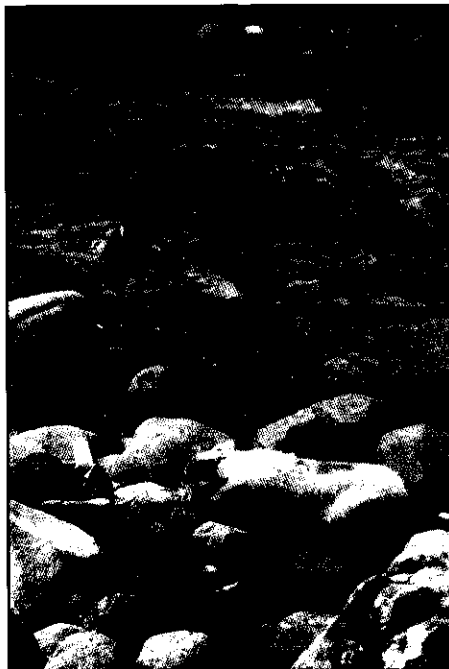


**We need to protect our watersheds  
to safeguard our supplies of freshwater**



**Siltation of rivers after heavy and  
often only moderately heavy rainfall  
is becoming far too frequent**

*Activities:* This project will involve:

- species collection and identification;
- mapping of habitats;
- field surveys to identify impacts and their sources;
- consultation with stakeholders;
- formulation of management plans and programmes.

*Total estimated costs:* EC\$ 80,000/US\$ 29,760 per year over three years.

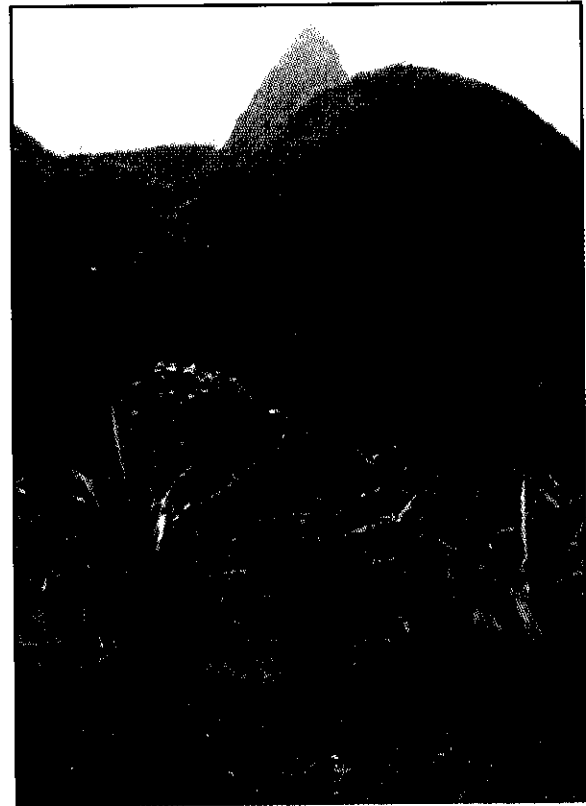
*Implementation and institutional arrangements:* This project will be implemented by the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) in collaboration with the Departments of Fisheries and Forestry.

#### Project 8: Inventory of biological resources of importance to agriculture

*Rationale:* St. Lucia is rich in plant and animal genetic resources, many of which can be exploited for social and economic benefits. The island also has genetic resources that are in danger of being lost due to misuse. The conservation and sustainable use of these resources cannot be planned and organised in the absence of appropriate information. An inventory of plant genetic resources would enable the country to know the resources that are threatened and those that offer potential for economic uses. The island also has other flora and fauna that are of significance to various economic sectors, notably agriculture and health. These include arthropods and micro-organisms, many of which cause or transmit diseases. It is therefore essential that people be aware of the species present on the island.

*Objectives:* The objectives of this project are to:

- develop management systems for selected species of flora and fauna;
- provide the information base required for the design and implementation of conservation and sustainable use programmes;
- establish the baselines needed for monitoring.



