

**MANAGEMENT FRAMEWORK**  
**FOR**  
**A SYSTEM OF MARINE PROTECTED AREAS**  
**FOR THE**  
**U.S. VIRGIN ISLANDS**

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**For:**  
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**Division of Coastal Zone Management**  
**Government of the U.S. Virgin Islands**

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## CONTENTS

	<u>Page #</u>
List of Tables	4
List of Figures	4
List of Maps	4
List of Acronyms	5
Acknowledgements	6
Chapter 1. INTRODUCTION	7
1.1 Background	7
1.2 System of Protected Areas for the USVI	8
<b>PART I: POLICY FRAMEWORK</b>	<b>11</b>
Chapter 2. MARINE RESOURCES AND MARINE PROTECTED AREAS	12
Chapter 3. GOALS OF A SYSTEM OF MARINE PROTECTED AREAS	15
Chapter 4. TYPES OF MARINE PROTECTED AREAS	18
4.1 Existing Situation	18
4.2 Desired Situation	19
4.3 Adjustments Required to Achieve the Desired Situation	20
Chapter 5. LEGAL FRAMEWORK	21
5.1 Existing Situation	21
5.2 Desired Situation	25
5.3 Adjustments Required to Achieve the Desired Situation	26
Chapter 6. INSTITUTIONAL FRAMEWORK	28
6.1 Existing Situation	28
6.2 Desired Situation	31
6.3 Adjustments Required to Achieve the Desired Situation	36
Chapter 7. PLANNING PROTECTED AREAS	37
7.1 System-Wide Planning	37
7.2 Site Selection and Establishment	41
7.3 Site Planning	43

Chapter 8.	FINANCIAL MANAGEMENT	45
	8.1 Existing Situation	45
	8.2 Desired Situation	46
<b>PART II:</b>	<b>MARINE PROTECTED AREAS OF THE USVI</b>	49
Chapter 9.	EXISTING MARINE AND COASTAL PROTECTED AREAS	50
Chapter 10.	PROPOSED MARINE PROTECTED AREAS	81
<b>PART III:</b>	<b>SYSTEM DEVELOPMENT</b>	82
Chapter 11.	GAPS IN THE EXISTING FRAMEWORK	83
Chapter 12.	REQUIREMENTS FOR SYSTEM DEVELOPMENT	85
	List of references	88
<b>APPENDICES</b>		
Appendix 1:	Institutions and Persons Consulted	91
Appendix 2:	Marine Protected Areas Presidential Executive Order 13158	92
Appendix 3:	Potential Benefits of Marine Reserves	96
Appendix 4:	IUCN Protected Area Categories	98

### **List of Tables**

	<u>Page #</u>
Table 1: Threats to Marine Biodiversity	13
Table 2: Selection Criteria for USVI Marine Protected Areas	42

### **List of Figures**

	<u>Page #</u>
Figure 1: Planning Levels for the Protected Area System	38
Box 1: Rationale for Protected Area System Planning	9

### **List of Maps**

Map 1: Existing Marine Protected Areas – St. Croix	
Map 2: Existing Marine Protected Areas – St. John and St. Thomas	
Map 3: Potential Marine Protected Areas – St. Croix	
Map 4: Potential Marine Protected Areas – St. John	
Map 5: Potential Marine Protected Areas – St. Thomas	

## LIST OF ACRONYMS

APC	Area of Particular Concern
APR	Area of Preservation and Restoration
CBD	Convention on Biological Diversity
DCCA	Department of Conservation and Cultural Affairs
DHPR	Department of Housing, Parks and Recreation
DPNR	Department of Planning and Natural Resources
DPNR-DFW	Department of Planning and Natural Resources, Division of Fish & Wildlife
DP&P	Department of Property and Procurement
DPW	Department of Public Works
ICRI	International Coral Reef Initiative
MPA	Marine Protected Area
NGO	Non-governmental Organization
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
PAA	Protected Area Authority
PAAC	Protected Area Advisory Council
SNA	Significant Natural Area
SPAW	Specially Protected Areas and Wildlife
TPS	Territorial Park System
USVI	U.S. Virgin Islands
UVI	University of the Virgin Islands
VI	Virgin Islands
VICD	Virgin Islands Conservation District
VI-DoA	Virgin Islands Department of Agriculture
VI-DoE	Virgin Islands Department of Education
VI-DoT	Virgin Islands Department of Tourism
VIPA	Virgin Islands Port Authority
VITEMA	Virgin Islands Territorial Emergency Management Agency
WAPA	Water and Power Authority

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This report was prepared by Lloyd Gardner, Consultant to the University of the Virgin Islands (UVI), in his capacity as Coordinator of the VI Marine Park Project. The management framework outlined in this report does not necessarily reflect the official position of the UVI or the Department of Planning and Natural Resources.

This report is a recommendation to the Government of the U.S. Virgin Islands for the establishment and management of a system of protected areas in the U.S. Virgin islands (USVI).

The report draws on existing policies and legislation, on previous work done by a number of persons and government agencies concerning the development of a VI park system, and on the experiences of a number of persons previously and presently involved in protected areas policy and planning. Lastly, the report incorporates the recommendations of a number of public, private, and civil society institutions.

We take this opportunity to acknowledge the inputs by various institutions and individuals that participated in this process (Appendix 1).

We hope this report effectively captures and represents your inputs.

Thank You.

Lloyd Gardner.

## **CHAPTER 1: INTRODUCTION**

### **1.1 Background**

This report is presented as an output of the VI Marine Park Project. The project is an initiative of the Government of the U.S. Virgin Islands, implemented as part of the National Action Plan to Conserve Coral Reefs.

The U.S. National Action Plan to Conserve Coral Reefs was developed to guide the sustainable use of coral reef ecosystems within the jurisdiction of the United States of America, including its Territories and Commonwealths. Sustainable use simply means that coral reef ecosystems should be used and managed in such a manner as to ensure the security of the economic, cultural, social, and environmental values and benefits of such ecosystems in perpetuity.

The overall goal of the VI Marine Park Project is to establish the objectives, policies, and procedures for management of marine resources within the territorial waters of the U.S. Virgin Islands (USVI), through the development of marine protected areas.

The VI Marine Park Project involves four main components:

- A Resource Description Report, prepared by Island Resources Foundation (IRF);
- A Socio-economic Assessment, prepared by Hinds Unlimited;
- A Management Framework for a System of Marine Protected Areas, prepared by Lloyd Gardner of Environmental Support Services, LLC; and
- A Management Plan for the East End Marine Park, St. Croix, prepared by The Nature Conservancy (TNC).

A protected area is defined as "*an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means*" (IUCN, 1994). The main purposes for establishment and management of protected areas are identified as:

- Scientific research;
- Wilderness protection;
- Preservation of species and genetic diversity;
- Maintenance of environmental services;
- Protection of specific natural and cultural features;
- Tourism and recreation;
- Education;
- Sustainable use of resources from natural ecosystems; and
- Maintenance of cultural and traditional attributes.

There are several variations of a definition for marine protected areas (Kelleher 1999). The May 26, 2000 Marine Protected Areas Executive Order (Appendix 2) signed by President Clinton defines marine protected areas as “... *any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein*” (National Research Council 2001). Even this definition focuses on resources, omitting the implications for the wider ecosystem functions and benefits. As such, this report adopts the simple definition offered by Day & Roff, 2000, which defines a marine protected area as “*any marine area set aside under legislation to protect marine values*”.

Due to the increasing number of protected areas, the increased demand on protected area resources, the fact that a number of institutions directly manage and/or monitor the status of those resources, and the recognition that many threats originate outside the protected area, there is increasing awareness of the need to adopt a systems approach to protected area management. The establishment of a national system of protected areas is supposed to rationalize the approach to protected area planning, as well as link conservation priorities and efforts to other development strategies and activities. A management plan focused at the system level is usually referred to as a System Plan.

