

Island Resources Foundation

"Environmental planning for small island development"

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1994: The Year In Review

Small islands contribute almost none of the greenhouse gasses that cause global warming, yet they have to live with the very real risks associated with global climate change and sea level rise. The irony is that the least responsible are the most vulnerable.

Global Gathering in Barbados on the Fate of Small Island States

As the islands go, so goes the planet This was the oft-repeated refrain at the 1994 UN Global Conference on the Sustainable Development of Small Island Developing States, the most important assembly on the environment and development since the Earth Summit in Rio de Janeiro two years ago. As suggested by the Minister of the Environment from Barbados (host country to the conference), the size and discrete boundaries of small island states mean that they can, "as microcosms of the rest of the world, act as real life laboratories in the transition to sustainable development."

While blessed with a richness of natural beauty, the small size of the world's 41 small island developing states (SIDS) has made most of them environmentally and economically vulnerable. Small may be beautiful, but size also severely limits the resource base of most SIDS.

Additionally, many of the world's most serious environmental crises are at their most acute in SIDS. As quoted in the UNDP's *Choices*, three-quarters of all known animal extinctions in recent history have taken place on small islands. Proportionately, SIDS are losing forests far faster than larger continental countries. Small endowments of topsoil

(continued ISLANDS, page 6)



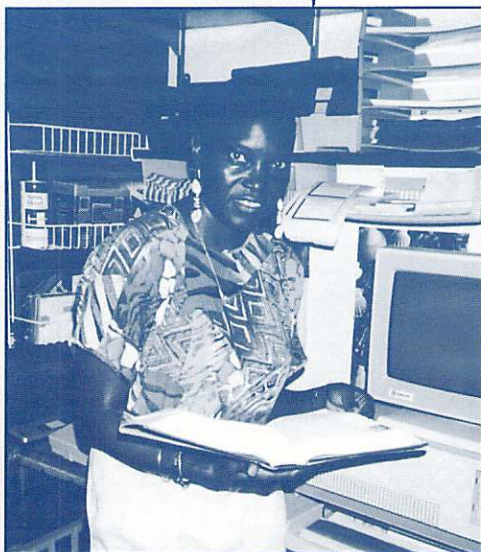
Good News, Better News ... and Bad News

It's good news that in recent years the IRF library has expanded substantially, now comprising over 10,000 documents, books, unpublished reports, maps and photographs on insular ecosystems, historic and scenic places, shorelines, species and other resources undergoing change. In the Caribbean, the IRF collection is unmatched.

The better news is that to help keep track of this expanding collection, the Foundation and the Eastern Caribbean Center (ECC) at the University of the Virgin Islands are cataloguing the ECC and IRF libraries using the computer-based CDS-ISIS system. Funding for this enormous job -- which has been underway for the last 12 months -- was provided by the MacArthur Foundation.

The two professional librarians overseeing the cataloguing process are Jennifer Jackson, St. Croix campus librarian at the University of the Virgin Islands, and Shirley Lincoln, head of technical services for the Virgin Islands public library system.

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Jennifer Jackson, U. of the Virgin Islands librarian who is assisting in the computer cataloguing of IRF's reference collection

1994 Highlights IRF's Special "Niche"

Island Resources Foundation is a donor-supported, development assistance organization with a special interest in helping to protect and enhance the environments of small island states and territories, especially those in tropical areas. IRF is also a service organization that brings technical and professional planning skills to island governments and NGOs engaged in the difficult task of shaping policies and practices for the management of insular ecosystems anywhere.

As such, the Foundation is different from most membership-based environmental groups or private voluntary organizations involved in overseas assistance work (although we do have members and are registered as a Private Voluntary Organization). Key to IRF's work has been its recognition that, in small island states, *information* is the basis for informed decision making about the environment. Linked to this conviction has been IRF's ongoing emphasis on problem solving, technical skills building, institution strengthening, and research to underpin resource management decisions.