**Clearing and subsequent exposure of land for long periods and the practice of monoculture can have negative impacts on biodiversity**

*Activities:* The main steps to be followed in this project are as follows:

- identification of specific targets (ornamental species, medicinal plants, root and tuber crops, herbs and spices, arthropods, and other beneficial and disease-causing organisms);
- design of data base system and research protocols;
- establishment of gene banks for evaluation of germplasm;
- establishment of *in vitro* gene banks and *in situ* sites for conservation of germplasm;
- collection and management of information;
- development of a plant and animal genetic resources management system

*Total estimated costs:* EC\$ 1.4 million/US\$ 520,795.

*Implementation and institutional arrangements:* This project will be coordinated by the Department of Agriculture, in collaboration with relevant regional and international agencies.

Project 9: Study and determination of the carrying capacity of critical areas used for tourism and recreation

*Rationale:* The environments used for land-based eco-tourism and recreation activities vary from the use of forest and hiking trails to visits to waterfalls. These activities create a variety of environmental and user management challenges. One such challenge is that of determining the carrying capacity of critical areas used for eco-tourism and recreation activities, in order to prevent or minimise environmental impacts. Given the growing need for diversification of the St. Lucian economy, the existing trend of upgrading and developing new sites for eco-tourism and recreation will surely be maintained in the short and medium terms. To ensure that the environmental quality of sites and attractions is maintained and that their use is sustainable over the long term, three basic and related components of carrying capacity must be considered. These are: (1) management objectives, (2) visitor attitude and demand, and (3) impact of visitation and other uses on resources.

*Objectives:* The objectives of this project are to:

- determine management objectives for specific eco-tourism/recreation sites;
- determine the appropriate level of use for specific eco-tourism/recreation sites;
- develop and apply the appropriate tools to determine visitor attitudes towards the product presented;

- develop and apply the appropriate methodology and tools to determine physical environmental degradation;
- conserve the natural environment, while allowing for visitor participation;
- generate revenue (optimize revenue).

*Activities:* The main steps to be followed in this project are as follows:

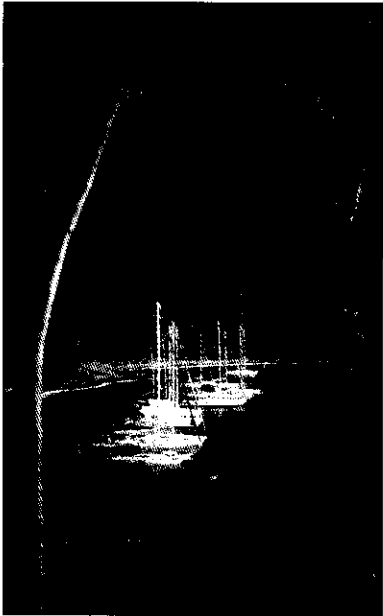
- identification of natural and cultural assets of each site, including flora and fauna as well as physical features that constitute its tourism and recreation potential;
- determination of the operational procedures and the interpretation skills required for the type of product provided;
- setting of standards and values for persons involved in the management of such sites;
- conduct of visitor surveys on a half yearly basis and provision of a monitoring system, including the conduct of surveys to determine the impact of trail management practices
- development of appropriate communication methods and programmes;
- review of management profiles, and assessment of management practices and inventories (methods);
- conduct of inventories of trails and other facilities;
- determination of user fees system adapted to the specific site.

*Estimated costs:* This will be dependent on the number of sites covered.

