

POLICY GUIDELINES RELATING TO DEVELOPMENT AND  
MANAGEMENT OF THE NATIONAL PARK SYSTEM  
IN DOMINICA

- Part I. A Research Prospectus for the  
Dominica National Park Program
- Part II. Funding and Technical Support Possibilities

Contract Report Prepared for  
THE CANADIAN NATURE FEDERATION  
Dominica National Park Project  
with Funding Support from  
Canadian International Development Agency

By

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May 1979

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MANAGEMENT OF THE NATIONAL PARK SYSTEM  
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- Part I. A Research Prospectus for the  
Dominica National Park Program
- Part II. Funding and Technical Support Possibilities
- Part III. Development of the Cabrits as an Historical  
Element of the Dominica National Park System  
(BOUND AS SEPARATE REPORT)
- Consult: Canadian Nature Federation Dominica National  
Park Office for copies of the above
- Part IV. Springfield Estate Potential as a  
Research/Nature Centre Serving Dominica and  
the National Park System
- (CONFIDENTIAL - LIMITED CIRCULATION)

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# Canadian Nature Federation

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## FOREWARD

National parks represent a special type of land use that provide for a sustained flow of multiple uses. They protect water catchments, protect against erosion, are catalysts for environmental education, stimulate tourism, and provide for recreational uses. National parks also carry international recognition as custodians of important research resources inasmuch as they set aside significant undisturbed areas as ecological bench marks for scientific study. Morne Trois Pitons National Park with its unique rainforest and montaine vegetation, indigenous fauna, and fascinating geological activity has long attracted international scientific attention (notably the inquiries of the Archbold-Bredin expeditions undertaken under the auspices of the Smithsonian Institution).

At the same time that research activities are encouraged in parks it must also be recognized that researchers do have potential for causing resource impacts and can conflict with other uses. It is for this reason that the Island Resources Foundation was asked to prepare guidelines for controlling and encouraging proper use by researchers in Dominica's first national park. The attached report should both remind researchers of their responsibilities and suggest management controls that the Dominica National Park Service may wish to consider. In addition, the report offers advice on research needs, special facilities, and funding sources.

A third objective of this report is to assess the Cabrits area as a potential element of the national park system in Dominica. As the work of IRF suggests, the regional significance of the Cabrits in the history of the West Indies is exceptional and warrants serious consideration as a national historic park.

The Canadian Nature Federation, with funds provided by the Canadian International Development Agency, is pleased to sponsor the preparation of this report as a reflection of the Island Resources Foundation's continuing assistance to the Dominica National Park Programme.

J.W. Thorsell, Ph.D.  
Project Coordinator

## PART I.

### Morne Trois Piton National Park, Dominica: Research Plan Guidelines

#### General Comments

A. Anyone interested in research work in the Morne Trois Piton National Park should bear in mind that it is a national park, and that they engage in only non-consumptive or non-destructive research. Experimental research, involving manipulation, alteration of the ecosystem, should be carried on in similar areas outside the park and outside prospective additions to the park. Collecting should be done in moderation only as necessary to document observations. Researchers should be aware of the enormous amount of work done by the Smithsonian Bredin-Archbold expeditions and Morden expeditions, and should start from where these efforts left off, rather than doing this work over. Possibly the Smithsonian could be persuaded to assign to someone the task of preparing a bibliography of the results of these expeditions to date. Observational research should be encouraged, as there are many things to be learned. Researchers would do well to write summaries of their findings in a popular style to be used in interpretive literature for the National Park.

B. Scientific collecting permit system. A liberal system of permits should be established for collecting in the park, specifying collecting for documentation of research, but specifically limiting collecting of organisms on the lists in the appendices of the International Convention on Endangered Species. Any blanket limitation on collecting, or any requirement that a set of specimens be left in Dominica is unnecessary. If a museum or herbarium should be established in Dominica, collectors could be encouraged to deposit a set there and would undoubtedly do so if assured the material would be cared for. The specimens would be eaten by insects and wasted if no institution, with a professionally trained curatorial staff, were responsible.

C. A research plan is easy to make but very hard to implement, as researchers generally have their own ideas as to what they want to work on. A logical sequence would be to do a complete descriptive inventory of the flora and fauna of the park, of the plant and animal communities, and of the habitats they occupy. This should be followed by studies of the ecological processes taking place in the ecosystems indicated by the communities plus habitat studies suggested above. Of primary importance would be to describe very carefully the areas penetrated by the trails constructed to give access to people -- local and tourist -- done before or at the time of trail construction. Then, at reasonable intervals, say every six months, these

trails should be studied to observe and document the changes that resulted from the construction and use of the trails. This would yield a measure of the impact of normal use of a tropical forest park. Such studies have been made in some U.S. parks, e.g., Rocky Mountain National Park, but I know of nothing comparable in the tropics. Next in order of priority would be behavioral studies of both animals and plants, and studies of inter-organism dependencies and interactions. Basic to all of these would be continuing environmental monitoring, climatic records, plant and animal censuses, records of appearance and spread of exotics, intensity of use of trails, etc.