1994 demonstrates IRF's adherence to these principles. Highlights of the year's programs are presented below.

Addressing Regional Problems Through Better Planning

Coastal and marine environments in the Caribbean are heavily exploited and remain at risk. Management strategies have proven inadequate, and continuing damage to resources and communities has devastated whole stretches of shoreline, marginalizing them for human enjoyment and productive enterprises.

Responding to regional concerns, UNEP's Caribbean Environment Program (CEP) in Jamaica has undertaken preparation of a framework for facilitating integrated coastal management in the Caribbean. To carry out this task, the Foundation's president, Edward Towle, was asked to prepare a set of draft guidelines which will be considered at a technical meeting convened by UNEP early in 1995.

In a related effort, UNEP/CEP encouraged the Foundation to look at the problem of soil erosion as it affects the insular Caribbean. The output is a practical handbook for planners, engineers, landscape architects, construction supervisors and others engaged in site development. It provides a description of specific *best management practices* (BMPs) designed to control sedimentation and reduce environmental damage.

The handbook will be released by UNEP/CEP in early 1995 under title of *Guidelines for Sediment Control Practices in the Insular Caribbean* (Technical Report No. 32).

NGO Partnerships: Support for a Private Sector Voice

One of the Foundation's most successful programs is its eight-year-old assistance program for non-governmental organizations (NGOs) in the Eastern Caribbean. Through this long-term initiative, IRF supports the development of private sector environmental groups and influences the premise that a larger role for local people in national decision making is critical for balanced development. "Governments make political judgments," observed IRF's president recently, "but until someone raises the social and environmental implications of those judgments, they tend to stay political."

Primary funding for IRF's NGO program has been provided under a six-year Cooperative Agreement with USAID signed in 1989. With this major source of support ending in 1995, IRF will be evaluating options for this important assistance program, which currently includes 16 NGO partners in the Eastern Caribbean.

Teamwork Strategy for Problem Solving

Supported in part by a grant from the John D. and Catherine T. MacArthur Foundation, IRF serves as the secretariat for the Virgin Islands Resource Management Cooperative (VIRMC). The Cooperative is a collaboration of public and private resource management and environmental protection institutions focusing at present on:

- coordinated research,
- improved resource management, and
- development of geographic information systems

for the wider Virgin Islands community (including the British Virgin Islands and Puerto Rico).

VIRMC emerged in recognition of the need for a cooperative approach to the management of natural resources in the Virgin Islands. Its goal is to expand local institutional capacity for addressing the difficult environment and resource use challenges facing the Virgin Islands. The grant from the MacArthur Foundation provides base funding for the VIRMC secretariat at IRF and for small grants to support collaborative activities.

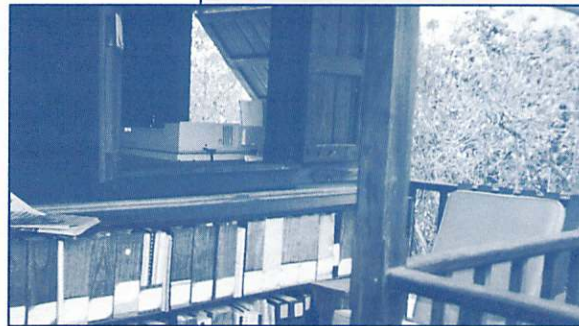
(continued VIRMC, page 4)

(LIBRARY, continued from page 2)

Eventually, the electronic catalogue of IRF's reference library will be made available through the *Internet* to researchers around the world, especially in the Caribbean.

The bad news is that as the collection grows, it has totally outstripped the Foundation's ability to properly house it -- particularly in the event of another major storm like Hurricane Hugo. Since Hugo five years ago, IRF has increased the size of its library by over a third.

As is clear in photos below, it is no longer possible to properly store or protect major documents. The wooden structure of the IRF headquarters building in St. Thomas further increases the risks associated with continued housing of this valuable collection at the current site.