## **1.2 System of Protected Areas for the USVI**

The basic principle underlying system planning for protected areas is that protected areas should be an integral part of a wider natural resource and land use management strategy, and that planning and management of several protected areas require a coordinated approach.

The above principle encapsulates the concepts that (a) natural resource management strategies should be part of a wider macro-economic planning process, and (b) individual units are unable to address the range of threats that are societal and originate outside the units. A system plan is therefore said to have the following uses (Davey 1998):

- Clarifying objectives;
- Promoting achievement of objectives;
- Identifying options and their implications;
- Encouraging systematic evaluation of options;
- Increasing understanding of the issues;
- Defining future management issues;
- Predicting and orienting future actions;
- Identifying priorities for investment;
- Coordinating a range of inputs;
- Building and sustaining commitment;
- Creating and maintaining partnerships; and
- Establishing a baseline for evaluation of future action, and for monitoring.

The range of reasons for protected areas system planning is well established (Box 1), and all are of relevance to the USVI.

**Box I**  
**Reasons for Adopting a System Approach to Protected Area Planning**

Adrian Davey, 1998

- ◆ To relate protected areas to national priorities, and to prioritise different aspects of protected area development;
- ◆ To facilitate access to international and national funding, by defining priorities for investment in protected areas and increasing the level of confidence in the efficient use of funds and resources;
- ◆ To get away from a case by case, ad hoc, approach to resource management decision making;
- ◆ To target proposed additions to the protected area estate in a more rational and persuasive manner than ad hoc planning;
- ◆ To facilitate integration with other relevant planning strategies, such as those for national tourism, national biodiversity conservation, or sustainable development;
- ◆ To help resolve conflicts, assist in making decisions relating to trade-offs, clarify roles and responsibilities of different stakeholders, and facilitate diverse stakeholder involvement;
- ◆ To provide a broader perspective for addressing site-specific issues, such as tourism management;
- ◆ To enhance the effectiveness and efficiency of the way in which budgets are developed and spent;
- ◆ To assist in meeting obligations under international treaties;
- ◆ To assist countries to be more proactive in conservation management, and in developing effective protected area systems;
- ◆ To encourage consideration of a "system" which incorporates formal protected areas and areas outside of protected areas;
- ◆ To provide a structured framework for a system of protected areas, ranging from areas managed for strict conservation to areas managed for a range of conservation and appropriate ecologically-sound activities;
- ◆ To assist protected area agencies to build political support for protected areas as a worthwhile concern;
- ◆ To define a better process of decentralisation and regionalisation of protected area activities, resources and responsibilities, including the involvement of NGOs and the private sector; and
- ◆ To foster transboundary collaboration.

However, this report is not a system plan, due to the following factors:

- a. This VI Marine Park Project focuses on the marine resources, and hence marine protected areas (MPAs). However, there is overwhelming evidence that inshore marine resources cannot be adequately protected without management of land-based activities. As such, any protected area system plan must incorporate terrestrial protected areas, as well as address the issues of land management and development activities/pressures.
- b. The full range of possibilities concerning public participation in environmental management has not been clearly articulated in the past. Clearly the role of civil society institutions in the protected area management process has not been fully explored. The community needs to arrive at some basic agreements on the issue before such roles can be outlined in a system plan.
- c. Previous focus on protected areas in the USVI has been skewed primarily towards recreation. With the increased awareness of the need to address ecological and resource-specific issues (such as overfishing), there is increasing focus on establishment of protected areas to address a wider range of economic, social, and environmental objectives.

Based on the above, this Management Framework should be viewed as a critical first step in the preparation of a system plan.

This report is presented to the Government of the U.S. Virgin Islands for adoption, following which it becomes a statement of government policy, and provides the guidance for the development of a comprehensive system plan for protected areas in the USVI.

This document points the way forward, but achieving the full range of benefits from a comprehensive system of protected areas will require the cooperation of all peoples of the USVI, with government institutions working in full partnership with non-governmental organizations (NGOs), community groups, private sector organizations, and private citizens.

## **PART I: POLICY FRAMEWORK**

While there has been a substantial amount of previous discussion and effort concerning a Territorial Park System (TPS), there is no clear government policy that articulates the policy framework for management of a system of protected areas. The policy statement focused on this particular topic is usually contained in a “Policy and Plan for a System of Protected Areas”.

Some of the chapters in this Part I of the report present information in a manner that describes the existing situation, the recommended policy framework, and the efforts that are required to transform the existing situation into the desired system management framework.

## **CHAPTER 2: MARINE RESOURCES AND MARINE PROTECTED AREAS**

The marine environment (oceans, coastal waters, and estuaries) covers 71% of the planet, and therefore provides a great abundance and diversity of foods, raw materials, and services.

**Food from marine sources** - Of the 99.5 metric tons of finfish and shellfish caught in 1989, 86% (85.8 metric tons) came from the marine environment, with the remainder from inland waters (FAO 1991). Other materials (irish moss, etc.) have been used for food and drink.

**Medicines from the sea** - Of the 33 animal phyla, 32 occur in the sea, and 15 are exclusively marine (Norse 1993). The discovery of anti-viral and anti-tumor agents from marine organisms has spurred greater interest in the potential of marine organisms for medical research.

**Services from the sea** - The marine environment provides a wide range of goods for consumption and as raw materials. However, one of the most significant contributions of the marine environment is in the form of ecosystem services, including:

- Coastal protection (mangroves, seagrass beds, coral reefs);
- Transportation (cargo and passengers);
- Stabilization of global climate (control of carbon dioxide concentration in the atmosphere by phytoplankton at the oceans' surface);
- Recreational/amenity value (tourism); and
- Waste treatment and disposal.

However, the Caribbean Sea and the resources it contains are threatened by a number of factors, some natural, most anthropogenic in origin. These sources can be grouped as follows:

- Natural events (storms, coral bleaching, diseases);
- Over-exploitation and destructive harvesting practices;
- Coastal development;
- Pollution derived from land-based sources (sediments, chemicals, nutrients);
- Maritime activities (pollution, physical damage); and
- Population increase (increased urbanization and its impacts).

Establishment of marine protected areas (MPAs) has been used as an effective mechanism to reduce the threats to marine resources. This is done primarily through (a) the protection of biological communities and habitats, (b) through the protection of selected species of wildlife, and (c) through the resolution of use and user conflicts.

However, even with the numerous benefits provided by MPAs (Appendix 3), alone they cannot protect the entire marine environment. This results from the fact that MPAs usually cover less than 10% of the marine area of a state. The goal established for the USA is to achieve 20% coverage. More importantly, MPAs cannot address many of the issues related to threats to marine resources (Table 1).

**Table 1: Threats to Marine Biodiversity**

<b>Risk or Speed of Degradation of Biodiversity</b>	<b>Threatening Process</b>	<b>Can the Risk to Biodiversity be Reduced by an MPA?</b>
<b>High</b>  <b>Low</b>	Physical habitat destruction (e.g. dredging)	Yes
	Blast fishing using explosives	Yes
	Toxic pollution (e.g. chemical spills)	Maybe
	Chemical fishing (e.g. using cyanide)	Yes
	Introduction of exotic organisms	Maybe
	Loss of genetic variability	Yes
	Biological invasions	Maybe
	Overexploitation/overfishing	Yes
	Bioaccumulation of noxious materials (e.g. heavy metals)	Maybe
	Indirect pollution (e.g. pesticides, herbicides in runoff)	Maybe
	Disease/parasite infection	Maybe
	Depletion of spawning sites	Yes
	Sea dumping of dredge spoil	Yes
	Incidental take/by-catch	Yes
	Destruction of adjoining watersheds	Maybe
	Impacts of adjacent land-use practices (e.g. aquaculture)	Maybe
	Effluent discharge (e.g. sewage, pulp/paper mill effluent)	Maybe
	Natural events (e.g. cyclones, tsunamis)	No
	Direct marine pollution, ocean dumping	Yes
	Downstream impacts from dams, dikes, etc.	Maybe
	Net/debris entanglement	Maybe
	Siltation	Maybe
	Noise pollution	Maybe
	Toxic blooms/red tides	Maybe
	Thermal pollution	Yes
	Rising sea temperatures (climatic change)	No
	Rising sea level (climatic change)	No
	Salinity changes	No
	Take by Aboriginal people	Maybe