D. Perhaps, Dr. Horton Hobbs of the Division of Crustacea of the Smithsonian Institution, could be persuaded to prepare a chronological account of the visits of scientists to Dominica under the Bredin-Archbold and Morden auspices, and a list of the publications that resulted. One would then have a very good list of people who had, in the past, an interest in research on the island. Some would, of course, now be dead or otherwise unavailable, but many are still working. As to potential new people, that would be more difficult. Some publicity in scientific journals and news-letters might attract workers. The problem, of course, is support. Volunteer workers are only had on their own terms and will work on what they are motivated to. If facilities were available -- lodging, transport, etc.-- as was the case under Archbold auspices, some workers would be attracted. This problem is not an easy one. The fact that the island is the most unspoiled of all the Antilles and that the park provides an almost virgin rain forest environment is very attractive.

E. Research activities in support of park management and the overall park objectives generally fall into several very different categories and the strategies for promoting and implementing these efforts, of necessity, will vary although the rules may be universally applied.

1. Research by park staff (or contracted specialists) locally selected, budgeted and supervised.

N.B. Need for line item in park budget for research.  
N.B. Need to establish priorities.

2. Research by Dominican nationals.

N.B. By encouraging local researchers (i.e., medicinal plants, wildlife, user surveys) the park enhances its image in the community and strengthens the scientific infrastructure of Dominica.

N.B. On many occasions it may be possible to pair or match a local scientist (amateur or professional) with researchers from outside. This "counterpart" principle is important because it enhances and accelerates the feedback process of information to management.

3. Research by scholars representing institutions outside Dominica (i.e., UWI, Smithsonian Institution, WWF, CATIE, etc.) where a prior institutional endorsement/approval process has taken place between the Dominica National Park and the institution.  
  
N.B. A form letter, inviting cooperating researchers should be sent to a select list of institutions spelling out the research needs of the park system, incentives (if any) offered, the terms and the procedures.  
  
N.B. A list of prospective cooperating institutions (with addresses) is attached as Appendix D.
4. Research by scholars supported by and/or representing an international agency such as FAO, UNEP, UNESCO, and formal approval by the Dominican government is required.
5. Research by individual, independent scholars who simply turn up in Dominica but offer a serendipitous opportunity to expand the information base regarding the National Park System.

#### General Guidelines for Scientific Research Within Park Areas.

A. Scientists may use a park for studies that cannot be performed outside the park. Those studies should contribute to a better understanding of park resources and environments and of their use by people, and must not interfere with other public uses; nor should those studies have a lasting or significant impact on park resources. A zoning scheme should be established.

B. The park Director should issue permits for all research conducted within the boundaries of his jurisdiction. Issuance of such permits should be based on the scientific validity of the research proposal and on potential conflicts with other resource uses. Conditions to be included in the permit may include restrictions as to locations, timing, methods, and number of specimens to be collected. The permit must include agreement that the researcher submit to the park a research proposal, annual progress reports, a final report of results and findings, and, as appropriate, copies of all theses, dissertations, and publications resulting from the research.

C. Research permits may include collection of plants, animals, and other natural objects when specimens of such objects are essential for conducting a bona fide research project substantiated by an approved research proposal. This proposal must be consistent with the scope of collections statement prepared for each park in the system. For sample permit forms from Brazil, Canada and the United States see Appendices A, B and F.

D. Collectors must comply with all applicable local laws regulating collecting and associated activities. The collection of specimens for use in off-site educational programs and/or the development of general study collections should be discouraged in instances where specimens can be obtained outside the boundary of a park. Collecting for personal use or profit should not be permitted (except, see below, regarding "Traditional Uses").

E. Limited collecting by students at environmental study areas and in science classes sponsored by public elementary and secondary schools and colleges and universities, may be permitted in natural environment subzones at the discretion of the Director. The student activities must be closely supervised by responsible adult instructors and/or Dominica National Park employees. Such collecting should be restricted to common plants and invertebrates and be carried out in accordance with the terms of a special use permit or memorandum of understanding between the institution and the Dominica National Park.

F. The collection of threatened or endangered plant and animal species must comply with these policies and also be in accordance with all international conventions on endangered species to which Dominica is a signatory and any local laws regarding both threatened and endangered species.