Library materials stored on exposed gallery



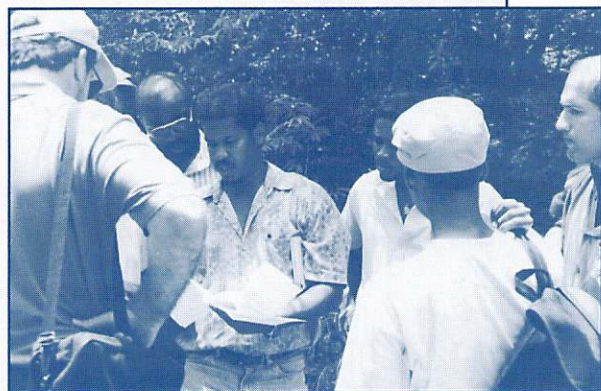
Maps and other documents at risk in a semi-enclosed storage area adjacent to IRF's office building

IRF's Board of Trustees is exploring options for developing the library and for addressing more immediate problems of housing and access.

NEW GIS HARDWARE FOR VIRMC INSPECTED AT TNC HEADQUARTERS



(top photo) TNC's Carol Mayes (left) and Ayanna McKay flank IRF's Ed Towle and Bruce Horwith



St. Lucian Laurent Jn-Pierre, largely responsible for development of his country's national herbarium, answers participant questions at IRF herbaria development workshop in Antigua

An early area of cooperation has been in the development of a geographic information system (GIS) to support VIRMC activities and the associated programs of VIRMC members. The basic platform for this system, including donated ArcCAD and ArcView software, was established by IRF at the Virgin Islands office of The Nature Conservancy (TNC), a VIRMC institutional partner.

IRF views the VIRMC GIS system as important both for its resource management applications in the Virgin Islands, and as a demonstration and training opportunity for potential geographic information system designers and users in the Wider Caribbean.

Defining a Biodiversity Program for the Eastern Caribbean

Biodiversity from an Eastern Caribbean Perspective. The small size of the Eastern Caribbean belies the rich biodiversity it supports. Typical of islands, the biota of the Lesser Antilles contains a relatively high percentage of single-island and regional endemics which, by definition, occur only here. The islands and their surrounding waters also support many migratory animals -- endangered marine turtles, more than two dozen species of whales and dolphins, and some 150 bird species.

How many species occur in the Eastern Caribbean? Not surprising, there are pretty good estimates for flowering plants and vertebrate animals. Less is known about other members of the plant and animal kingdoms, in particular, marine invertebrates. The area's coral reefs are incredibly diverse, home to some 400 fish species. But, here too, vague descriptions such as "rich assemblages of invertebrates" are the norm in describing this ecosystem.

Whatever the number of species that actually occur in the Eastern Caribbean, it would be difficult to argue for the global importance of the region's biodiversity -- if *only* numbers are considered. Fortunately, this is not the only measure, for the same natural areas that support the region's flora and fauna are integral to the quality of life enjoyed by the peoples of the Caribbean. Economically and aesthetically, they are critical resources, particularly as more island-states make a transition to tourism-based economies.

Within this context, IRF's Biodiversity Program for the Eastern Caribbean was launched in 1991. It is an initiative of Island Resources Foundation, The Nature Conservancy, and Caribbean governments and non-governmental organizations. Funding for the program is provided principally by the Moriah Fund, WWF/Biodiversity Support Program, and the International Institute of Tropical Forestry. With an overall program goal to develop national and regional capacity to conserve the biodiversity of the Eastern Caribbean, the program is currently active in Antigua-Barbuda, Dominica, Montserrat, and St. Kitts-Nevis.

In 1994, primary program activities concentrated on:

■ Antigua, where ecosystem maps are being prepared to modify and update earlier data and where, in collaboration with the Ministry of Agriculture and a local NGO (the Environmental Awareness Group), a system of hiking trails is being developed in the area of Wallings Reservoir, the best-preserved moist forest on the island.

