

island resources FOUNDATION

environmental planning for sustainable island development

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HIGHLIGHTS of FOUNDATION ACTIVITIES for 2010-2011

In the Caribbean—particularly the smaller islands of the Eastern Caribbean—the development of **environmental profiles** has created a foundation for much of Island Resources Foundation's (IRF's) programmatic work during the last two decades. During the 1990s, the Foundation prepared environmental profiles for six independent countries (*Antigua-Barbuda, Dominica, Grenada, St. Kitts-Nevis, St. Lucia, and St. Vincent*) and for two UK overseas territories (*Anguilla and Montserrat*). Each profile was comprehensive in scope and represented the most detailed analysis available of environmental data and issues for each country.

Funded by the U.S. Agency for International Development and the United Nations Development Program, the profiles were initially **donor-driven**, *i.e.*, to provide baseline environmental data to guide donor decision-making. However, as the process evolved, the Eastern Caribbean profiles were also very much **country-driven** planning efforts that reflected individual country priorities and options.

A decade later, as the Foundation expanded its programmatic activities in the British Virgin Islands (BVI), IRF again turned its attention to the utility of environmental profiles as an effective means for integrating environmental concerns in public policy decision-making. Approached by the **Jost Van Dykes Preservation Society** to assist the Society and the Jost Van Dyke (JVD) community to better appreciate and understand their island environment, the Foundation partnered with the Society to produce, in 2009, the first environmental profile for the BVI (download at: www.jvdgreen.org/files/JVD_Environmental_Profile_Final.pdf).

Recognizing that the JVD Profile was only a first step, IRF Vice President **Judith Towle** developed a program concept paper to expand the profiling process to all of the BVI. By 2011, funding had been identified to support a new phase of the BVI Environmental Profile Program, this time for the islands of Virgin Gorda and Anegada. Project activities began in July 2011 and will continue to publication of the two profiles at the end of 2012. Funding support was secured from: the UK Overseas Territories Environment Programme (**OTEP**), which is administered in the BVI by the Governor's office; from the Office of the **Premier of the BVI**; and from private sector contributions initiated by the **Hokin family** of the Bitter End Resort in Virgin Gorda.

Each BVI Environmental Profile will provide: a retrospective look at environmental change, a current-state description and analysis of the natural resource base for each island profiled, an assessment of priority environmental issues, and recommendations for sustainable growth—and will do all of this within a single, island-specific document that makes the information available for easy access and use by: policy makers, resource managers, development proponents, researchers, students, donors, and the BVI community. The island of Tortola will be added to the process in 2013, followed by a summary synthesis report for the territory.



View across Hansons Bay into Five Islands Harbor with mangrove area in the foreground, western coast of Antigua

IRF participated in an ecosystem assessment of the Body Ponds Watershed as part of a larger Global Environment Facility-funded project for Antigua. One of IRF's outputs was an assessment of current conditions in Five Island Harbor (above) and the impacts of activities in the watershed on the harbor's ecosystems. (Photo Credit: Bruce Potter)

The **Southwest Watershed of Antigua** includes some of the most valuable natural systems on the island, including Wallings Forest, Fig Tree Drive, Cades Reef, the Cades Bay Marine Reserve, and Mount Obama (formerly Boggy Peak, renamed in 2008); it is also an area utilized by a wide range of commercial and recreational stakeholders. In 2010, Island Resources Foundation was engaged by the **Government of Antigua and Barbuda** to provide (1) an assessment of the ecosystems within the watershed and (2) mapping products for the natural areas of the watershed. Both activities are part of a full-size Biodiversity Conservation Demonstration Project funded by the **Global Environment Facility (GEF)**.

The overall objective of the Demonstration Project is to develop an integrated management strategy for the watershed. IRF's marine and terrestrial eco-surveys, as well as the team's mapping of the area's natural features, are seen as key components to achieving this objective.

The IRF team for the project comprises: **Kevel Lindsay** (principal investigator), **Jean-Pierre Bacle** (biodiversity assessment), **Kimberly Baldwin** (marine research and mapping), **Dr. Brian Cooper** (GIS mapping), **Lucia Mings** (stakeholder engagement), and **Bruce Potter** (project supervisor). IRF will complete its assignment and deliver its findings to Government by the end of 2011.