G. The limited collection of medicinal plants and herbs, as traditionally practiced by citizens of Dominica for personal use should be allowed, although this special exception should be treated as an experimental, temporary "permissible use", monitored carefully and re-evaluated annually. A research effort should be mounted to determine if any of the "medicinal plants" are a threatened or endangered species.

H. Permits should not be transferrable and should show the name, home address and nationality of all members of the research team or party.

I. For certain kinds of research activities, the Director, with the approval of his Minister, may require the permittee to post a bond prior to being issued a permit.

J. The permit should have attached, a map, identifying the approved area of study or research, and, if applicable, a list of all prohibited species, specimens, areas or activities.

K. The Dominica National Park Service should explore the possibility of obtaining special exemptions from customs duties for scientific instruments and research equipment imported by a scientist or scientists holding a valid permit for research activities in the park and where the items will be removed from Dominica at the completion of the research effort. Possibly a bond could be required, returnable when the required report is received by the Director.

General Guidelines for Historical/Cultural Research Within or Relating to Park Areas.

A. Research involving cultural resources. The Park Development Plan should explicitly acknowledge the need to conduct and support research necessary to evaluate, preserve, and interpret the cultural resources of the Dominica National Park System.

B. Purposes of service research involving cultural resources. Research on cultural resources within the Dominica National Park system should be mission-oriented, supporting their preservation, development, interpretation, and management. Research should precede planning and development affecting the cultural resources of any unit of the System. The depth of research conducted should be appropriate to the level of importance of the end to be served.

Research may be directed to a particular planning or management problem, or may be conducted to provide fundamental data for preservation, management, or interpretation.

C. Quality of historical, archaeological, and architectural research. Historical, archaeological, and architectural research should make use of current professional concepts, methods, and techniques in order to make optimum use of funds and resources, and contribute effectively to preservation, development, interpretation, and management. All research shall be preceded by, and be consistent with, a comprehensive and professionally adequate research design based on standards that are consistent with current professional expectations and capabilities. These standards should be periodically reviewed by qualified staff or contracted professionals.

D. Architectural research. Architectural research shall be conducted by experienced professionals to synthesize physical evidence found in the analysis of a structure and such architectural prototypes of the period and region needed to fully understand the structure with documentation and evidence supplied by historians and archaeologists. Professional study and evaluation shall precede any changes in use of a historic structure and intervention into its fabric for maintenance or preservation treatment. Architectural research shall be continuously employed to evaluate all new information, materials, and practices that may affect the preservation of historic structures.

E. Archaeological research. Archaeological research involving excavating or collecting, no matter how well conceived or executed, is a destructive process representing an irreversible and irretrievable commitment of cultural resources. Accordingly, any proposal for research physically affecting cultural resources shall:

1. be based on an approved research design closely defining the scope and methodological basis of the research;
2. establish that the research is essential to the acquisition of data needed by management, or to visitor understanding of the purpose for which the park was established, or to the preservation of in situ historic remains;
3. establish that the purpose of the work proposed can be substantially met only by archaeological work at the site(s) proposed;
4. provide for appropriate recordation of data, dissemination of results, and preservation of cultural resources affected;
5. establish that sufficient institutional commitment and capability exist to fully recover, analyze, synthesize, and publish the results of the work; to meet curatorial responsibilities for the archaeological materials and artifacts removed; and to provide for appropriate preservation of the in situ remains;
6. establish that the principal investigator has a serious, long-term commitment to the archaeological resources proposed for the study.

F. Salvage of cultural resources. When it has been determined that overriding development or other considerations require the destruction of cultural resources, provision shall be made for salvage of data and remains. If it is established that in a particular situation total salvage will be too expensive in relation to the value of the data and remains, or if total salvage will involve unwarranted duplication, then less-than-full salvage may be approved. All salvage shall be based on an appropriate research design.

G. Preservation of field notes and collections. Field notes and collections of artifacts and structural features retrieved in the conduct of research in archaeology and historic architecture, or during restoration projects, shall be preserved for the benefit of future investigators and as an aid to continued preservation.

Where practicable, structural elements shall be left in place. If they must be removed for preservation, significant or representative samples shall be carefully tagged, cataloged, and stored.

H. Cooperative research. The National Park System should promote and encourage cooperative research relationships in history, historic architecture, and archaeology with recognized educational and scientific institutions. Through appropriate means,

such as memorandums of agreement and personnel exchanges, the Director of the Park should encourage such institutions and scholars to direct their research interests toward Park System objectives.

Because the DNPS also needs information gathered apart from the constraints of its policies and expectations, it shall seek out outside research pertinent to park themes and resources and shall encourage independent researchers to undertake studies related to interpretation and management.

The physical and documentary resources of the DNPS and its facilities and assistance shall be made available to qualified scholars, whether professional or amateur, to the extent consistent with the mission and operational requirements of the Park.