■ Dominica, where a West Indian entomologist was hired to assist in a first-phase research effort to assess the conservation status of Dominica's flora and fauna; IRF is working with the country's leading environmental NGO (the Dominica Conservation Association) as well as several government agencies to develop a conservation plan for identified priority species and sites.

■ Montserrat, where the program focuses on Fox's Bay, the largest and biologically most important wetland on the island; the objective is to develop the site as a nature reserve. Program collaborators include IRF, the Montserrat National Trust, the forestry and fisheries departments of Government, the University of the West Indies, and WWF-UK.

For more information about IRF's Biodiversity Program for the Eastern Caribbean, contact Bruce Horwith at the Foundation's Antigua office (PO Box 103, St. John's, Antigua; telephone: 809-460-1740; fax: 809-463-7740).

More than 20 years ago -- long before it was called "biodiversity" -- IRF's commitment to species protection began with a turtle-tagging program that extended over six nesting seasons and resulted in the tagging of over twelve hundred green sea turtles. The objective of the program was to determine the uniqueness and geographic range of the turtle population in the Eastern Caribbean.

More recently, IRF's biodiversity program assisted St. Kitts in developing a turtle monitoring program for that island and in publishing related educational materials.



New Publications From IRF in 1994

**WHALE WATCHING IN THE WEST INDIES:
A GUIDE TO CETACEANS AND SITES
OF THE REGION**
(by Nathan Gricks)

**MONTSERRAT ENVIRONMENTAL PROFILE:
AN ASSESSMENT OF THE CRITICAL
ENVIRONMENTAL ISSUES
FACING MONTSERRAT**
*(IRF with Government of Montserrat and
the Montserrat National Trust)*

**COMPARING EXPERIENCES OF THE
BRITISH AND UNITED STATES
VIRGIN ISLANDS IN IMPLEMENTING GIS
FOR ENVIRONMENTAL PROBLEM SOLVING**
(by Louis Potter and Bruce Potter)

**FROM THEORY TO PRACTICE:
A RETROSPECTIVE VIEW OF
VIRGIN ISLANDS
COASTAL MANAGEMENT**
(by Richard Volk and Edward Towle)

**GUIDELINES FOR SEDIMENT CONTROL
PRACTICES IN THE INSULAR CARIBBEAN**
(by Donald Anderson)

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The fate of the SIDS affects one-sixth of the earth's surface, for island states are custodians of 30 million square kilometers of ocean that fall within their Exclusive Economic Zones.

are being rapidly eroded, while scarce water supplies are being depleted, particularly in response to demands from the growing tourism sector. Only an estimated one-tenth of all sewage discharged into Caribbean coastal waters receives treatment.



Dr. Edward Towle (center) chairs a meeting in Colombo of staff in Sri Lanka's integrated coastal management program. IRF's president headed an evaluation team that reviewed USAID-funded coastal programs in Sri Lanka, Ecuador and Thailand.

Sri Lankan staff were interested in how islands in the Caribbean and Pacific are managing growth and guarding against inappropriate environmental protection technologies. "With difficulty," Towle concluded, but also noting that "islanders almost everywhere are adaptive and resilient in the face of adversity. Despite poor advice, they will prevail!"

After two weeks of intense negotiations, a Program Action Plan was adopted by the Conference that provides a blueprint for the sustainable development of small island states. It specifies measures to be taken at the national, regional and international levels and elaborates strategies for enhancing regional and sub-regional cooperation in a way that builds on Agenda 21, the 1992 Earth Summit action program.

In 14 thematic chapters, the SIDS Program of Action specifies the numerous issues that islands must address in pursuit of sustainable development. Yet many issues remain unresolved, centering most significantly on implementation, technology transfer and access to financial resources. The lack of high-level representation from the global community adds to uncertainty about international resolve to implement the Action Program and to work towards the sustainable development of small island states.