Source: Day & Roff 2000

Major national, regional, and international initiatives to reduce the threats to marine resources include:

- **The Convention on Biological Diversity (CBD):** This international convention was established to protect biological diversity, primarily through the protection of both species and ecosystems. The importance accorded this convention is contained in the recognition that “*biological resources are vital to humanity’s economic and social development*”. The implementation of this convention includes a focus on marine biodiversity.
- **Regional Programme on Specially Protected Areas and Wildlife (SPA):** The SPA Programme implements the provision of the SPA Protocol, under the Cartagena Convention. In addition to protected areas and wildlife, the Caribbean component of ICRI is coordinated through this programme.
- **The International Coral Reef Initiative (ICRI):** ICRI is a global initiative to address the rapid degradation of coral reefs. Launched in 1994, ICRI is a partnership among governments, international intergovernmental organizations, and non-governmental organizations. The U.S.A. has developed a national action plan, within which is a US All Islands Coral Reef Initiative Strategy. The VI Marine Park Project is part of the coral reef monitoring and assessment program of the U.S. Virgin Islands.

Within the USVI, initiatives have included:

- Establishment of a number of marine reserves and sanctuaries;
- Establishment of two marine national monuments;
- Designation of eighteen Areas of Particular Concern (APCs);
- Development of a Non-point Source Pollution Program;
- Fisheries management strategies;
- Oil spill contingency planning; and
- Development of a major permits process for Tier 1 and marine development activities, with a similar permitting process adopted for Tier 2 development activities.

Given the above interventions, as well as the impressions expressed by many persons that there is already too much regulation, what are the reasons for, and benefits of, having a system of marine protected areas?

### **CHAPTER 3: GOALS OF A SYSTEM OF MARINE PROTECTED AREAS**

The system of protected areas for the U.S. Virgin Islands (USVI) should support the development of the community by providing opportunities and benefits for meeting general economic, conservation, and social goals. The system, both as a whole and as individual sites, will provide a strategic and essential mechanism for:

- a. Environmental protection;
- b. Demonstrating and ensuring sustainable use of important natural resources;
- c. Expanding and diversifying the recreational opportunities for residents and visitors;
- d. Assisting in the diversification of economic opportunities;
- e. Protecting important cultural and natural heritage; and
- f. Improving education, awareness, and training.

In pursuit of the above goals, the following principles should be applied:

- The integrity of important ecosystems and other natural and cultural resources must be protected.
- Resources must be used in a sustainable manner.
- Management strategies should promote social harmony.
- Initiatives and actions should be sustainable.
- Where applicable, the precautionary principle should be applied.

#### **GOAL 1: Economic Development**

*Primary Objective:* To expand and diversify the nature-based component of the VI economy.

By:

- Protecting the supply and quality of natural resources that support the economy, in particular water and air.
- Improving the livelihoods of individuals and the community by increasing their earning potential.
- Contributing to the sustainability of the the tourism sector by protecting beaches, coral reefs, coastal water quality, wildlife, and providing opportunities for nature interpretation and experiencing VI cultural heritage.
- Promoting sustainable harvesting practices.

#### **GOAL 2: Environmental Conservation**

*Primary Objective:* To conserve the natural and cultural heritage for the benefit of present and future generations of Virgin Islanders.

By:

- Protecting representative areas of indigenous flora and fauna, natural communities, and ecosystems.
- Protecting areas representing major components of the natural and cultural heritage of the USVI; inclusive of prominent and/or unique natural features, landscapes and seascapes, scenic areas, historic artifacts, buildings, and historic and archeological sites.
- Protecting and enhancing unique ecosystems that are fragile or are threatened by development and other human activities.

### **GOAL 3: Sustainable Resource Use**

*Primary Objective:* To protect natural resources and ecosystems that provide goods and services.

By:

- Protecting and restoring watersheds, wetlands, coral reefs, and other important ecosystems that provide important economic resources, such as fish, wildlife, water, and other similar goods.
- Protecting ecosystems, such as coral reefs, wetlands, and forests that maintain life-support systems and reduce the impacts of natural disasters.
- Providing opportunities for research in sustainable resource use.

### **GOAL 4: Recreation**

*Primary Objective:* To provide recreational opportunities to maintain and improve the quality of life for residents and visitors, for present and future generations.

By:

- Promoting recreational opportunities for residents and visitors that are compatible with the objectives of sustainable resource use.
- Protecting natural areas to meet the public demand for passive recreational uses.
- Promoting appreciation of historic and cultural resources by providing opportunities for interpretation and enjoyment of those resources.
- Promoting equal opportunities for access to recreational areas, particularly beaches and historical sites.
- Protecting outstanding scenic vistas, landscapes, and seascapes.

### **GOAL 5: Education**

*Primary Objective:* To improve understanding of the life-supporting processes and other benefits provided by natural ecosystems.

By:

- Preserving natural ecosystems and providing opportunities for ecological and other scientific research.
- Providing opportunities for environmental education.
- Promoting appreciation of historical and cultural resources.
- Providing opportunities for research on the socio-economic impact of protected areas on local communities.

**GOAL 6: Community Development**

*Primary Objective:* To generate local support for protected areas.

By:

- Providing for the participation of all interested groups and individuals in all aspects of protected area planning and management.
- Demonstrating that protected areas generate improved livelihoods and other benefits for local communities.

## **CHAPTER 4: TYPES OF MARINE PROTECTED AREAS**

The marine protected areas (MPAs) currently in existence in the U.S Virgin Islands (USVI) are either marine reserves or national monuments. However, many sites that are commonly referred to as coastal protected areas have marine components. These are currently either national parks or areas of particular concern (APCs). These sites were established by both Federal laws and USVI laws, and are managed by either the National Parks Service (NPS) or the Department of Planning and Natural Resources, Division of Fish & Wildlife (DPNR-DFW). DPNR's Division of Environmental Enforcement provides enforcement support to both local and Federal agencies.

The future protected areas system of the USVI should include representative examples of the natural resources, unique natural features, and outstanding landscapes and seascapes. The system should protect valued ecosystems, features, and species, and provide linkages to each other, as well as to other ecosystems outside the boundaries of protected areas.

The classification, designation, and management objectives of protected areas should reflect their importance to the USVI, at the same time being cognizant of national and international systems of classification. Due to the importance of national, regional, and international environmental initiatives and multilateral environmental arrangements, where possible, the local classification will follow the guidelines developed by IUCN-The World Conservation Union (Appendix 4). Where a local protected area qualifies for designation under a national or international system, such designation should be pursued.

### **4.1 Existing Situation**

Types of MPAs and coastal protected areas in existence in the USVI (Chapter 9) include the following:

- National Monuments;
- Wildlife Sanctuaries;
- Marine Reserves;
- Marine Conservation Areas/Districts;
- Significant Natural Areas;
- National Parks; and
- Areas of Particular Concern and Areas of Preservation and Restoration.

The current situation facing these areas is characterized by the following:

- The presence of gaps in the coverage of ecosystem types, as well as types of MPAs;
- The primary focus for areas managed by the Government of the USVI being species protection;
- Site design is not based on ecosystem units in many cases;
- There is an apparent lack of correlation between areas, in terms of relative locations and management objectives;

- Development activity (primarily tourism projects) sometimes result in the loss of areas identified as potential sites for protected areas;
- Development activity presents an ongoing significant threat to the integrity of existing and proposed protected area sites; and
- There is inadequate institutional coordination for natural resources and protected area management.

The current approach to MPA designation and management often creates conflicts between the Federal and USVI Governments, and between government and affected stakeholders.

