	ASOCIACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	ASOCIACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (APECO)
INSTITUTIONAL SUPPORT FROM MACARTHUR FOUNDATION	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN)
STUDY PLAN FOR INDIAN COMMUNAL RESERVES AND CONSERVATION AREAS FOR MANU PARK	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA
3RD PARK RANGER TRAINING COURSE LACHAY NATIONAL RESERVE	NATIONAL PARK SERVICE
ECOLOGY OF AMAZON PARROTS & PARKS RECOMMENDATIONS	WILDLIFE CONSERVATION INTERNATIONAL
SOUTH AMERICAN FUR SEAL ECOLOGY & CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
HUMBOLDT PENGUIN CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
NOYES FOUNDATION FELLOWSHIPS	WILDLIFE CONSERVATION INTERNATIONAL
FLORISTIC INVENTORY OF PLEISTOCENE FOREST REFUGIA IN NORTHERN PERU	FIELD MUSEUM OF NATURAL HISTORY
PTERIDOPHYTA OF PERU	FIELD MUSEUM, HARVARD UNIVERSITY
YANACHGA-CHEMILLEN NATIONAL PARK	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA AND THE NAT. CONSERVANCY
THE NATURE CONSERVANCY SUPPORT FOR FUND. PERUANA PARA LA CONSERV. DE LA NATUR.	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN)
KATYDIDS OF THE PERUVIAN AMAZON BASIN	SMITHSONIAN INSTITUTION AND UNIVERSITY OF FLORIDA
ANTBIRD ECOLOGY IN AMAZONIAN PERU	MUSEUM OF NATURAL SCIENCE, LOUISIANA STATE U.
NEOTROPICAL BIOLOGICAL DIVERSITY: AN INITIAL INTEGRATED STUDY	MUS. OF NAT. HISTORY-KANSAS U., MO BOT. GDN, HARVARD U., MUSEO DE H. NATUR.-PERU
MANAGEMENT OF MANU NATIONAL PARK, PERU	FUND. PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN) AND WWF-US
APECO-RED TRAINING WORKSHOP & SUPPORT PROJECT, PERU	ASOC. PERUANA PARA LA CONSERVACION DE LA NATURALEZA (APECO) AND WWF-US
RIO ABISEO NATIONAL PARK PROTECTION & MANAGEMENT, PERU	FPCN, SOC. PERUANA DE DERECHO AMBIENTAL, AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
PACAYA SAMIRIA NATIONAL RESERVE, PERU	LOCAL CMTE. FOR DEV. OF THE PACAYA-SAMIRIA RES. (COREPASA) AND WWF-US
RAISING CONSERVATION AWARENESS AMONG OPINION LEADERS, PERU	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA AND WWF-US
FPCN SUPPORT FOR PROJECT COORDINATOR, PERU	FUNDACION PERUANO PARA LA CONSERVACION DE LA NATURALEZA AND WWF-US
PUBLIC AWARENESS/EXTENSION PROGRAM, RIO ABISEO NATIONAL PARK, PERU	ASOCIACION PERUANO PARA LA CONSERVACION (APECO) AND WWF-US
ENDANGERED WILDLIFE SPECIES UPDATE, PERU: PUBLICATION	VICTOR PULIDO
PLANNING & MANAGEMENT OF CERROS DE AMOTAPE NATIONAL PARK, PERU	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA AND WWF-US
LAKE TITICACA RESERVE MANAGEMENT, PERU	ASOCIACION PERUANA PARA LA CONSERVACION (APECO) AND WWF-US
STUDENT RESEARCH & TRAINING IN MANU NATIONAL PARK, PERU	PRINCETON UNIVERSITY AND WWF-US
TRAINING WORKSHOPS FOR PARK OFFICIALS, PERU	WORLD WILDLIFE FUND
TEACHER'S ENVIRONMENTAL EDUCATION COURSE, PERU	ASOCIACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA AND WWF-US
TRAINING & BIOLOGICAL INVENTORY, MANU NATIONAL PARK, PERU	SMITHSONIAN INSTITUTION, APECO, AND WWF-US
ETHNOBOTANY OF CHINCHERO, PERU: PUBLICATION	NATIONAL ACADEMY OF SCIENCES AND WWF-US
MANAGEMENT OF AMPAY FOREST SANCTUARY, PERU	INSTITUTO DE DESARROLLO Y MEDIO AMBIENTE (IDMA) AND WWF-US
MARINE TURTLE FISHERY PROJECT, PERU	ASOCIACION DE ECOLOGIA Y CONSERVACION (ECCO) AND WWF-US
SUSTAINABLE MANAGEMENT OF TROPICAL FORESTS PROGRAM, PERU	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN), WWF-US
PROTECTION OF PARACAS NATIONAL RESERVE, PERU	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN), WWF-US
SUSTAINABLE DEVELOPMENT IN FOREST RESERVES, LORETO, PERU	YALE UNIVERSITY AND WWF-US
APECO NEWSLETTER PUBLICATION ON FUNDRAISING ACTIVITIES, PERU	ASOC. PERUANA PARA LA CONSERVACION DE LA NATURALEZA (APECO) AND WWF-US
SUSTAINABLE USE OF FORESTS & WILDLIFE, MANU RESERVE, PERU	FUNDACION PERUANA PARA LA CONSERVACION DE LA NATURALEZA (FPCN), WWF-US
ENVIRONMENTAL EDUCATION PROGRAM, MANU NATIONAL PARK, PERU	ASOC. PERUANA PARA LA CONSERVACION DE LA NATURALEZA (APECO) AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
SURINAME	
WWF-US SUPPORT FOR STINASU, SURINAME	STICHTING NATUURBEHOUD SURINAME (STINASU)
TECHNICAL ADVISOR SUPPORT TO SURINAME FOREST SERVICE	SURINAME FOREST SERVICE, STICHTING NATUURBEHOUD SURINAME, AND WWF-US
URUGUAY	
TRAVEL TO FIRST LATIN AMERICAN CONGRESS ON ECOLOGY	UNIVERSITY OF GEORGIA RESEARCH FOUNDATION
VARIOUS	
MONOGRAPHIC STUDIES ON COLLYBIA IN TROPICAL SOUTH AMERICA	NEW YORK BOTANICAL GARDEN
SYSTEMATICS & EVOLUTIONARY BIOLOGY OF THE BRUCHIDAE OF NORTHERN S. AMERICA	NORTHERN ARIZONA UNIVERSITY
CHEMOSYSTEMATICS AND PHYLOGENETICS OF SOUTH AMERICAN XANTHOPARMELIAE	ARIZONA STATE UNIVERSITY
SYSTEMATICS AND EVOLUTION OF COLUMNEA SECTION PENTADENIA (GESNERIACEAE)	UNIVERSITY OF WISCONSIN - MADISON
TRAINING FOR LATIN AMERICAN SCIENTISTS TO INVESTIGATE NORTHWEST SOUTH AMERICA	MISSOURI BOTANICAL GARDEN
INVENTORY IN ANDEAN REGION	NEW YORK BOTANICAL GARDEN
SUPPORT FOR TRAFFIC (SOUTH AMERICA)	WORLD WILDLIFE FUND
WILDLIFE MANAGEMENT GRADUATE PROGRAM, UNA, LA MOLINA, PERU	UNIVERSIDAD NACIONAL AGRARIA AND WWF-US
SUPPORT FOR BOOK ON SOUTH AMERICAN MAMMALS	THE FLORIDA STATE MUSEUM AND WWF-US
SUPPORT FOR ANDEAN TRAINING CENTER FOR WILDLAND MANAGERS	CATIE (CENTRO AGRONOMICO TROPICAL DE INVESTIG. Y ENSENANZA) AND WWF-US
VARIOUS (AMAZONIA)	
BRAZIL WORKSHOP TO IDENTIFY AREAS OF PRIORITY FOR CONSERVATION IN AMAZON REGION	NEW YORK BOTANICAL GARDEN
FELLOWSHIPS & TRAINING FOR NATURAL RESOURCE PROFESSIONALS FROM WESTERN AMAZONIA	UNIVERSITY OF FLORIDA, PROGRAM FOR STUDIES IN TROPICAL CONSERVATION
VARIOUS (ARGENTINA, BOLIVIA, CHILE)	
REGIONAL FLAMINGO CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
VARIOUS (ARGENTINA, CHILE)	
SYSTEMATICS OF THE GENUS MULINUM PERS.	OHIO STATE UNIVERSITY RESEARCH FOUNDATION