I. Investigation of cultural resources by qualified investigators. Direct archaeological and architectural investigation of cultural resources in any manner that physically affects such resources shall be undertaken only by professionally qualified Park employees or contractors or collaborators in the conduct of their official assignments, or by accredited scholars from recognized institutions.

J. Protection of research potential. No action shall be taken that in any way unnecessarily reduces the potential for future research on cultural resources in any park. Proposals for archaeological excavation shall be preceded by a thorough professional evaluation of the impact on research potential. In addition, affirmative steps shall be taken in every park to insure that (a) routine park activities or development do not impair cultural resources; (b) no action is undertaken that alters the fabric of a historic structure for any purpose other than approved forms of its preservation, and then only under appropriate professional supervision; (c) structural materials and historic objects recovered during treatment or excavation of cultural resources are recorded and preserved. Where warranted by their importance, susceptibility to adverse effects from visitation, or the necessities of ongoing research efforts, cultural resources (including historic structures and areas of archaeological value) may be closed to public access and reserved solely for research purposes.

#### Research Projects (Tentative Priorities).

The following lists of topics combines recommendations made by more than a score of persons but excludes all esoteric research schemes that bore marginal relationship to park management problems at the present time. This by no means should be interpreted as justification for rejecting any unsolicited research proposal not on the priority lists, but submitted by responsible investigators or institutions to the DNPS for consideration, approval and a permit. The simple presence of

trained, professional scientists and researchers working in the Park can provide a positive reinforcement to in-service park staff training, and visiting investigators can be induced to run seminars, assist with proposal writing, help revise, expand and update the park research plan, and can become a link to other researchers, and their parent or sponsoring institution as well as their funding source. Serendipity is the name of this strategy and it is an essential element in all LDC's with limited scientific facilities, few scientific institutions, fewer professional scientific specialists and marginal library, archival and museum resources, all of which the external investigator has access to and can, to a degree utilize.

A. Geology, Geomorphology, Soils and Climate.

1. The basic geology and geomorphic processes in the park need attention but the product of the research should be aimed at serving the practical requirements of park planning and interpretation (Thorsell, Planning Considerations, p. 12).
2. Lang's soil data (1967, 1972) needs to be interpreted with reference to projected park use and development (Thorsell, Planning Considerations, p.12).
3. Rainfall data is needed from multiple gauge stations within the park if micro-climate areas are to be adequately mapped and interpreted (Thorsell, Planning Considerations, p. 14).

B. Vegetation.

1. Identify sites where endemic flora occur and prescribe protection strategy.
2. Monitor the regeneration of the secondary forest and sequential successional processes.
3. Assess optimum method of vegetation control by herbicides on and around historic ruins (develop test sites at the Cabrits or elsewhere outside the park and monitor; determine optimum herbicide application technique, amount, frequency, safety factors, etc.).

C. Fauna.

1. Life history/diet/habitat/population studies of (a) Manicou (Opposum) (Didelphys marsupialis) and (b) Agouti (Pasyproctis antillensis).
2. Continue parrot population/habitat studies initiated by Mrs. H. Nichols at Diablotin.
3. Define habitats of unique or special significance and complete a resident species profile preferably identifying one or more indicator species for systems monitoring purposes.

4. Assess forest insect/disease vector/control problem vis à vis visitor areas.
5. Assess nuisance insect control strategy.

D. Visitor/User Considerations.

1. Plan an intercept type and passive type user survey research project (with recall questionnaires and interviews) designed and linked so the data from the recall questionnaire can be used as a multiplier with the interview data. Pre-test and implement.
2. Plan and mount a non-user survey regarding perception/impediments/perferred services/attractions/ and attitudes.
3. Research possibility of establishing non-governmental private, charity type Dominica National Park Association to which users could donate support for the park.

E. Water and Miscellaneous.

1. Develop a water quality research and monitoring program (including flow, suspended solids, nutrient levels, temperature, dissolved oxygen, infauna, sediments as a minimum) for Fresh Water Lake and its associated stream flows.

N.B. Some elements of the monitoring could be done using primitive equipment, and secondary school science students.

2. Mount basic resource assessment/mapping and research efforts for those prospective sites suitable for inclusion in the Dominica National Park System, especially Diablotin, the Cabrits, and possibly Scotts Head.
3. Conduct a survey and assessment of all known collections of specimens on Dominica.
4. Evaluate the need for minor boundary adjustments to make boundary conform more closely to "natural boundaries" for ease of management.

Research Strategies: Needs and Options.