Designation of protected areas by both Federal and USVI government agencies appear to be opportunistic, rather than being logical steps in the expansion of an agreed system of protected areas relevant to the development needs and conservation and economic strategies of the USVI.

## **4.2 Desired Situation**

The system of MPAs<sup>1</sup> in the USVI will include four basic types of areas; national monuments, marine parks, marine reserves, and marine sanctuaries. These four basic types will continue to be supplemented by the existing and future coastal protected areas designated as national parks and areas of particular concern (APCs).

### **National Monuments<sup>2</sup>**

These are sites or areas of, or containing, natural, historic, or cultural features that are of outstanding value because of its inherent rarity, exceptional aesthetic qualities, ecological significance, or cultural significance. Primary uses: protection of natural and/or cultural values, allowing compatible research, education, and public access/recreation.

### **Marine Parks**

These are natural areas displaying unique biodiversity or ecological value and recreational potential. Primary uses: protection of natural and recreational values, allowing compatible recreational, scientific research, and educational uses.

### **Marine Reserves<sup>3</sup>**

Marine reserves are areas designated specifically to protect selected species, resources, or areas from exploitation. Primary use: species and/or resource restoration, allowing scientific research and education.

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<sup>1</sup> It was previously noted that a system composed of only MPAs is unsustainable in the USVI. As such, it is anticipated that the protected area system will be expanded to include terrestrial sites, thus enabling the establishment of a comprehensive and logical system.

<sup>2</sup> National Monuments are usually designated by the Federal Government.

<sup>3</sup> This category also includes Fishery Management Areas.

### **Marine Sanctuaries<sup>4</sup>**

Marine sanctuaries are areas containing unique biodiversity, are required for critical life stages of important species of wildlife, or possessing other unique ecological values. Primary use: maintenance of the ecological integrity of the site, allowing compatible research and educational uses.

### **4.3 Adjustments Required to Achieve the Desired Situation**

To change the existing situation concerning MPAs in the USVI to one that meets the goals of the system of MPAs, a number of actions have to be undertaken. The main actions required are:

- a. Undertake a gap analysis to ensure that all the important/critical resources and/or ecosystems are represented in the MPA system.
- b. Identify and select areas to provide all the potential benefits of the MPA system, not just species protection.
- c. Conduct detailed assessments of existing sites in order to; (i) ensure that management objectives of each are being met, (ii) set a baseline of resource status, and (iii) ensure that the existing boundaries cover complete habitats.
- d. Revise existing regulations for MPAs to prevent damage from developmental and recreational activities.
- e. Develop a rational basis for site selection to ensure that sites are complementary.
- f. Improve coordination between MPA management agencies to improve MPA planning, administration, monitoring, and data management.

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<sup>4</sup> The existing laws governing marine sanctuaries allow for levels of commercial and other activities, which often generate adverse impacts on the site. Obviously a species/resource is not protected if the habitat ("sanctuary") it needs is damaged or destroyed. If this definition of marine sanctuaries is accepted in the USVI, some refinement in the law will be necessary.

## **CHAPTER 5: LEGAL FRAMEWORK**

The different types of marine protected areas (MPAs) in existence in the U.S. Virgin Islands (USVI) have been designated under different laws, both Federal and local. Consequently, management of different sites also fall under the jurisdiction of both Federal and USVI government agencies. Additionally, there is no single law to provide a unifying framework for a system of protected areas in the USVI, though a Draft Bill, The Territorial Park System Act, was prepared in 1995.

The development of a system of protected areas requires the coordination of policy, planning, and management between the various Federal and USVI government agencies engaged in protected area management. A unified vision and effective coordination therefore require new legislation, changes in existing legislation, and new regulations.

### **5.1 Existing Situation**

Sites that fall within the national parks system are designated by the United States Congress, the Secretary of Commerce, or by Presidential Proclamation and managed by the National Park Service (NPS). Though there are many laws that impact on the management of protected areas, there are eight main Federal laws that allow for designation of MPAs.

#### **National Marine Sanctuaries Act 1972** (16 U.S.C. 1431-1434)

National marine sanctuaries may be designated by the Secretary of Commerce or by Congress, and are usually administered by the National Oceanic and Atmospheric Administration (NOAA). These areas are usually designated for the purpose of preserving or restoring such areas for their conservation and recreational values. The public and private uses of such areas are permitted in most cases, unless otherwise prohibited by other regulations.

#### **Magnuson-Stevens Fishery Conservation and Management Act** (16 U.S.C. 1801-1883)

This Act covers the designation of fishery management areas, which are usually closed areas meant to protect spawning aggregations, essential fish habitat, and habitat areas of particular concern. Fishery management areas are usually designated by the Secretary of Commerce, on the advice of the appropriate regional fishery management council and the National Marine Fisheries Service (NMFS).

#### **National Park Service Organic Act** (16 U.S.C. 1, 2-4)

National parks and marine parks are usually designated by Congress for the purpose of preserving unique or pristine scenic or wildlife features, and are managed by the National Park Service. National parks are managed primarily to provide public recreational opportunities, and many contain large marine areas.

**Coastal Zone Management Act 1972** (16 U.S.C. 1451 et. seq.)

The Act provides for the establishment of the National Estuarine Research Reserve System. These sites are designated to provide estuaries for research, restoration, and education, and are managed by NOAA. Sites designated under this Act also require protection by local (State) law. Areas of Particular Concern (APCs) are also designated under this Act.

**National Wildlife System Act** (16 U.S.C. 668dd)

This Act establishes wildlife refuges for the conservation of fish and wildlife, and for habitat protection. The sites are designated by Congress or Presidential Proclamation, and managed by the Fish & Wildlife Service.

**Endangered Species Act 1973** (16 U.S.C. 1361-1407)

This Act protects endangered species of plants and animals, and covers the designation of critical habitat to protect the endangered species.

**Archeological Resources Protection Act 1979** (16 U.S.C. 470aa et seq.)

This Act is used to designate and protect historic sites.

**National Historic Preservation Act 1966** (16 U.S.C. 470 et seq.)

This Act permits the designation of properties/sites that are of historical and cultural significance. It is considered relevant for the management of marine archeological sites. Sites designated by the Federal Government under this law are usually managed by State/territorial government agencies.

**Presidential Proclamations**

Used to designate national monuments to protect important ecological or historic resources.

In addition to the different legislation and regulations, the Executive Order concerning MPAs issued by President Clinton in 2000 presents a basic policy framework for a system of MPAs throughout the United States and its territories (Appendix 2). In addition to providing guidance on the elements appropriate for the development of the system of MPAs, the Executive Order requires coordination between Federal agencies.

The primary legal foundation for marine protected areas in the USVI is the Virgin Islands Code, specifically Title 12 (Conservation). The main laws that permit local designation of MPAs are shown below.

**Virgin Islands Coastal Zone Management Act 1978** (Act No. 4828)

Following the requirements of the national Coastal Zone Management Act of 1972, the Virgin Islands Coastal Zone Management Act requires an inventory and designation of areas of particular concern (APCs). The same laws also make provision for the designation of Areas for Preservation and Restoration (APRs). While APCs are areas deemed to be “... *of yet greater significance*”, based on criteria set out within the Virgin Islands Coastal Management Program and Final

Environmental Impact Statement, APRs are designated specifically for the purpose of preserving or restoring areas “...for their conservation, recreational, ecological, or aesthetic values” (NOAA 1979). APCs and APRs are designated by the Legislature of the USVI, on the recommendation of the Coastal Zone Management Commission. The Act also provides for the designation of significant natural areas (SNAs), defined as areas that are unique, fragile, of high natural productivity, or are essential habitat for living resources and endangered species.

**Government Reorganization and Consolidation Act 1987** (Act No. 5265)

This Act split the mandate of the then Division of Parks and Natural Resources (Department of Conservation and Cultural Affairs), assigning responsibility for the administration and maintenance of parks to the newly created Department of Housing, Parks and Recreation (DHPR) and the responsibility for natural resources management to the equally new Department of Planning and Natural Resources (DPNR). Parks created under this law are generally for recreational purposes, with little attention given to natural resource issues.