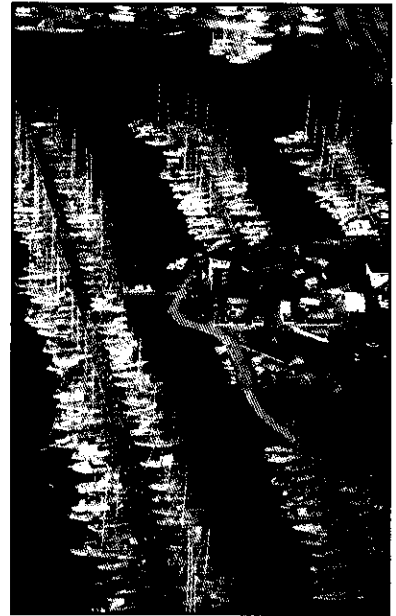
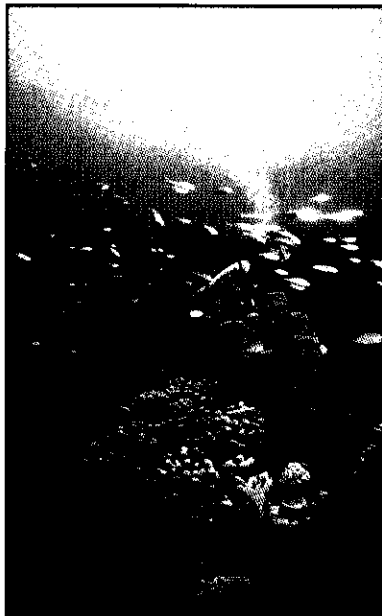
*Implementation and institutional arrangements:* This project will be co-ordinated by the Department of Forestry, working in close collaboration with the Ministry of Tourism, the St. Lucia National Trust and the relevant NGOs and CBOs.

#### Project 10: Design of standards and guidelines of behaviour in nature tourism sites and attractions

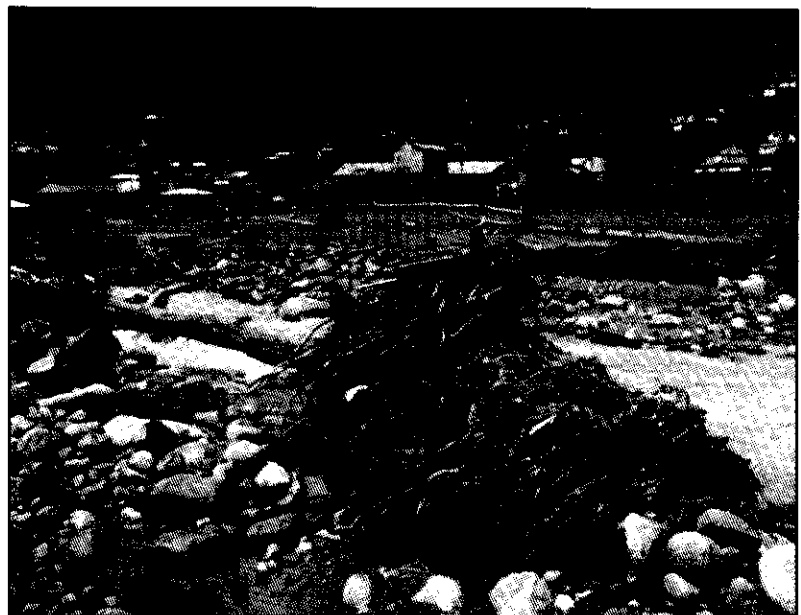
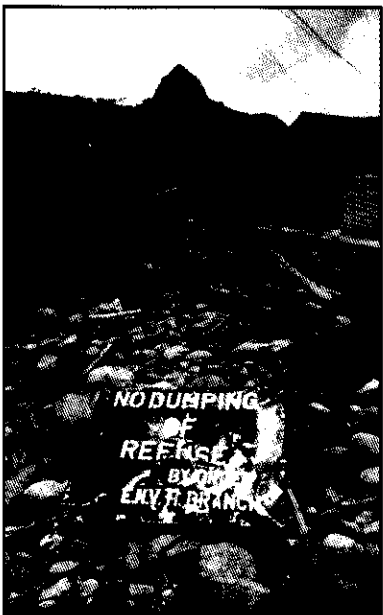
*Rationale:* Human behaviour is the primary source of negative impacts on tourism sites and attractions in sensitive habitats. There is need to provide simple yet effective guidelines in order to guide behaviour and thus maintain a positive relationship between tourism and biodiversity.