A. Supporting Facilities (Non-Park based). The Park Administration needs to encourage, by various means, the establishment of:

1. A "Dominica National Museum"
  - embracing the physical and natural, the science, history and culture
  - as a central reference repository for existing specimen collections
  - as a potential source of resident scientific and humanistic talent needed only intermittently by the park system in the pursuit of management objectives
  - as a depository for future specimen reference collections obtained under park permitting procedures

N.B. For a park system to run its own museum system is generally a mistake as it detracts from the principal mission and is costly. Secondly, the

resulting museum is generally skewed thematically and fails to serve the whole community.

- a trained conservation staff person is needed
- an exhibit specialist is desirable

N.B. Both of whom can be "borrowed" when needed for infrequent park related enterpretive/exhibit efforts relating to visitor centers, etc.

2. A proper "National Archives" with a resident trained archivist/manuscript librarian/conservator. The present archival program is inadequate:
  - (a) The relocation of the materials is essential. An appropriate building for the housing of the archives should be chosen and made ready for the materials involved. At the same time, an adequate administrative structure should be organized for the control of the material.
  - (b) The archives need to be inventoried and arranged. A certain amount of this work was done by Baker in the 1960's and his list must be updated - checked against what is currently found in the collection. All damaged and disintegrating materials should be preserved, where possible, and in all cases photo copied to insure survival of the information they contain.

B. Supporting Facilities (Park based).

1. A proper Park Reference Library is needed with air conditioned space, a part time reference librarian, adequate inventory control, cataloguing, sign out procedures, access to a copying machine, and supporting routine equipment and furniture (tables for researching, file cabinets for reprints, etc.).
2. A Scientific or Research Program Advisory/Permit Review Board (preferably non-partison, professional, and with non-government representation) to assist with the design of a research plan, establishment of priorities, screening of permits, etc.
3. A research facility with accomodations for visiting scientists could be combined with a nature center.

C. Supporting Institutions or Agencies: Primary Options. While a list of prospective cooperating institutions is enclosed as Appendix D, a select few are dealt with here in rather more detail.

1. Smithsonian Institution.
  - (a) Because of its long history of interest and involvement in the tropical biology of rain forests, and its prior sponsorship of the Smithsonian Breden expeditions to the Lesser Antilles (1951, 1958, 1959), and the Bredin-Archbold Project in Dominica (1964-66), and in light of its current international programs, its vast

reference collections, and the fact that several senior staff have previously experience in Dominica, the Smithsonian Institution offers considerable promise in a supporting, cooperating, counseling and staffing role vis à vis Dominica's National Park research program.

- (b) It must be recognized that the Smithsonian Institution is generally not a funding source but has considerable experience in obtaining funds for a sound project - which could be defined and structured as a joint effort - Smithsonian Institution and DNPS.
- (c) Contact should be made and maintained with the following persons at the Smithsonian in Washington, D.C.:
  1. Dr. David Challinor  
Assistant Secretary for Science: International Program
  2. Dr. Edward Ayensu (see Appendix E)  
Director, Office of Biological Conservation
  3. Dr. F. R. Fosberg  
Botany.

2. University of the West Indies (all three campuses).

- (a) With little more effort than one visit to each campus, it should be possible to arrange for a few graduate students in science, geography, etc., to carry on their thesis research using the park as the "laboratory" and, over time, upgrading the information base of the Park. Providing simple, even rustic accommodations would be a great incentive but not a prerequisite. Possibly the Park could obtain "fellowship" support from UNESCO or AID, for one or two resident graduate students. It is noteworthy that US/AID (Barbados) this year provided \$500,000.00 in fellowship/scholarship funds to the UWI/Cave Hill campus.
- (b) Secondly, perhaps one (or more) of the three UWI science faculties could be induced to establish or contribute to a modest "field research station" in Dominica, as an adjunct to its present Extra-Mural program.
- (c) Lastly, it would be useful to write a letter to selected UWI faculty inviting their attention to the opportunities for research in a rain forest environment, island bio-geography, etc., and soliciting their counsel regarding prospective researchers or graduate students pursuing these research.

3. CATIE (Turrialba, Costa Rica).

Contact: Dr. Gerardo Budowski  
or Dr. Craig McFarland.

4. Organization of American States. Now that Dominica is a member of OAS, it is eligible to obtain services, counsel and funding in the scientific sector. Formal requests by government are required. Research projects range from \$10,000.00 to \$40,000.00.

Secondly, OAS supports a regional "Caribbean Science and Technology Cooperation Committee" and has sponsored several regional seminars on science application, research and policy. Any Dominica National Park System "scientific research" program would be of considerable interest and quite possibly would attract funding support.

Contact: Organization of American States  
1735 Eye Street, NW  
Washington, DC 20006

Mr. Richard E. Saunier  
Program of Regional Development  
(PRD-PRE/710)

or Dr. Alberto Lonardi  
Applied Science Unit  
Department of Scientific Affairs

or Dr. Michael Green  
Applied Science Unit  
Department of Scientific Affairs.