**Wildlife and Marine Sanctuaries Act 1980** (Act No. 5229)

This allows the Department of Planning and Natural Resources to designate wildlife sanctuaries and marine reserves, and promulgate associated rules and regulations.

**Trustlands, Occupancy and Alteration Control Act 1975** (Act No. 3667)

Allows for the protection, preservation, maintenance, and improvement of lands and submerged lands transferred to the USVI Government. This includes regulation of Federal submerged lands transferred to the USVI Government.

Additional legislation of relevance to the development of a system of MPAs include:

- Act No. 350 – Provides for the acquisition and development of areas as historical and recreational areas. It also gives the Executive Branch the authority to enter into agreements with Federal Government agencies for park development and management;
- Act No. 2036 – Established the Virgin Islands Conservation Fund;
- Act No. 2347 – Established the Land Bank Fund to support a range of public uses, including conservation;
- Act No. 2708 – Established the VI Students Conservation Corps;
- Act No. 3063 (The Open Shorelines Act 1971) – Established public use rights to the foreshore;
- Act No. 5294 – Dealt specifically with Cas Cay and the Mangrove Lagoon as protected areas. It also required the preparation of a “marine sanctuary plan” for the Mangrove Lagoon area, removed the term “protected areas” from the then legislation, and authorized the Commissioner of DPNR to designate and establish additional wildlife and marine sanctuaries; and
- Act No. 5665 (The Indigenous and Endangered Species Act 1990) – Provided for protection of indigenous wildlife species. It also established a “net loss policy” for wetlands.

### 5.1.1 Major Issues

A review of past initiatives, as well as interviews with a number of persons familiar with protected areas planning and management in the USVI, has identified a number of issues that need to be addressed if a system of MPAs is to be developed. The major issues are:

- a. There is no single piece of legislation giving effect to a system of protected areas in the USVI. A draft Bill for a Territorial Park System (TPS) was prepared in 1995, but the process of adopting it into law was not completed.
- b. There is no plan for a system of protected areas. A draft plan for the TPS was prepared in 1981, when the Department of Conservation and Cultural Affairs (DCCA) was given responsibility for territorial parks. The plan was not submitted for serious consideration. Site establishment is therefore opportunistic (e.g. using the opportunity of the Columbus Quintecennial Celebrations to designate the Salt River Bay National Historic Park and Ecological Reserve).
- c. The reorganization of the DCCA into the DHPR and DPNR somehow created a legislative gap, wherein neither agency had responsibility for development and management of a system of protected areas. Additionally, the language used in the associated bit of legislation implies that parks are urban recreational spaces and beaches. Parks for natural resource management objectives was apparently not contemplated. As such, even with the overlap between DHPR and DPNR, there is still a gap with respect to lead responsibilities for national parks.
- d. Given the large number of areas recommended for inclusion in the TPS (Maps 3-5 and Page 81) and the available resources and responsibilities of the existing agencies, it has been suggested that a Territorial Park Authority be created. A Bill to that effect was drafted in 1992, but was never promulgated.
- e. Though there are agreements in place between the National Park Service and the USVI Government, a number of recent initiatives suggest that some legislative fine tuning is required. The 2000 designation/expansion of national monuments by the President created a dispute between the Federal and USVI Governments concerning ownership of the submerged lands and the legality of the designation. Other legislative problems associated with enforcement have surfaced in the case of the co-management arrangements for Salt River.
- f. Some sites have multiple designations. For example, many of the APCs contain areas designated as SNAs, wildlife reserves, and wildlife sanctuaries. Additionally, many of the APCs contain historic resources, and a number of sites have been identified as being eligible for recommendation as World Heritage Sites. There is no policy or legislative guidance on how to treat multiple designations. Of the 18 APCs, management plans have been prepared for only 3<sup>5</sup>, and these do not address the issue of multiple designation (or site within site) in any specific way.

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<sup>5</sup> The 3 management plans are currently going through the approval process.

- g. Existing laws require the development of policies and plans that have apparently not been prepared (e.g. Act No. 5294 required the preparation of a marine sanctuary plan, and Act. No. 5665 required the development of a net loss policy for wetlands).
- h. There are major policy gaps related to the treatment of conservation and development, within the context of protected areas. Examples include:
  - Loss of designated sites and historic resources to development pressure;
  - Increased densities of developments adjacent to protected areas; and
  - The absence of conservation areas (neither demarcated nor discussed) in the land and water use plan.
- i. Two trust funds exist that are of potential use to the TPS. However, the issues of management of the funds by the Department of Finance, contributions from the trust funds to the general fund, and the development and implementation of a financial management plan all have to be addressed.
- j. Public participation appears to be limited to public hearings when areas are to be designated. The policies and laws need to be revised to accommodate a broader and more in-depth level of participation from civil society groups and the general public.
- k. There are other major issues that have not been addressed in any way, such as the matter of in-holdings and the designation of private lands as protected areas.

## **5.2 Desired Situation**

The different types of marine protected areas designated under the various laws of the USVI will be rationalized to fall into the four categories which constitute the MPA system (Section 4.2). Coastal and other types of protected areas will be designated based on the priorities identified in a Policy and Plan for a System of Protected Areas for the U.S. Virgin Islands.

The legal foundation for the system of protected areas will be the Territorial Protected Areas System Act. The Act will place responsibility for overall protected area policy and system development, management, monitoring, and evaluation with the Protected Area Authority (Territorial Park Authority<sup>6</sup>). The Act will empower the Legislature to designate or de-list areas on the recommendation of the Board of Directors of the Authority.

The Territorial Protected Areas System Act will also provide for the development of regulations dealing with the full range of issues relevant to the development and management of the system; including the various types of protected areas, the process for selecting and declaring protected areas, the process for delisting areas, procedures for public participation,

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<sup>6</sup> The original name can be retained if persons are more comfortable with it, as long as it is quite clear that the new Authority will manage all types of protected areas within the Territorial limit of the USVI.

as well as the range of guidelines and policies required for full system management (Section 7.1).

Existing legislations and regulations dealing with protected areas will be amended where necessary to ensure that a rational, comprehensive, and coherent policy and legislative framework is developed to support the system. MPAs already designated under existing legislation will be incorporated into the system of protected areas, either by reference or by management control.

The Authority will consult with other institutions having a role in protected area and system management (Chapter 6) prior to recommending any new area for designation or de-listing. Conversely, the Act will require other institutions with responsibility for other types of protected areas to consult with the Authority prior to any new designation or de-listing of areas.

Areas recommended for listing as protected areas may be privately owned, or may include in-holdings. Regulations to deal with conservation easements/rights, loss of development rights, and/or outright acquisition of land will be developed.

The system of protected areas will require the availability of a sustained input of financing. The laws, regulations, and management mechanisms for the existing trust funds that can be used for conservation purposes will be reviewed, with the purpose of consolidating the financing arrangements for the system. Funding mechanisms will include a range of use fees, merchandizing, contributions, government direct input (such as a tourism head tax), and implementation of a capital campaign for the trust fund (Chapter 8).

Issues of public health and safety, hazard management, or area designation under emergency conditions will be dealt with by the development of new regulations.

The legislation and regulations will ensure that the USVI meet its obligations under the national legislative and policy framework. Additionally, it will support the national efforts related to obligations under multilateral environmental agreements.

### **5.3 Adjustments Required to Achieve the Desired Situation**

Given the issues raised above, a significant amount of work is required to develop the appropriate policy and legislative basis for a system of protected areas. However, the critical first steps in this process are:

- a. Adoption of this Management Framework by the USVI Government, with, if necessary, the Governor issuing an Executive Order to ensure that participation at the highest level of the Administration takes place. The adopted management framework then becomes the official policy framework, and sets the stage for the full development of the system plan.