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
■ VARIOUS (BOLIVIA, COLOMBIA, ECUADOR, PERU)	
FOREST MANAGEMENT PROGRAM WITH TWO REGIONAL ASSOCIATIONS OF INDIGENOUS PEOPLES	CULTURAL SURVIVAL
PARKS IN PERIL PROGRAM IN SEVEN HIGH PRIORITY NATIONAL PARKS	THE NATURE CONSERVANCY
SMALL GRANTS TO BOTANICAL INSTITUTIONS IN SOUTH AMERICA	MISSOURI BOTANICAL GARDEN
■ VARIOUS (BOLIVIA, COLOMBIA, PERU, VENEZUELA)	
TRAINING, FIELD SURVEYS, AND IMPROVED PLANNING AND MANAGEMENT OF RESERVES	CONSERVATION INTERNATIONAL
■ VARIOUS (BOLIVIA, ECUADOR, PERU)	
BIOLOGICAL DIVERSITY IN LATIN AMERICA	SMITHSONIAN INSTITUTION - MUSEUM OF NATURAL HISTORY, AND OTHERS
■ VARIOUS (BOLIVIA, PERU)	
TOWARD A TREATMENT OF THE PALMAE FOR FLORA NEOTROPICA	NEW YORK BOTANICAL GARDEN
■ VARIOUS (CHILE, COLOMBIA)	
BIOCHRONOLOGY AND GEOCHRONOLOGY OF MIDDLE MIOCENE LAND MAMMAL AGE	DUKE UNIVERSITY - SCHOOL OF MEDICINE
■ VARIOUS (CHILE, PERU)	
FLORISTIC INVENTORY OF THE LOMAS FORMATIONS OF COASTAL PERU AND CHILE	FIELD MUSEUM OF NATURAL HISTORY
■ VARIOUS (COLOMBIA, COSTA RICA, ECUADOR)	
HISTORICAL BIOGEOGRAPHIC RELATIONSHIPS OF CENTRAL AND SOUTH AMERICA	UNIVERSITY OF MIAMI
■ VARIOUS (COLOMBIA, ECUADOR, PERU)	
CONSERVATION AND SUSTAINABLE DEVELOPMENT IN SEVEN PRIORITY AREAS	WORLD WILDLIFE FUND
■ VARIOUS (COLOMBIA, ECUADOR, PERU, VENEZUELA)	
RESEARCH GRANTS FOR DEVELOPING COUNTRY STUDENTS	WILDLIFE CONSERVATION INTERNATIONAL
REGIONAL STUDENT GRANTS PROGRAMS	WILDLIFE CONSERVATION INTERNATIONAL
■ VARIOUS (COLOMBIA, PERU)	
BOTANICAL SURVEYS IN THREE WESTERN AMAZONIAN SITES	MISSOURI BOTANICAL GARDEN