5. Numerous Canadian and U.S. Universities have an interest in the Caribbean as noted by Thorsell (Preliminary Planning Considerations, p. 40). These should all be approached as possible sources of research talent (presumably with their own funding) that could be plugged into the overall park research effort. Institutions with significant Caribbean courses, programs or demonstrated interest in the Caribbean include:

Fairleigh Dickinson University  
Florida International University  
Howard University  
Laval University  
McGill University  
Rutgers University  
University of Florida  
University of Miami  
University of Michigan  
Yale University

## PART II.

### FUNDING AND TECHNICAL SUPPORT POSSIBILITIES

#### Introduction.

The development of successful funding strategies for national park development in emerging small third world countries and territories is one part homework, one part desk work preparing an effective statement of need and objectives and four parts persistence in follow up, re-write, re-submission and more follow up, with a dash of luck and a pinch of patience thrown in. It is also a process that involves establishing a network of developing linkages with third party institutions that can provide needed counsel and skills, and, lastly, overcoming the widely held assumption that local management skills and practices leave much to be desired, are ineffective, inefficient, and that project funds will be wasted, if not diverted for personal gain. Regretably, this latter point is often true and it is the task of the "seeker of funding" to allay the doubts of the donor agency by being as professional as possible in:

1. researching and systematically documenting the problem;
2. obtaining and reviewing prior literature;
3. preparing a proposed scheme of work that is feasible, manageable and realistic in time;
4. preparing a first class professional looking proposal;
5. giving evidence of "follow up" capability, by being persistent and methodical in marketing the proposal.

Furthermore, one must recognize that competition for research funding is stiff. Unlike grants in aid and technical assistance funds which often are allocated on a geographic quota basis, granting agencies look to, check and care about, past performance as an index of the applicant's capability to carry out the proposed effort. For this reason, among others, it behooves park administrators to monitor and manage any ongoing externally funded research projects well, as the "word gets around" if casual or ineffective project management is permitted.

It is difficult to hide mistakes because:

1. the granting community of agencies, foundations, funds, etc. is small;
2. granting institution staff share observations, share proposal reviewers, and exchange proposals for independent review, and
3. are always looking for a reason why not to fund a proposal (selection by a process of elimination) since they generally can fund only a small proportion of the projects submitted.

In preparing proposals always:

1. show a local matching contribution (goods and services in kind should be spelled out and converted to a dollar figure and indicated how arrived at in a budget note) of at least ten percent, preferably higher, or as specified in the guidelines;
2. include separate task descriptions and target dates for each task, reporting requirements, project reviews, etc. preferably supported by a time line graph;
3. list your references, prior relevant studies, preferably annotated;
4. show how the proposed work relates to your objectives.

Selected International Funding and Technical Assistance Sources (Primary).

1. UNESCO. Now that Dominica is eligible, as an independent country, to full membership in the U.N. and representation in the U.N. General Assembly, it needs to establish a Dominican National Commission for UNESCO. This action would result in an annual subvention or grant of about \$40,000 (US) for the support of the Dominican Commission, which can use the funds to:

1. support UNESCO projects in Dominica;
2. prepare proposals for submission to various UNESCO programs;
3. cover operating costs of the Commission;
4. prepare and submit proposals to the UNESCO/MAB program which includes islands (MAB7) biosphere reserves (MAB8) and tropical forests (MAB1).

Additional funds are available from UNESCO (bi-annually) for project support. Proposals must be submitted via the local "National Commission". The most effective and most active National Commission for UNESCO in the Caribbean is Trinidad and Tobago's run by Mrs. Shiela Solomon, Trinidad and Tobago National Commission for UNESCO, 18 Alexandra Street, St. Clair, Trinidad.

Dominica could obtain, once a National Commission is established, upwards of \$100,000 (US) a year for program support, some of which could deal with environmental education, the park, culture, museums, archives, historic restoration, etc. The Commission serves as the clearinghouse and the funding conduit, (generally not as an operating entity). A visit to Trinidad and Tobago and Mrs. Solomon is recommended.

The Man and the Biosphere Programs (MAB) under the aegis of local National Commissions for UNESCO. Most countries have established a National MAB Committee (see Appendix I for a summary of the MAB program and its relationship to park areas in developing countries). Funding is available by application and technical assistance relating to the various MAB topical programs is available from some participating countries with MAB Programs.

Additional funds for environmental education projects are available from UNESCO, Paris under a separate program.