- b. A detailed review of the relevant legislation and regulations is necessary; first to determine what is required to support development of the system, and should therefore be contained in the Territorial Protected Area System Act; and secondly, to determine what revisions are necessary in existing legislations and regulations to bring them into compliance with the new laws and regulations.

## **CHAPTER 6: INSTITUTIONAL FRAMEWORK**

The development and management of a system of protected areas involves a range of functions, from policy making, through system management, financing, and evaluation to site management. The institutional mix will involve those with direct management responsibilities and those that are involved in supporting roles. Additionally, non-governmental organizations (NGOs) should participate in the development and management of the system, as a number of NGOs not only focus their activities on environmental issues, but go as far as to purchase properties in furtherance of conservation objectives.

The institutional framework therefore requires an articulation of roles and responsibilities, building on existing mandates, experiences, and strengths. Any reorientation/reorganization of institutional mandates should be based on system requirements and institutional assessments. Where necessary, new institutions will be created.

Of utmost importance are the coordination mechanisms and institutional spaces that are created to support an effective and efficient partnership among the various institutions that have responsibilities for, or interest in, the system of protected areas.

### **6.1 Existing Situation**

There are three main institutions that are responsible for the establishment and management of protected areas within the U.S. Virgin Islands (USVI). These are:

- a. The National Park Service (NPS);
- b. The Department of Housing, Parks and Recreation (DHPR); and
- c. The Department of Planning and Natural Resources (DPNR).

#### **National Park Service**

The National Park Service is responsible for managing the protected areas designated under Federal laws. Sites currently being managed in the USVI include Buck Island Reef National Monument, Salt River National Historic Park and Ecological Reserve, and Christiansted National Historic Monument on St. Croix (Map 1), Virgin Islands National Park and Virgin Islands Coral Reef National Monument on St. John (Map 2), and Hassel Island on St. Thomas.

The NPS has entered into agreements with the Government of the USVI to provide support to the local management efforts. The most notable of these agreements is the co-management arrangement for Salt River mandated by Congress. The consultations conducted as part of this VI Marine Park Project indicate that the agreements are not as productive as they should be.

#### **Department of Housing, Parks and Recreation**

The mandate for the DHPR is provided by the Government Reorganization and Consolidation Act 1987. The DHPR has two divisional units that deal with parks.

The Division of Parks and Recreation promotes and organizes various sports and other recreational activities, while the Division of Parks and Open Space Beautification is responsible for public parks, beaches, sports complexes and other recreational areas, and for beautification of the environment. The mandate of the agency makes it responsible for preparation of the 5-year Territorial Comprehensive Outdoor Recreation Plan.

The DHPR enters into agreements with DPNR for site assessment and management.

### **Department of Planning and Natural Resources**

The DPNR is charged with a wide range of functions pertinent to protected areas management, including; conservation, pollution control, flood control, protection of archeological and historic resources, coastal zone management, fisheries management, environmental enforcement, development control, coordination of library services and museums, and comprehensive planning for the USVI. As such, all the divisions within DPNR have roles in supporting protected area activities. The main units that presently deal with site designation and management are the Division of Fish and Wildlife, Division of Coastal Zone Management, and Division of Archeology and Historic Preservation.

### **Supporting Institutions**

Institutions with secondary roles include:

- Office of the Lieutenant Governor – Tax assessment and cadastral maps;
- Department of Agriculture – Maintenance of forests and provision of recreational opportunities<sup>7</sup>;
- Department of Education – Has agreements with NPS, DPNR, and DHPR for training;
- Department of Property and Procurement – Controls government-owned properties;
- Department of Public Works – Responsible for scenic overlooks and byways;
- University of the Virgin Islands – Provides support in training, research, data management, and public education;
- Virgin Islands Port Authority – Responsible for port development and harbor management. Owns lands proposed and/or suitable for protected area designation; and
- Virgin Islands Conservation District – provides for “...*the conservation and development of the soil, water, and other natural resources of the Virgin Islands*”.

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<sup>7</sup> The role of conservation forests has not been explored in the USVI to date, but should be addressed when the full system plan is being prepared.

### **6.1.1 Coordinating Mechanisms**

Institutional coordinating mechanisms used in the USVI to date include:

- a. Commissions – such as the joint Federal/USVI Commission to oversee the preparation of the management plan for the Salt River National Historic Park and Ecological Preserve;
- b. Establishment of a management entity for a specific site – such as in the case of the Magens Bay Authority;
- c. Inter-agency Committees – such as the Territorial Parks System Committee established between DHPR and DPNR in 1993; and
- d. Working Groups – such as used by DHPR in the planning and preparation of the Master Plan (2001) for the Great Salt Pond.

The above arrangements have worked to different degrees, ranging from the problematic Salt River Commission to the successful Magens Bay Authority. No evaluation of these different arrangements has been undertaken, but factors impacting adversely on the consistency and productivity of these institutional arrangements appear to include:

- Inadequate human and financial resources;
- Limited political support;
- Arrangements are based on personal affiliations rather than structured institutional agreements; and
- Changing demands and priorities resulting from a series of tropical storms, as well as changes in senior personnel in the USVI Government.

### **6.1.2 Major Issues**

A review of the existing information has identified a number of major institutional issues that need to be addressed for the development of a system of protected areas in the USVI. These major issues include:

- a. The major initiatives undertaken in conservation and protected areas development over the past forty years (IRF 2002) have not been translated into any program for the systematic development of protected areas in the USVI, resulting in a high level of cynicism among institutions and individuals regarding current and future efforts.
- b. The absence of a clear framework for a system of protected areas increases the difficulty of placing protected areas within the development planning process for the USVI, especially considering that conservation and development are considered by most Virgin Islanders to be opposing/contradictory development options.

- c. The wider community has been excluded from the process, resulting in a very narrow institutional and political support base.
- d. The level of awareness of the benefits of protected areas in the general populace is very low. The existing perceptions are mostly negative, if not about protected areas generally, then certainly about the management approaches used in the USVI. This perception is maintained by the periodic negative publicity surrounding specific initiatives related to management of the existing national parks.
- e. The issue of protected areas has rarely been placed seriously on the political agenda of a political representative or an administration. In fact, the reverse is true, where elected officials have been known to exploit the public's misconceptions concerning protected areas.
- f. The two existing trust funds established for conservation have not been capitalized, and financial resources to implement the large amount of work to be undertaken in the development of a system of protected areas are not readily available.
- g. The human resources needed to manage a system of protected areas in the USVI is a major limiting factor, and a programme of training for all levels of personnel will have to be instituted.

## **6.2 Desired Situation**

### **Protected Area Authority (PAA)**

The Protected Area Authority will be a statutory body, functioning under the guidance of a Board of Directors.

The Protected Area Authority is the lead agency with overall responsibility for the USVI protected area system, ensuring that all protected areas meet their various objectives to the greatest extent possible, while protecting or improving the natural resources and supporting the appropriate use of public resources.

The Authority will develop the policy framework for all aspects of protected area planning and management, including procedures and guidelines for planning, establishment, and management of protected areas. The Authority will also be responsible for preparation and/or revision of the System Plan.

The Authority may fulfill its mandate through the activities of other public, private, or non-governmental institutions. As such, the Authority will be given the legislative authority to provide general policy direction to the management institutions, approve management plans, and assume management responsibility for specific sites when deemed necessary.

Where new protected areas are designated, the Authority may enter into agreements with other institutions for management of the site. In such cases, the Authority will:

- Assess the capabilities and needs of institutions identified for management of sites;
- Approve the management and operational plans (where prepared by other organizations); and
- Provide technical assistance to management organizations, particularly in the areas of site planning, design of cost recovery systems, design of research and monitoring programmes, and legal services.

Where sites are to be designated and managed by a Federal agency within the Territorial Limit<sup>8</sup>, the Authority will provide a consulting role to ensure that site location, design, establishment, and management strategies result in the smooth integration of the Federally-managed site with the USVI system.

The Authority will be responsible for setting standards for the overall system, as well as the individual units. Additionally, it will coordinate the permit and license system for the system of protected areas.