Jameison "Kublai" Mannix, an Antiguan fisher who assisted scientist **Kim Baldwin** in carrying out marine surveys for the Southwest Watershed project in Antigua

In 2004, the **Organisation of Eastern Caribbean States**, through its Environment and Sustainable Development Unit, began implementation of its **Protected Areas and Associated Livelihoods (OPAAL) Project**. In 2010, a contract was awarded to IRF to undertake environmental and socioeconomic baseline studies for OPAAL demonstration sites in **Grenada and St. Kitts**: in Grenada, for the **Grand Etang and Annandale Forest Reserves** and in St. Kitts, for the **Central Forest Reserve**. Both demonstration sites were selected for inclusion in OPAAL because of their potential as multi-use, national park-style protected areas that would protect biodiversity while providing increased livelihood opportunities for surrounding communities.



Working group session at the Grenada Forestry Department during IRF's OPAAL project mission to the country. From the right (counter clockwise) are **Anthony Jeremiah** (Senior Forestry Officer), **Kevel Lindsay** (IRF), three Forestry Rangers, **Jean-Pierre Bacle** and **Brian Cooper** (IRF).



Waterfall visitor area within the **Annandale Forest Reserve, Grenada**

A four-person team undertook the IRF assignment: **Dr. Brian Cooper** and **Lucia Mings** of Antigua for the socioeconomic studies and IRF's **Kevel Lindsay** and **Jean-Pierre Bacle** for the environmental studies. A number of new species in both Grenada and St. Kitts were reported by the Lindsay-Bacle team, which underscores the team's conclusion that more detailed, on-going scientific study and monitoring of the flora and fauna are needed before implementing major plans to change conservation strategies for either demonstration site.



Clive Petrovic (l) and **Jean-Pierre Bacle** during Mosquito Island field work

Red Mangroves along southeast shoreline of **Mosquito Island**



In 2009, the British Virgin Islands Department of Town and Country Planning initiated discussions with IRF to undertake environmental monitoring for a development project on **Mosquito Island**, owned by British entrepreneur **Sir Richard Branson**. IRF agreed to take

on this challenge as an opportunity to create a prototypic monitoring plan and protocol within the framework of the *VI Physical Planning Act* (2004). As noted by IRF Vice President **Judith Towle**, "Given the absence of Regulations for the 2004 Act, the Mosquito Island environmental monitoring project is an opportunity to more carefully and more rigorously define and refine the environmental monitoring process in the BVI."

An *Environmental Monitoring Plan for Mosquito Island*, including baseline survey findings, was prepared in September of 2011 by an IRF team comprising: **Jean-Pierre Bacle**, **Judith Towle**, **Kevel Lindsay**, and **Clive Petrovic**.



Jost Van Dyke-based caretaker **David Blyden** examining a rat bait station on Sandy Cay (BVI) as part of a long-term invasive species monitoring program at the island. Under a 2008 grant from the **Laurance S. Rockefeller Fund**, IRF continues to assist the BVI's **National Parks Trust (NPT)** on behalf of the **Sandy Cay Habitat Management Area**, including supervision of caretaking and invasive species monitoring services provided by the **Jost Van Dykes Preservation Society (JVDPS)**. IRF's **Jean-Pierre Bacle** represents the Foundation in this partnership of three institutions (NPT/IRF/JVDPS) that has been in place for three years. Sandy Cay is the newest national park of the 21-site park system over which the NPT has jurisdiction.

Monarch butterfly on milkweed (Antigua)



Flambeau butterfly (St. Kitts)

Cienfuegosia heterophylla, rediscovered by an IRF team in St. Thomas (USVI) in 2010 after not having been seen for approximately 80 years



American Kestrel on Virgin Gorda (BVI), northeast of Gorda Peak





Judith Towle and Bill Moody

IRF's **Judith Towle** and **William Moody**, Distinguished Fellow at the Rockefeller Brothers Fund, have led a two-year effort to analyze the legal system governing philanthropy and civil society in the insular Caribbean and to encourage the development of modern structures and laws to support philanthropy and the nonprofit sector.

Under the auspices of the **Caribbean Philanthropy Network** (CPN), Towle and Moody prepared the Caribbean's first study on the development of charity law (*Philanthropy, Civil Society, and Law in the Caribbean*, published by CPN in 2010). This was followed in 2011 by more intensive research and analysis of legal frameworks in the British Virgin Islands and the Federation of St. Kitts and Nevis. In the BVI the two were joined in their work by IRF Senior Research Fellow **Dr. Michael O'Neal**. Their conclusions and recommendations will be presented in a paper by Ms. Towle at the **Islands of the World XII** conference taking place in Tortola (BVI) in 2012 at the **H. Lavity Stout Community College** (<http://www.hlscc.edu.vg/islandsXII>).