Water-based eco-tourism is an important revenue generator



Congestion is becoming increasingly apparent in some areas



Sights like this do not help to foster tourism

*Objectives:* The objectives of this project are to:

- conserve biodiversity in nature tourism sites and attractions;
- maintain the quality of tourism sites and attractions, and enhance visitor experience.

*Activities:* The activities to be undertaken under this project include:

- monitoring of behaviour and impacts in selected representative sites and attractions;
- identification and promotion of alternative behaviour when desired;
- training of managers of sites and attractions;
- development of brochures and other information materials.

*Costs:* To be estimated.

*Implementation and institutional arrangements:* This project will be implemented by the Ministry of Tourism in conjunction with relevant community groups, tour suppliers and destination management companies.

#### Project 11: Review of the national plan for a System of Protected Areas

*Rationale:* The national plan for a System of Protected Areas, which was developed in 1992, constitutes the most comprehensive planning instrument available in St. Lucia in the field of biodiversity conservation and management. It meets one of the main requirements of the CBD, and has served as an informal guide to many planning and natural resource management agencies and initiatives over the past few years. It can form the basis for the implementation of a significant portion of the NBSAP.

*Objectives:* The objectives of this project are to:

- revise the national plan for a System of Protected Areas to ensure that it meets current needs and takes advantages of all available resources and opportunities;
- strengthen linkages between the System of Protected Areas and socio-economic development issues and objectives;
- seek formal endorsement of the plan by the Government of St. Lucia;
- identify the elements needed for the full and effective implementation of the plan.

*Activities:* The main steps to be followed in this project are as follows:

- participatory review of the plan, identification of changes and adaptations needed, and submission of the conclusions of the review to the Cabinet of Ministers;
- identification of training, organisational development, funding and technical requirements for the implementation of the plan, and of specific measures needed to meet these requirements.

*Total estimated costs:* EC\$ 75,000/US\$ 27,900.

*Implementation and institutional arrangements:* This project will be implemented by the Ministry of Agriculture, Forestry and Fisheries, the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and the St. Lucia National Trust.

Project 12. The economics of biodiversity loss and conservation

*Rationale:* While it is acknowledged that non-measurable values provide an important rationale for biodiversity conservation, it remains useful to determine the quantitative values of that diversity. Such information can be critical in the design and implementation of advocacy and management programmes. It can also assist in guiding the identification of policy instruments, by determining and quantifying the economic causes of problems, as well as the measures that can assist in achieving conservation and management objectives.

*Objectives:* The objectives of this project are to:

- improve the effectiveness of biodiversity conservation and management programmes, through the use of appropriate economic instruments;
- assist in conflict management and conflict resolution, by providing data to assess the interests and needs of various parties.

*Activities:* The main steps to be followed in this project are as follows:

- study of the economic causes of biodiversity loss, with particular attention to: perverse incentives; insecure property rights; growth in demands for resources; inequitable access to resources and distribution of results;
- quantification of the value of the various components of biodiversity;



- identification and assessment of the economic instruments available to assist with biodiversity conservation, including incentives (user fees, taxes, permits, subsidies, compensation, liability and credit), controls (quotas as well as spatial and temporal limits to entry, use and access) and financing mechanisms (revenue generation, user fees, loans and debt-for-nature swaps);
- dissemination of results and application of fiscal and financial instruments identified during this study.

*Total estimated costs: EC\$ 85,000/US\$ 31,620.*

*Implementation and institutional arrangements:* This project will be implemented by the Ministry of Agriculture, Forestry and Fisheries and the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), working in close collaboration with other relevant organizations..

### Project 13: Training

*Rationale:* In order to implement the NBSAP and to meet the broader challenges of natural resource management and conservation in St. Lucia, there is need for a concerted effort to build, acquire and enhance the necessary skills among a range of organisations. When skills are needed but not available on-island, there may also be need to acquire them.