The Authority will design and implement a programme of monitoring to ensure performance effectiveness of management institutions, maintenance of system integrity, and achievement of system objectives.

The Authority will develop and maintain an information management system and resource centre for the system of protected areas. This will enable the Authority to better coordinate with the other institutions involved in environmental monitoring, research, and projects relating to the system of protected areas

The Authority will coordinate a public education programme relating to the system of protected areas.

The Authority will coordinate initiatives with external institutions related to the system of protected areas. Where appropriate, initiatives will continue to be implemented by the existing institutions, especially where there is a legal obligation so to do.

The Authority will develop a financial policy and financial management system to guide the operation of the system of protected areas. It will also be responsible for the development of mechanisms (such as a trust fund) to ensure adequacy of financial support for the system of protected areas.

The Authority will establish and support a Protected Area Advisory Council.

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<sup>8</sup> The same provision obviously applies in the context of terrestrial sites.

### **Protected Area Advisory Council (PAAC)**

The Protected Area Advisory Council will be established and supported by the Protected Area Authority. The Council will be composed of representatives from public, private, environmental, and community based organizations representing a wide cross section of community interests. The Council functions as the main institutional space for inter-agency and cross-sectorial cooperation in the development and management of the system of protected areas. As such, the Council will advise the Authority on issues relating to administration of the system of protected areas, inter-agency program linkages, protected area policy, public demand for natural resources, relevant socio-economic and cultural issues, and income generation for protected areas.

### **Department of Planning and Natural Resources (DPNR)**

DPNR will no longer be responsible for designating protected areas<sup>9</sup>, but will cooperate in management of protected areas where they have mandated responsibilities. DPNR will retain some policy oversight, ensuring that protected area policy and implementation meet the objectives articulated by the overall conservation strategy for the USVI<sup>10</sup>.

DPNR will ensure that the Comprehensive Land and Water Use Plan and other plans recognize existing and proposed protected areas. Additionally, through the work of the various divisions, DPNR will support the enforcement, research, monitoring, and planning of protected areas, particularly in the buffer zones and watersheds.

DPNR, through its programs with areas of particular concern (APCs) and watersheds management, will identify and recommend significant natural and/or cultural resources that require protection by inclusion in the system of protected areas, and will thereafter take steps to ensure that the development activities in those APCs and watersheds do not impair the value of those protected area resources.

DPNR will continue to access sources of funds as appropriate in support of the system of protected areas.

### **Department of Housing Parks and Recreation (DHPR)**

DHPR will cooperate in the management of the system of protected areas by coordinating projects and programs, sharing information, providing support and advice in its area of expertise, and accessing funding sources to support protected area activities.

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<sup>9</sup> This change will be one that requires legislative support.

<sup>10</sup> A conservation strategy for the USVI does not currently exist, and as such, is one of the missing policy elements.

### **Department of Agriculture (VI-DoA)**

The Department of Agriculture will cooperate in the management of the system of protected areas by sharing information, providing support and advice in its area of expertise, and accessing funding sources to support protected area activities.

The VI-DoA may manage upland or coastal forests that are designated protected areas, based on agreements reached with the Protected Area Authority and its capacity to manage those areas.

The VI-DoA will collaborate with the PAA and other relevant institutions in the design, establishment, and management of forests that will function as corridors linking the various sites in the system of protected areas.

### **Department of Education (VI-DoE)**

The Department of Education will contribute to the management of the system of protected areas by providing training in a number of skills relevant to site management. The VI-DoE will also provide training to enhance the management/entrepreneurial skills that may be needed by organizations that will wish to provide services to the protected areas or make use of business opportunities provided by the system<sup>11</sup>.

VI-DoE will develop curriculum to improve the awareness of students in the primary and secondary education levels about environmental matters generally. VI-DoE will also coordinate with the PAA and other relevant institutions in the development and implementation of education and public awareness materials and programs relevant to the formal education system.

### **Department of Property and Procurement (DP&P)**

The Department of Property and Procurement will support ongoing efforts to develop and manage the system of protected areas by acquiring or facilitating the acquisition of lands<sup>12</sup> identified as protected areas, or needed for the operational requirements of the system. This will include land currently under the control of government agencies and lands under private ownership. This does not preclude the PAA from directly acquiring property for the establishment of protected areas.

### **Department of Public Works (DPW)**

The Department of Public Works will support the development of the system of protected areas by coordinating the development of scenic areas and overlooks with the system plan implementation. DPW will also continue to access funds available for the construction of trails and other infrastructure in support of the system of protected areas.

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<sup>11</sup> VI-DoE previously entered into an agreement to this effect with DPNR and DHPR.

<sup>12</sup> The legislative changes required to support the system of protected areas should include provisions to prevent disposal by government agencies of lands identified as being necessary for the system.

DPW will cooperate with the PAA and other relevant agencies in the design and construction of infrastructure projects, as well as in the maintenance of infrastructure, guts, and other facilities that impact on protected areas.

**University of the Virgin Islands (UVI)**

The University of the Virgin Islands provides tertiary level and workforce training, and will contribute to the development and management of the system of protected areas by providing training opportunities for protected area personnel. Additionally, UVI will collaborate through conducting or participating in social, economic, and environmental research relevant to protected areas.

Other major areas of input by UVI will be made through the activities of the Conservation Data Center and the Virgin Islands Marine Advisory Service.

**Virgin Islands Port Authority (VIPA)**

The Virgin Islands Port Authority is responsible for port development and harbor management, and its operations will therefore impact significantly on MPAs. As such, VIPA will site and design port developments and operate marine traffic management systems in such a manner as to eliminate or minimize the impacts on MPAs. Where the VIPA owns lands suitable for protected area designation, those lands will be transferred to the PAA for designation and management.

VIPA will also collaborate on the implementation of the system of mooring and navigational markers for the MPAs.

**Department of Tourism (VI-DoT)**

The tourism sector will be one of the main beneficiaries of a system of protected areas. The Department of Tourism will therefore collaborate in supporting the system development by supporting specific initiatives and providing access to financing where possible.

**Virgin Islands Territorial Emergency Management Agency (VITEMA)**

As the Territory's emergency management agency, VITEMA will collaborate in the management of the system of protected areas by sharing its expertise in preparing emergency management plans, by advising on the siting and design of structures and facilities, and by addressing emergencies in protected areas as they arise.

**Virgin Islands Conservation District (VICD)**

The VICD has responsibility for promoting conservation and orderly development of the USVI. As such, the VICD will participate in the development and management of

a system of protected areas by facilitating the integration of protected areas into development plans, supporting public awareness initiatives, facilitating the development of agreements with land occupiers/owners in furtherance of protected areas objectives, and securing financial support for the system as appropriate.

#### **Non-Governmental Organizations (NGOs)**

Non-governmental organizations<sup>13</sup> that focus on conservation issues form a critical part of the support network for the system of protected areas. Their continued participation should be supported to the fullest extent possible in all aspects of system development, from advocacy through project implementation to site management. Where appropriate, NGOs may be considered for management of specific protected area sites, based on an assessed capacity to function in a management role.

#### **Private Sector Organizations**

Private sector organizations will be encouraged to participate in the development and management of the system of protected areas, primarily by participating in activities, providing services to the system, and participating in advisory groups<sup>14</sup>.

### **6.3 Adjustments Required to Achieve the Desired Situation**

A wide range of activities need to be undertaken to develop and maintain the institutional framework suggested above. The first steps in that process are:

- a. Adoption of a policy framework (by the Government of the USVI) for protected area management (see also Section 5.3).
- b. Establishment of an inter-agency committee, with stakeholder representation. The primary role of this inter-agency committee at this juncture would be to conduct the preparatory work for a program of action for the development of the system of protected areas. The committee would therefore focus on confirming and reviewing the status of existing agreements, institutional mandates and programmes related to protected areas, available and potential resources, and preparation of a draft plan of action. Given the existence of the VI Marine Park Project, as well as the other related initiatives being undertaken by DPNR (such as the APC management plans), it is recommended that DPNR be the lead agency in this effort.
- c. A project should be designed and implemented for the preparation of a system plan for protected areas for the USVI<sup>15</sup> (Chapter 12).