IRF's **Kevel Lindsay** says he is on a personal quest to reconnect with the native plants of his homeland, the dual-island nation of Antigua and Barbuda. He is particularly focused on rediscovering the country's unique species of ferns, many of which are quite rare. Since 2007, Lindsay has been working with the **Plant Conservation Project of the Environmental Awareness Group (EAG)**, an Antiguan-based NGO. It did not take long for him to realize that the plant team was going to have a particularly difficult time finding and describing native ferns and that his much-loved ferns were one of the least studied and least understood of Antigua's plant groups.



Kevel Lindsay taking photos of rare ferns along the Fig Tree Ghaut, Antigua

A source of personal achievement for the IRF ecologist was his discovery of the Netted Adder's Tongue fern (*Ophioglossum reticulatum*) in the southern volcanic hills of Antigua ("I fell to my knees in utter shock ... I was so overwhelmed by this new discovery!"). Most ferns (60 species now recorded for Antigua) do not elicit such excitement, but this should not diminish their biodiversity importance. Lindsay reminds us that ferns often make up the bulk of the ground cover on the floor of forests and thus are a part of the forest's biomass, contributing significantly to the nutrient and water cycles of the upper soil layers.

During 2011, Kevel Lindsay received additional funding for continuation of his fern research in Antigua: first, an award from the **Rufford Small Grants Foundation (UK)** and, more recently, a second grant from the **Mohamed bin Zayed Species Conservation Fund of Abu Dhabi, United Arab Emirates**.

Throughout the Caribbean, it is widely assumed that the region's coral reefs are being threatened by increased erosion rates induced by land use changes. While the assumption is reasonable, it must be supported by a scientifically validated cause-and-effect model if desired public policy changes are to be achieved.



IRF Research Associate **Damaris Torres-Pulliza** completing a stream survey of the Río Fajardo Watershed, Puerto Rico. In combination with historical aerial imagery and climatic data, Damaris uses the field measurements to reconstruct water and sediment discharge in the Río Fajardo Watershed from the 1930s to the present.

IRF's Río Fajardo Watershed project in eastern Puerto Rico, funded by the **University of Puerto Rico's Caribbean Coral Reef Institute**, has addressed this very issue. By analyzing long-term land cover trends and watershed-scale hydrologic modeling, the IRF research team has reconstructed historic runoff and sediment yield rates within the watershed. The project linked land use patterns over the past seven decades to coral reef growth indicators. The use of a hydrological model allowed the team to transfer land use patterns and climatic data into runoff and sediment yields.



IRF staff geologist **Dr. Carlos Ramos-Scharrón** (right) describes the uses of an automated rain gauge in erosion studies to a volunteer. Rain provides the energy and the medium for erosion and sediment transport and is used to predict erosion rates from natural hillslopes and from ground that has been disturbed by construction, unpaved roads and foot trails, and agriculture.

Project researcher **Damaris Torres-Pulliza** presented findings from the Río Fajardo study at a meeting of the American Society of Limnology and Oceanography, Aquatic Sciences Meeting in San Juan, PR in February 2011. She presented the findings on behalf of herself and fellow researchers: **Dr. Carlos Ramos-Scharrón**, principal investigator, and **Dr. Edwin Hernández-Delgado**.

Kudos to IRF Research Associate **Don Anderson**, author of the technical report lauded in the following excerpt:

GUIDELINES FOR SEDIMENT CONTROL PRACTICES IN THE INSULAR CARIBBEAN is one of the most practical and useful coastal management handbooks ever written ... [over] fifteen years have passed and the publication is as useful as ever.

Source: <http://coastalchallenges.com/2010/05/11/sediment-control-strategies-for-the-coastal-zone>.

Technical Report No. 32 was prepared by IRF in 1994 for UNEP's Caribbean Environment Programme in Kingston, Jamaica.



Red mangroves (*Rhizophora mangle*), east end of Jost Van Dyke, British Virgin Islands



Rare Dwarf Gecko (*S. parthenopion*) discovered by IRF team on Mosquito Island, BVI



Epidendrum fragrans at Annandale Forest Reserve, Grenada



Lobelia sp. at Dos d' Ane Pond, St. Kitts

Island Resources Foundation extends its congratulations to the following ...