*Objectives:* The objectives of this project are to:

- strengthen the capacity of organisations to participate in the management and conservation of biological diversity;
- reduce the dependency of St. Lucian organisations on external expertise to conduct biodiversity-related work.

*Activities:* Domains and fields in which training will be given priority include the following:

- herbarium management;
- taxonomy;
- ecosystem management and restoration;
- research and monitoring techniques.

The project will involve the formulation of a detailed training strategy and the identification of implementation mechanisms.

*Total estimated costs:* EC\$ 45,000/US\$ 16,740 for the formulation of the training strategy; other costs to be determined on the basis of the contents of the strategy and specific needs identified.

*Implementation and institutional arrangements:* This project will be implemented jointly by the Ministry of Agriculture, Forestry and Fisheries, the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and the Ministry of Education, Human Resource Development, Youth and Sports.

Project 14: Establishment of management programmes for the protection of the endemic and rare species of birds

*Rationale:* There are a few threatened bird species in St. Lucia that require immediate and active intervention to ensure their survival. A major hindrance however is the fact that not enough is known about these species to make effective management recommendations. This situation is particularly difficult for species whose range occurs outside protected areas (forest reserves). The species to be studied include the White-breasted Thrasher (*Ramphocinclus brachyurus*), Rufous Nightjar (*Caprimulgus rufus*), St. Lucia Oriole (*Icterus laudabilis*), House Wren (*Troglodytes aedon*) and the St. Lucia Blackfinch (*Melanospiza richardsoni*).

*Objectives:* The objectives of the project are to:

- define and protect the habitats of these species;
- increase public sensitization on the status and need to conserve these species;
- enhance the contribution of endemic and rare bird species to St. Lucia's eco-tourism product and experience.

*Activities:* The main components to be carried out in this project are as follows:

- mapping of habitats and determination of land ownership and land tenure issues within rare bird habitats;
- consultations with relevant stakeholders;
- training of project personnel in applied wildlife research techniques, data acquisition and analysis;
- population censuses and monitoring;
- research on reproductive biology and habitat ecology;

- participatory formulation of management plans and interventions that include establishment of management areas, public education and monitoring and linking conservation to potential eco-tourism investment;
- establishment of Nature Reserves as appropriate.

*Total estimated costs:* EC\$ 850,000/US\$ 316,197.

*Implementation and institutional arrangements:* This project will be implemented by the Department of Forestry, working in close collaboration with local communities. The institutional arrangements for the management of the reserves will be determined as a result of the participatory planning process mentioned above.

#### Project 15: Establishment of a turtle monitoring programme

*Rationale:* For several years, there has been a moratorium on the harvesting of marine turtles in St. Lucia. In order to provide the basis for the formulation of future management programmes, there is need to continually monitor and evaluate marine sea turtle stocks. However, given the demands of fishers and some members of the general public for an open/close season, there is an urgent need to determine the status of the turtle population.

*Objectives:* The objectives of the project are to:

- assess the status of the marine turtle resources in St. Lucia and provide the information required for management;
- develop a management strategy for marine turtles.

*Activities:* The project will:

- assess population densities and the impacts of various human activities, including fishing, tourism, human settlements and agriculture;
- conduct a genetic analysis of turtle resources;
- identify and describe major nesting beaches on St. Lucia;
- identify the migratory patterns of the various species found in St. Lucia, using DNA markers;
- identify existing threats to the nesting of turtles;

- conduct a survey of communities that have traditionally harvested turtles and determine the socio-economic impact of various management regimes on these communities;
- conduct frequency surveys of nesting on major nesting beaches;
- determine peak nesting periods;
- conduct underwater surveys to determine feeding grounds, migratory patterns and fishing threats.

*Total estimated costs:* EC\$ 150,000/US\$ 55,799.