2. UNITED NATIONS ENVIRONMENT PROGRAMME/ECONOMIC COMMISSION FOR LATIN AMERICA (UNEP/ECLA). The UNEP/ECLA Project for Sound Environmental Management in the Wider Caribbean Area is an action plan covering a wide scope of activities and will be produced as a political instrument focusing on environment and development. As part of the project, IUCN has been asked to produce a program document on marine conservation in the wider Caribbean which relates to management and development of the marine environment, and the first draft of this document has just been completed. Additional documentation regarding the overall UNEP program has been difficult to obtain. Dr. Arsenio Rodriquez of the UNEP/ECLA project has urged a concentration of effort by, for example, the U.S. MAB7(B) Directorate on the smaller islands and noted that perhaps UNEP could assist with funding. He noted an additional need to assist the smaller island areas in identifying available funding possibilities for small island eco-development.

UNEP is providing funds for the IOCARIBE marine pollution monitoring plan. The Regional Seas Office of UNEP and IMCO is carrying out a study of Caribbean tanker routes and vulnerability factors that is due to be completed in April 1979.

The first inter-agency meeting for the joint UNEP/ECLA project for sound environmental management in the wider Caribbean, convened by ECLA, was held from 23-25 August 1978 in the United Nations offices at Mexico City. The meeting defined the terms of reference for ten overview studies to be submitted as background information to a meeting of government-designated experts (June 1979), and thereafter to the intergovernment meeting which will consider the draft action plan for adoption (early 1980). The expected contribution of each agency to each overview study, and the relevant financial implications, were also identified, and a coordinating agency was designated for each study. Final coordinated draft overview reports are to be submitted to ECLA on 1 April 1979.

3. CARICOM. Caricom has recently taken the lead in expanding its purview to include:

- a. providing guidance to member states regarding EEZ's (Exclusive Economic Zones, i.e., the 200 mile zone) and pelagic fisheries matters. The entire regional question of the 200 mile EEZ has yet to be dealt with adequately by the environmental community;
- b. serving as a regional clearinghouse for UNESCO sponsored historical and cultural programs, especially relating to museums, historic sites, monuments, etc. CARICOM hosted a workshop on museums and historic

sites in Jamaica, October 4-10, 1978, and appears to be moving toward serving as a Caribbean regional clearinghouse for UNESCO.

4. WORLD BANK. The World Bank has recently developed new Caribbean responsibilities and is heading up a new international inter-agency and inter-country "Caribbean Consultative Group" which includes representation from Caribbean donors and donees (lenders and borrowers), in addition to technical assistance entities such as the U.S. Agency for International Development (AID).

The World Bank's Office of Environmental and Health Affairs is headed by Dr. James Lee, who is assisted by Mr. Ragnar Overby and Dr. Robert Goodland (Chief Ecologist), as well as additional supporting staff.

5. INTER-AMERICAN DEVELOPMENT BANK. The IADB is currently (under the director of Mr. Paul Oechsli) developing both an internal environmental review procedure and formal environmental guidelines, and is clearly following the World Bank model. The checklist for "environmental impacts" has been prepared by Mr. Ronald Barboro, a consultant from Virginia. No attempt has been or is being made to develop specialized guidelines for Caribbean island areas.

6. UNIVERSITY OF THE WEST INDIES (CAVEHILL CAMPUS, BARBADOS). The Institute of Social and Economic Research of the University of the West Indies is currently carrying forward a MAB project that has:

- a. linkages with the Fiji Island demography, population and carrying capacity study headed by Dr. Harold Brookfield of McGill University, which UNESCO has funded since 1973. The Barbados based project deals with elements of a carrying capacity study design;
- b. looked at some of the implications regarding tourism development and its socio-economic impact in the Caribbean.

The Caribbean and Pacific projects deal with studies on man/environment relations in island ecosystems and are directly linked to the MAB 7 program in UNESCO. Details on the UWI project are available from Mrs. Joycelyn Massiah, Officer in Charge, Institute of Social and Economic Research, University of the West Indies, Cavehill Campus, Post Office Box 64, Bridgetown, Barbados.

7. INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT (IIED). In cooperation with UNDP, the IIED recently completed an important study of the environmental procedures and practices of nine development financing agencies, entitled Banking on the Biosphere?

(July, 1978). IIED has also recently carried out a "development and environment" seminar program in cooperation with UNDP. The general framework of this workshop might be useful as a model concept for the Dominica Park System in looking ahead to its program development responsibilities. IIED clearly has focused on strategies to deal with the development focus of funding entities and their policies regarding environmental protection as an element of the development funding process. IIED's recent study, Banking on the Biosphere?, will be available shortly for general distribution. IIED has taken a lead in this area as a kind of investigative/counseling role regarding the environmental implications of ongoing technical assistance and funding programs which are carried forward, both within a bi-lateral and in a multi-lateral framework. IIED's contact persons are Mr. R. Thomas Hoffman or Mr. Robert Blake, IIED, Suite 501, 1302 Eighteenth Street, N.W. Washington, D.C. 20036, telephone (202) 462-0900 (or) 10 Percy Street, London, WIP/ODR, England.