The conference's most visible success may well be the increasing solidarity and determination of the SIDS themselves. The 41-member *Alliance of Small Island States* (AOSIS), now chaired by a Trinidadian diplomat, has rapidly matured as a cohesive negotiating block since its formation four years ago.

Equally visible was the participation of NGOs, international in representation but dominated by island-based organizations. A non-governmental forum was held simultaneous to official governmental proceedings and provided the primary opportunity for NGOs to influence the main conference.

Island Resources Foundation was represented by its president and vice president, Edward and Judith Towle, and by NGO program director, Bruce Horwith. Horwith and Ed Towle participated in NGO Forum sessions on biodiversity and on coastal resource management. Additionally, IRF trustee, LaVerne Ragster, was a part of the official delegation from the U.S. Virgin Islands.

**GRANTS, PROGRAM REVENUE
and CONTRIBUTIONS RECEIVED
For FISCAL YEAR 1994**

(July 1, 1993 - June 30, 1994)

Island Resources Foundation is a non-endowed operating foundation established in the U.S. Virgin Islands in 1972. The Foundation supports its activities through a combination of grants, contracts and unrestricted donations. Revenues for fiscal year '94 are listed in the first table. (See pages 2 - 5 for a description of IRF's 1994 program of professional services, technical assistance, applied research, and publications. See second table this page for listing of IRF grant support for Eastern Caribbean non-governmental organizations.)

| | | |
|--|--|----------------|
| E. Caribbean Center, University of VI | Virgin Islands Resource Management | 3,100 |
| Falconwood Foundation | NGO Institutional Development | 10,500 |
| Goldman Environmental Foundation | Leadership Award to Andrew Simmons, St. Vincent | 59,000 |
| International Institute of Tropical Forestry | Eastern Caribbean Biodiversity | 52,839 |
| Laurance S. Rockefeller | Environmental Leadership | 5,000 |
| MacArthur Foundation | Virgin Islands Resource Management | 95,000 |
| Moriah Fund | Eastern Caribbean Biodiversity | 34,000 |
| Mukti Fund | NGO Institutional Development | 19,800 |
| Organization of E. Caribbean States | Eastern Caribbean Biodiversity | 1,142 |
| United Nations Development Program | Environmental Profiles | 9,000 |
| United Nations Environment Program | Integrated Coastal Management | 10,000 |
| United Nations Environment Program | Sedimentation Control Guidelines | 6,500 |
| US Agency for International Development | NGO Institutional Development | 135,000 |
| US Virgin Islands Government | Management Plans for Areas of Particular Concern | 20,000 |
| WWF/Biodiversity Support Program | Eastern Caribbean Biodiversity | 14,859 |
| Memberships & Contributions | | 31,801 |
| Other Revenues | | 26,323 |
| TOTAL | | 533,864 |

**IRF GRANT SUPPORT FOR
ENVIRONMENTAL NGOS
DURING FISCAL YEAR 1994**

Since 1986, IRF has provided direct support for environmental NGOs in the Eastern Caribbean through a combination of technical and financial assistance. During Fiscal Year '94, IRF presented almost \$100,000 to its NGO partners for institutional development or conservation program support. This assistance was made possible through the generosity of a variety of third-party donors, including the International Institute of Tropical Forestry, Moriah Fund, The Nature Conservancy, Mukti Fund, Falconwood Foundation, WWF/Biodiversity Support Program, and USAID.