*Implementation and institutional arrangements:* This project will be implemented by the Department of Fisheries in collaboration with community groups.

Project 16: Establishment of a photographic and videographic data base on biodiversity

*Rationale:* Photography and videography are indispensable tools for monitoring and management. They also serve education and public awareness activities, providing the materials to illustrate and communicate information about biological diversity. The collection and management of photographic and videographic data require special facilities and skills which can best be provided if they are assembled in one location. In the absence of such skills and facilities, biodiversity-related programmes are less effective, and the quality of their outputs suffers.

*Objectives:* The objectives of this project are to:

- establish a photographic and videographic data base on biological diversity in St. Lucia;
- provide materials in support of monitoring programmes;
- provide materials in support of educational and promotional activities.

*Activities:* This project will be implemented in phases, as follows:

- identification of an agency to serve as coordinating and implementing body;
- establishment of facilities for storage, filing and retrieval, and training of staff as required;
- compilation of materials available from participating agencies;

- development of procedures and protocols for use and publication of materials by third parties;
- design and implementation of a project to develop a photographic documentation of all rivers, wetlands, forest types and marine ecosystems in St. Lucia

*Costs:* To be estimated.

*Implementation and institutional arrangements:* This project will be coordinated by the Ministry of Agriculture, Forestry and Fisheries and the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), working in close collaboration with other relevant organizations.

Project 17: Education, public awareness and participation

*Rationale:* The objectives of the National Biodiversity Strategy and Action Plan cannot be achieved in the absence of a full level of awareness among all members of the public. In addition, all citizens need to be equipped with the knowledge and skills that will allow them to contribute to the conservation and management of the country's biodiversity. Formal and informal means of education and communication must therefore be used.

*Objectives:* The objectives of this project are to:

- sensitise the general public, including visitors to the island, on the importance of biodiversity;
- generate appropriate behaviour;
- create support for biodiversity conservation and management programmes;
- encourage active community participation in biodiversity conservation and management;
- increase the effectiveness of biodiversity conservation and management programmes, as a result of a greater involvement of the public;
- stimulate community participation in biodiversity conservation and management.

*Activities:* The main steps to be followed in this project are as follows:

- conduct of advertising campaigns and media programmes;

- formulate an action plan and strategy in collaboration with the Ministry of Education for the development, production and dissemination of educational materials;
- training of teachers in the use of these materials;
- strengthening of community groups involved or interested in biodiversity conservation and sustainable use;
- establishment of a small grants fund to support community-based activities in biodiversity conservation;
- provision of information to community organisations to enhance their capacity to participate in biodiversity conservation programmes;
- facilitation of networking among community groups through regular meetings, newsletters and joint activities;
- facilitation of local planning processes to formulate local-level responses to issues affecting biodiversity, and to design projects and actions aimed at conservation and sustainable use.

*Total estimated costs: EC\$ 200,000/US\$ 74,399.*

*Implementation and institutional arrangements:* This project will be implemented jointly by the Ministry of Agriculture, Forestry and Fisheries, the St. Lucia National Trust, the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and other relevant agencies.

#### Project 18: Upgrading of national herbarium, and creation of sub-collections

*Rationale:* The National Herbarium of St. Lucia is administered by the Department of Forestry. It presently has a collection at least 1,300 species of native flora species which are stored in four metal filing cabinets in an air conditioned room. The herbarium also has a medium sized deep freezer which is used for storage of field collected flora samples. There is no separation between the floor area where the filing cabinets are located, the freezer and the working and drying area. Presently, the herbarium is managed by a forest officer who has no formal training in herbarium management, but has learnt through experience. This same officer acts as curator, technician and collector, and therefore is the custodian of the collection. There is no other significant plant collection on the island, neither does St. Lucia have its own published flora. The main reference work are regional studies which are incomplete and somewhat outdated, especially as some of the botanical names used are no longer valid. The National Herbarium will become an invaluable source of information on St. Lucia's indigenous flora to a wide range of user groups from schools to research institutions.