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
VARIOUS (ECUADOR, PERU)	
BIOGEOGRAPHIC RESEARCH IN THE CEJA DE LA SELVA ZONE OF AMAZONIAN	UNIVERSITY OF COLORADO
VARIOUS (GUYANA, FRENCH GUIANA, SURINAM)	
BIOLOGICAL DIVERSITY OF THE GUIANAS	SMITHSONIAN INSTITUTION - NATIONAL MUSEUM OF NATURAL HISTORY
VENEZUELA	
SURVEY OF THE NATURAL RESOURCES OF THE VENEZUELAN GUAYANA REGION	NEW YORK BOTANICAL GARDEN
FLORA OF VENEZUELAN GUAYANA	MISSOURI BOTANICAL GARDEN
VENEZUELAN GUYANA PROJECTS	MISSOURI BOTANICAL GARDEN
GENETIC STRUCTURE IN COOPERATIVE SOCIETIES	PURDUE RESEARCH FOUNDATION
GENETIC DETERMINATION OF PARENTAGE IN COOPERATIVE GROUPS	PURDUE RESEARCH FOUNDATION
CARBON AND NUTRIENT RELAT. AMONG OLIGOTROPHIC FOREST COMMUNITIES IN AMAZON BASIN	UNIVERSITY OF WISCONSIN - MADISON
GENERAL SUPPORT FROM JESSE SMITH NOYES FOUNDATION	PRO VITA ANIMALIUM
SUPPORT FOR CONSERVATION POLICY	SOCIEDAD CONSERVACIONISTA AUDUBON DE VENEZUELA
MANAGEMENT PLAN FOR CINARUCO-CAPANAPARO NATIONAL PARK IN WESTERN SAVANNA REGION	BIOMA
ORINOCO CROCODILE CAPTIVE BREEDING	WILDLIFE CONSERVATION INTERNATIONAL
GUANS, CURASSOWS & OILBIRD STUDIES	WILDLIFE CONSERVATION INTERNATIONAL
FLAMINGOS & COASTAL HABITAT CONSERVATION	WILDLIFE CONSERVATION INTERNATIONAL
OILBIRD GENETICS	WILDLIFE CONSERVATION INTERNATIONAL
SPECTACLED BEAR SURVEY & EDUCATION	WILDLIFE CONSERVATION INTERNATIONAL
COMPREHENSIVE PARROT SURVEY	WILDLIFE CONSERVATION INTERNATIONAL
PAN AMERICAN WILDLIFE EDUCATION CONFERENCE	WILDLIFE CONSERVATION INTERNATIONAL
PARK PROTECTION, CONSERVATION DATA CENTER, AND INSTITUTION BUILDING	THE NATURE CONSERVANCY
ESTABLISHING PRIORITIES FOR ORCHID CONSERVATION IN VENEZUELA	NATIONAL BOTANICAL GARDEN, VENEZUELA, AND WWF-US
WWF-US SUPPORT FOR FUDENA	FUNDACION PARA LA DEFENSA DE LA NATURALEZA (FUDENA)
MARGARITA ISLAND CAPUCHIN MONKEY CONSERVATION, VENEZUELA	INSTITUTO DE ZOOLOGIA AND WWF-US