◆ **Dr. Caroline S. Rogers**, longstanding IRF collaborator and supporter, on her forthcoming photographic publication celebrating the extraordinary biodiversity of mangroves at Hurricane Hole, St. John, within the Virgin Islands Coral Reef National Monument. *The Mysterious, Magical Mangroves of St. John* (to be released in December 2011) follows her very successful 2009 book, *Coral Reef Stars*, which provided a photographic essay of the marine life of coral reefs and seagrass beds around the island of St. John. Dr. Rogers, a marine ecologist with the U.S. Geological Survey, has spent over 30 years working to protect the coral reefs and fishes of the Caribbean.



Dr. Rogers with IRF Trustee **Nicolas Drayton** at a July 2011 St. John gallery opening displaying her photographs, many of which appear in her two published books

◆ IRF Senior Research Fellow **Dr. Michael E. O'Neal** on his participation in a roundtable discussion at the American Anthropological Association's 2010 conference. Dr. O'Neal drew on his Caribbean experiences for his discussion of "practicing anthropology on the periphery," noting that the process whereby he has worn many hats in the British Virgin Islands as business executive, conservationist, NGO chair, college president and scholar is compatible with the concept of Caribbean "occupational multiplicity" and reflects his own thinking about "practicing anthropology on the periphery". In October of 2011, Dr. O'Neal was awarded the Certificate in Family Business Advising from the Family Firm Institute (FFI), thereby expanding his anthropological interests to the ethnography of Caribbean family enterprises.



"Errol" Harris of Dominica accepting the 2010 McFarlane Environmental Leadership Award

◆ **Albert Hugh "Errol" Harris** of Dominica, the 2010 recipient of the nineteenth **Euan P. McFarlane Award** for Outstanding Environmental Leadership in the Insular Caribbean.

Mr. Harris was nominated by **Dr. Karen Eckert**, executive director of WIDECAST (Wider Caribbean Sea Turtle Conservation Network), who provided a warm and enthusiastic endorsement of

Mr. Harris's conservation activities on behalf of the Dominica Sea Turtle Conservation Organization (**DomSeTCO**). IRF has overseen management of the annual \$1,000 award since it was established in 1987 by an endowment from **Laurance S. Rockefeller**.

When accepting the award at the annual meeting of WIDECAST in April of 2011, Mr. Harris stated, "Of all the nominations and awards I have received in my career, this is the one that I least expected and am most pleased about."

◆ IRF Trustee **Barbara Lausche**, author of *Guidelines for Protected Areas Legislation*, published in 2011 by the International Union for Conservation of Nature (IUCN), Gland, Switzerland (370 pp. plus CD with 13 case studies). The guidelines are the first definitive guidance on protected areas legislation in 30 years and represent an updating of guidelines first developed by Dr. Lausche in 1980. Persons interested in the new guidelines can request a hard copy by sending an email to the IUCN Environmental Law Centre at: ELCsecretariat@iucn.org. The English version PDF is available at: <http://data.iucn.org/dbtw-wpd/edocs/EPLP-081.pdf>.



Barbara Lausche at the 10th Conference of the Parties of the Convention on Biological Diversity held in Nagoya, Japan in October 2010, where the new legislative guidelines were introduced

Barbara Lausche is a member of the IUCN Commission on Environmental Law and worked most recently in the Caribbean as legal drafter of the 2006 *National Parks Act* in the British Virgin Islands, as part of the IRF Sandy Cay project team. She also prepared the *Regulations* to the BVI's *National Parks Act* (2008).

◆ **Antiguan Racer Conservation Project**, a 15-year partnership of six conservation organizations that has collaboratively made extraordinary progress in saving the rarest snake on the planet, the **Antiguan racer** (*Alsophis antiguae*). When the project began in the mid-1990s, only 50 Antiguan racers survived, all confined to the eight-hectare Great Bird Island off the coast of Antigua. Today, as a result of intervention efforts by the conservation coalition, the population has dramatically risen from just 50 individuals to over 500 today.

The six local and international organizations that make up the Antiguan Racer Conservation Project are: **Durrell Wildlife Conservation Trust** (UK), **Fauna and Flora International** (UK), **Environmental Awareness Group** (Antigua), **Black Hills State University** (USA), **Island Resources Foundation**, and the **Forestry Unit of Antigua**.

In speaking of the remarkable partnership and its success, IRF President **Bruce Potter** stated, "An important by-product of the Antigua Racer Conservation Project has been to demonstrate a globally relevant model for the conservation of biodiversity. Off-shore islands are being turned into reserves where public and private organizations can control invasive species and manage tourism development pressures more effectively."

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