| | <u>INSTITUTIONAL DEVELOPMENT</u> | <u>CONSERVATION PROGRAMS</u> | <u>TOTAL GRANTS</u> |
|--|----------------------------------|------------------------------|---------------------|
| Antigua Environmental Awareness Group | | 28,039 | 28,039 |
| Brimstone Hill Fortress National Park Society | 1,406 | | 1,406 |
| British Virgin Islands Botanic Society | 1,000 | | 1,000 |
| British Virgin Islands/East End Community Center | 8,650 | | 8,650 |
| British Virgin Islands National Parks Trust | 2,500 | 2,500 | 5,000 |
| Dominica Conservation Association | | 3,000 | 3,000 |
| Montserrat National Trust | | 23,251 | 23,251 |
| Nevis Environmental Education Committee | 1,445 | | 1,445 |
| Nevis Historical and Conservation Society | 6,391 | 1,500 | 7,891 |
| St. Christopher Heritage Society | 13,665 | 3,359 | 17,024 |
| TOTALS | 35,057 | 61,649 | 96,706 |

Who's Who at Island Resources Foundation

Virgin Islands Office

Edward Towle
President
Resource Planner

Judith Towle
Vice President
Financial Management

Sandra Tate
Office Manager

Shirley Lincoln
Library Associate

Don Anderson
Research Associate
Erosion Control

Marci Bortman
Intern
Waste Management

Michael Ivie
Research Associate
Entomology

Jack Livingston
Research Associate
Land Use Study

Christine McCoy
Intern
Waste Management

Antigua Office

Bruce Horwith
Director, Eastern
Caribbean Programs

Washington, DC Office

Bruce Potter
Vice President
Information Management
Systems

Jean-Pierre Bacle
Staff Associate
Resource Analyst

Affiliated Associates

Ove Anderson
Regional Planning

Arthur Archer
Sanitary Engineering

John Barnes
Fisheries

Stephen Bass
Environmental Policy

James Beets
Marine Ecology

Oswald Blaich
Public Planning

Ralf Boulon
Environmental Education

David Brower
Growth Management

Jessica Brown
International Development

Warren Brown
Park Planning

Paul Butler
Wildlife Conservation

Gillian Cambers
Oceanography

Costas Christ
International Development

Raymond Cote
Environmental Biology

Alissandra Cummins
Museum Development

Pier d'Ayala
Insular Systems

Henrique da Costa
NGO Development

Klaus de Albuquerque
Development Planning

Francois Doumenge
Island Conservation

Random DuBois
Geography

Karen Eckert
Endangered Species

Patrick Fairbairn
Wildlife Biology

John Gamman
Environmental Policy

Lloyd Gardner
Coastal Zone Planning

Tighe Geoghegan
NGO Development

Melvin Goodwin
Marine Ecology

William Gregg
Park Management

David Grigg
Marine Biology

Malcolm Hendry
Oceanography

Lawrence Hill
Forestry

Richard Howard
Caribbean Flora

Alister Hughes
Linguistics

Eleanor Jones
Environmental Planning

Ian Jones
Water Quality

Daven Joseph
Fisheries

Anne LaBastille
Wildlife Ecology

David Lee
Park Management

Robin Mahon
Fisheries

Peter May
Resource Economics

Richard May
Regional Planning

Winston McCalla
Environmental Law

Jerry McElroy
Economic Development

Leslie Middleton
Ocean Engineering

Louis Mills
Landscape Planning

Maynard Nichols
Marine Geology

Michael O'Neal
Development
Anthropology

Julie Overing
Marine Biology

Elizabeth Pierson
Zoology

Lydia Pulsipher
Historical Geography

LaVerne Ragster
Educational Institutions

William Rainey
Wildlife Biology

Anne Reilly
Tropical Plant Ecology

Yves Renard
Community Resource
Management

Caroline Rogers
Coral Reef Ecology

Naresh Singh
Environmental Policy

Bernard Spinrad
Information Systems

George Tyson
Cultural Resources

Jan Vermeiren
Development Planning

Richard Volk
Coastal Planning

Barry Wade
Resource Management

Roy Watlington
Oceanography

We are keenly aware that it is the generous financial support of our members and other contributors that makes possible our programs to help islands. A donation form is enclosed, and if you would like more information about tax-deductible gifts to Island Resources Foundation, please contact our Virgin Islands office.