8. CARIBBEAN CONSERVATION ASSOCIATION. The CCA is essentially a coordinating body with both governmental and non-governmental members. Its most active programs are in environmental education and environmental legislation, but many other activities have been and continue to be undertaken as opportunities present themselves. The Association is based in Barbados, and deals with the conservation of both terrestrial and marine resources. CCA has the potential of serving as a broker for grant funds. Their Executive Director is Ms. Jill Sheppard, CCA, Savannah Lodge, The Garrison, St. Michael, Barbados.

9. CARIBBEAN DEVELOPMENT COOPERATION COMMITTEE. CDCC was established in 1975 as a permanent subordinate body (at the ministerial level) for ECLA (Economic Commission for Latin America). CDCC has demonstrated an interest in cultural development, cooperation among member states, and utilization of existing institutions. CDCC is also concerned with planning at the sub-regional level. The Secretariat is located in Port-of-Spain, Trinidad.

#### Selected U.S. Based Funding and Technical Assistance. Options and Sources.

US/AID/Barbados (regional office) recently upgraded to full mission status and headed by Mr. William Wheeler, the AID office in Barbados has an expanding budget (in excess of \$40 million (US)) and quite open to new project proposals. Since one element of the AID program for the Caribbean emphasizes regional linkages, funding for the DNPS, might be more likely to be forthcoming if the DNPS were to develop a cooperative and coordinated program plan with (a) the St. Kitts Brimstone Hill effort and (b) Antigua's English Harbour/Shirley Heights restoration project, and possibly one other "park development" effort.

AID/Barbados also maintains a small grant-in-aid program for which the application is quite simple. Contact either the Hon. Sally Shelton, U.S. Ambassador to Barbados; Mr. William Wheeler, Director, AID, Barbados; or Mr. Gerald Wein, AID, Barbados, Senior Staff.

Other sources are:

1. NATURAL RESOURCES DEFENSE COUNCIL, INC. The NRDC has established a Tropical Forest Working Group which will undertake to maintain close contact with the U.S. Government's Interagency Task Force on Tropical Forests. One of the first tasks of the Tropical Forest Working Group was to meet with the Task Force on the 29th of January, 1979, regarding the development of a proper strategy. Of particular note are the recommendations made at the Tropical Deforestation Conference held in Washington in June 1978. The contact person in NRDC on this subject is Mr. Robert O. Blake. In the documents circulated by NRDC, there is specific reference to linkages with the Man and the Biosphere Program and, particularly, to Project One, "Ecological Affects of Increasing Human Activities in Tropical and Subtropical Forest Ecosystems", and to Project Eight, "Conservation of Natural Areas and the Genetic Material They Contain". Mr. Blake can be contacted at NRDC, 917 15th Street, N.W., Washington, D.C. 20005.

2. THE NATURE CONSERVANCY. The international program of this U.S. based private organization is presently developing a resource survey project which will include marine components. Although specific sites have not been determined at yet, discussions are underway with the Bahamas, British Virgin Islands, the Dominican Republic, and the Dutch Antilles. The contact person is Mr. R. Michael Wright, Director of the Conservancy's International Program. The chief scientist for the Nature Conservancy is Dr. Robert Jenkins. Mr. Wright can be contacted at The Nature Conservancy, Suite 800, 1800 North Kent Street, Arlington, Virginia 22209.

3. EASTERN CARIBBEAN NATURAL AREA MANAGEMENT PROGRAM. (Executed by the Caribbean Conservation Association and the University of Michigan). This three-year program seeks a strategy for the management of natural areas, both terrestrial and marine, in the Lesser Antilles. Projects cover aspects of training, environmental education, planning and eco-development. The program director is Mr. Allen Putney, ECNAMP, C/O West Indies Laboratory, P.O. Box 4010, Christiansted, St. Croix, U.S. Virgin Islands 00820. This project is an element of a related effort, carried out in cooperation with IUCN/WWF, Dr. G. Carleton Ray and Dr. Kenton Miller, to map critical marine habitats and develop a "Strategy for Marine Conservation In the Wider Caribbean" (IUCN Projects #1462 and #1037).

4. ROCKEFELLER BROTHERS FUND. Currently funding several major "resource planning" efforts in the Caribbean, RBF is willing to entertain new proposals but prefers a letter of inquiry as a first step. The contact person is Mr. William Moody, Rockefeller Brothers Fund, 30 Rockefeller Plaza, New York, New York 10020.

See Appendix D for a more extensive listing of possible cooperating institutions and agencies.