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR

WORLDWIDE

■ VARIOUS

SYSTEMATICS SYMPOSIUM	MISSOURI BOTANICAL GARDEN
PLANT EXTRACT TESTING AGREEMENT	MISSOURI BOTANICAL GARDEN
POST-DOCTORAL WORK, TROPICAL BOTANY	MISSOURI BOTANICAL GARDEN
POST-DOCTORAL WORK IN TROPICAL BOTANY	MISSOURI BOTANICAL GARDEN
DIVERSITY PATTTERNS AND FLORISTIC COMPOSITIONS	MISSOURI BOTANICAL GARDEN
INDEX TO PLANT CHROMOSOME NUMBERS	MISSOURI BOTANICAL GARDEN
INTERNATIONAL CONFERENCE ON THE SYSTEMATICS OF EUPHORBIACEAE	MISSOURI BOTANICAL GARDEN
LINNEAN TYPIFICATION PROJECT	MISSOURI BOTANICAL GARDEN
ONAGRACEAE STUDY	MISSOURI BOTANICAL GARDEN
TROPICAL BIOLOGY FILM PROJECT	MISSOURI BOTANICAL GARDEN
PLANT GENETIC DIVERSITY PROJECT	MISSOURI BOTANICAL GARDEN
WILDLIFE CONSERVATION AND MANAGEMENT TRAINING PROGRAM	SMITHSONIAN INSTITUTION - NATIONAL ZOO CONSERVATION AND RESEARCH CENTER
ZOO BIOLOGY TRAINING PROGRAM	SMITHSONIAN INSTITUTION
STIPENDS FOR DEVELOPING COUNTRY CONSERVATIONISTS	WILDLIFE CONSERVATION INTERNATIONAL
INTERNATIONAL WILDLIFE MANAGEMENT AND TRAINING PROGRAM	SMITHSONIAN INSTITUTION
INTERNATIONAL TRAINING PROGRAM FOR ENDANGERED SPECIES CONSERVATIONISTS	WILDLIFE PRESERVATION TRUST INTERNATIONAL, INC.
PROGRAM FOR STUDIES IN TROPICAL CONSERVATION SCHOLARSHIP PROGRAM	UNIVERSITY OF FLORIDA
USE OF RAPTORS AS HABITAT HEALTH INDICATORS	PEREGRINE FUND, INC.
DATABASE DEVELOPMENT TO ASSIST BIOSPHERE RESERVE MANAGEMENT	THE NATURE CONSERVANCY
W. ALTON JONES SUPPORT FOR THE BOTANIC GARDENS CONSERVATION SECRETARIAT	IUCN - THE WORLD CONSERVATION UNION
DEBT-FOR-NATURE SWAP INITIATIVES	SMITHSONIAN INSTITUTION
INTERNATIONAL SEMINAR ON MARINE AND COASTAL PARK AND PROTECTED AREAS	NATIONAL PARK SERVICE
ENVIRONMENTAL EDUCATION CURRICULUM MANUAL FOR TEACHERS	PEACE CORPS
BOOKS AND AUDIO-VISUALS FOR TRAINING / ND USE IN THE FIELD	PEACE CORPS
PEW CHARITABLE TRUST FIELD TRAINING GRANTS	WILDLIFE CONSERVATION INTERNATIONAL
SYSTEMATIC AND PHYLOGENETIC RELATIONS COMMUNITY STRUCTURE AND VARIATION	FIELD MUSEUM OF NATURAL HISTORY AND IN-COUNTRY COUNTERPART MUSEUMS

1989 Biological Diversity Research and Conservation Activities

PROJECT TITLE	PROJECT IMPLEMENTOR
FOSSIL AND RECENT VERTEBRATES/INSULAR EVOLUTION	SAN DIEGO NATURAL HISTORY MUSEUM
SYSTEMATIC STUDIES ON ANTS	UNIVERSITY OF CALIFORNIA, DAVIS
TRAINING (EGYPTIAN, PAKISTAN, INDIAN WILDLIFE PERSONNEL)	US FISH AND WILDLIFE SERVICE
CONSERVATION OF BIOLOGICAL DIVERSITY	WORLD WILDLIFE FUND-US, WORLD RESOURCES INSTITUTE, THE NATURE CONSERVANCY
PROGRAM SUPPORT FOR USAID/S&T COOPERATIVE AGREEMENT	WORLD WILDLIFE FUND-US
WWF-US SUPPORT FOR NRDC INTERNATIONAL PLANT TRADE PROGRAM	NATURAL RESOURCES DEFENSE COUNCIL (NRDC)
LONG TERM RESEARCH INSTITUTE SUPPORT	ROGER PAYNE
BIRD TRADE STUDY ON U.S. SYSTEM & CONTROLS	WORLD WILDLIFE FUND
U.S. IMPLEMENTATION & ENFORCEMENT STUDY OF CITES	WORLD WILDLIFE FUND
IUCN SUPPORT FROM WWF-US	IUCN-WORLD CONSERVATION UNION
WWF-US SUPPORT FOR WWF TROPICAL FOREST CONSERVATION OFFICER	WORLDWIDE FUND FOR NATURE
WWF TREATIES OFFICER SUPPORT	WORLDWIDE FUND FOR NATURE
INTERNATIONAL - SUPPORT FOR WORLD CONSERVATION STRATEGY (WCS-90S)	WORLDWIDE FUND FOR NATURE
INTERNATIONAL - COLLABORATION WITH THE WORLD SCOUT MOVEMENT	WORLD SCOUT BUREAU AND WWF/I
ATTENDEES TO 7TH MTG. OF CITES CONFERENCE, LAUSANNE	CITES SECRETARIAT AND WWF-US
WWF-US SUPPORT FOR XII INTERNATIONAL PRIMATOLOGICAL CONGRESS, BRAZIL	UNIV. DO BRASILIA
WWF-US TRAVEL GRANTS FOR PLANT SPECIALISTS TO CONFERENCES, ETC.	VARIOUS
IUCN/SSC MARINE TURTLE WORKSHOP TRAVEL GRANTS, COSTA RICA	IUCN-WORLD CONSERVATION UNION/SSC AND WWF-US
WWF-US SUPPORT FOR THE RAMSAR WETLANDS CONVENTION	THE RAMSAR BUREAU
CENTER FOR CONSERVATION BIOLOGY RESEARCH ON EXTINCTION RATES	CENTER FOR CONSERVATION BIOLOGY, STANFORD UNIVERSITY, AND WWF-US
WWF-US SUPPORT FOR GNUSLETTER, ANTELOPE SPECIALIST GROUP	ANTELOPE SPECIALIST GROUP, IUCN SPECIES SURVIVAL COMMISSION
INTERNATIONAL CONSULTANCIES, US FISH AND WILDLIFE & NATIONAL PARK SERV	U.S. FISH & WILDLIFE SERVICE AND WWF-US
■ VARIOUS (AFRICA, PANAMA)	
PHYLOGENETIC RELAT. OF LAND HERMIT CRABS (DECAPODA: ANOMURA: COENOBITIDAE)	NSF INDIVIDUAL AWARD TO HARVEY

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WORLD RESOURCES INSTITUTE

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The World Resources Institute (WRI) is a policy research center created in late 1982 to help governments, international organizations, and private business address a fundamental question: How can societies meet human needs and nurture economic growth without undermining the natural resources and environmental integrity on which life, economic vitality, and international security depend?

Two dominant concerns influence WRI's choice of projects and other activities:

The destructive effects of poor resource management on economic development and the alleviation of poverty in developing countries; and

The new generation of globally important environmental and resource problems that threaten the economic and environmental interests of the United States and other industrial countries and that have not been addressed with authority in their laws.

The Institute's current areas of policy research include tropical forests, biological diversity, sustainable agriculture, energy, climate change, atmospheric pollution, economic incentives for sustainable development, and resource and environmental information.

WRI's research is aimed at providing accurate information about global resources and population, identifying emerging issues, and developing politically and economically workable proposals.

In developing countries, WRI provides field services and technical program support for governments and non-governmental organizations trying to manage natural resources sustainably.

WRI's work is carried out by an interdisciplinary staff of scientists and experts augmented by a network of formal advisors, collaborators, and cooperating institutions in 50 countries.

WRI is funded by private foundations, United Nations and governmental agencies, corporations, and concerned individuals.