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<sup>13</sup> NGOs in this context mean those organizations that are not for profit, and include environmental groups, community-based organizations, service clubs, and other such organizations.

<sup>14</sup> Site management by private sector interests was not discussed during the public consultations for the VI Marine Park Project. However, such a role for the private sector is not unknown in the Caribbean and the USA.

## **CHAPTER 7: PLANNING PROTECTED AREAS**

The policy framework for the system of protected areas has to be translated into a series of programmatic initiatives and actions. This is done through the production of plans and procedures, which in turn are used in making decisions about priorities, establishment of areas, and management responsibilities. The planning process must be flexible enough to accommodate the active participation of the public, yet with enough structure to prevent conflicts and ensure an effective process.

Planning for a system of protected areas is focused at several levels, starting with the highest and broadest at the system level to the most detailed and narrow at the day-to-day operations at the site level (Figure 1).

### **7.1 System-Wide Planning**

System level planning is based on a set of guiding principles that are used to craft the design of the system of protected areas. It provides not only the targets and strategies for the development and management of the system, but also standardized criteria and procedures for operations and site selection and management. This ensures standardized operating procedures and transparency and efficiency in decision making.

#### **7.1.1 Principles for System Design**

Broad principles that should be used as guidelines in the design of the system of protected areas are:

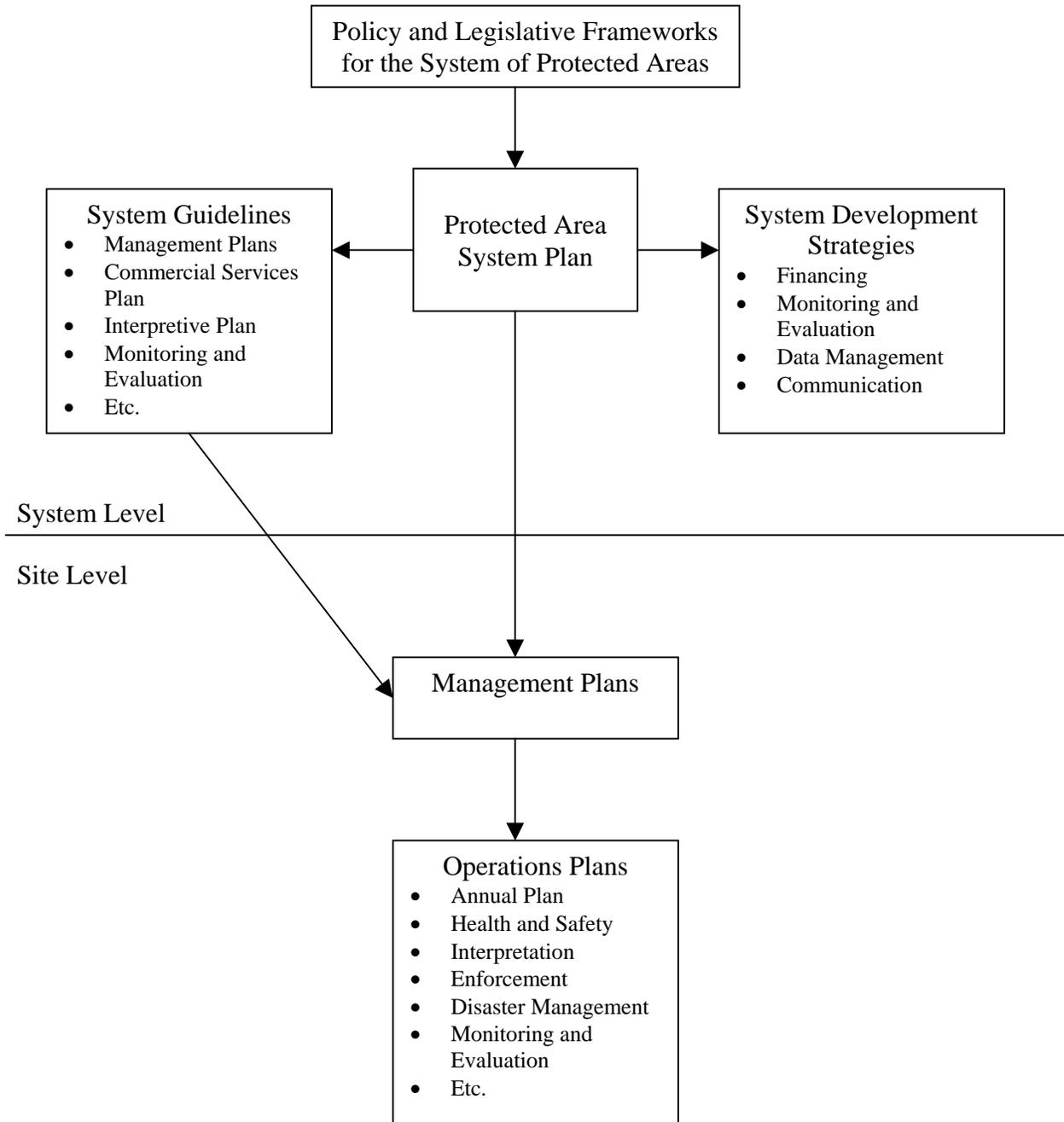
- a. **System design should ensure the achievement of the goals of the system of protected areas.** Protected areas are not tools for simply preventing inappropriate use of natural resources, nor are they devised to provide only recreational opportunities and/or consumptive values. The establishment of a system of protected areas should be a deliberate development strategy, and should therefore contain units that provide the range of ecological, social, economic, and educational benefits.
- b. **Ensure ecological sustainability.** The loss of ecological integrity will eventually result in the loss of all other benefits, and as such, maintenance and/or restoration of ecosystem integrity of the units and resources is the top priority of the system of protected areas.
- c. **Ensure cultural appropriateness.** Procedures must be sensitive to societal norms and cultural practices, as well as legal systems. However, sensitivity to such norms should not extend to allowing the integrity of the system to be compromised.

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<sup>15</sup> During the public consultations for the VI Marine Park Project it was suggested that UVI prepare and implement the project for the preparation of the system plan. UVI has not been officially approached to lead this effort.

- d. **Be practical in setting goals and targets.** Objectives and targets should be based on the capacities of the institutions, individuals, and local communities.
- e. **Maintain flexibility in system design.** Designing the system involves more than the establishment of individual units; requiring institutional coordination, promulgation of legislation, competing demand for resources from local communities, fundraising, and a range of other similar activities. As such, factors ranging from resource availability, through institutional capacities, to politics determine opportunities as well as obstacles to system development and management. These factors influence both system design and site selection and establishment.
- f. **Ensure network connectivity.** Wildlife populations are seldom restricted to single sites in nature. Particularly in the marine environment, there are extensive migratory and dispersion patterns in some species. A well-designed system must therefore ensure that sites are large enough to support patterns of movement, as well as maintaining connectivity between the different units wherever possible.

**Figure 1: Planning Levels for the Protected Area System**



### **7.1.2 Policy Guidelines for System Planning**

System-wide planning is the responsibility of the Protected Area Authority (PAA), and will be done in collaboration with other agencies that have responsibilities for protected area management or have specific supporting roles in system development and management. System-wide planning will be carried out under the general guidance of the Protected Area Advisory Council, and plans generated from this process will be approved by the Board of Directors of the PAA before going to public hearings.

This management framework, on adoption by the Government of the USVI, will become the overall policy framework for the protected area system. This **Policy for the System of Protected Areas in the U.S. Virgin Islands** will provide the guidance for development and management of the protected area system.

The preparation of a **System Plan** for all protected areas is also the responsibility of the PAA. The system plan sets out priorities for protected area and system development, and provides a guide for the planning of annual work programs, budgets, staffing, training, and other management activities. The system plan also provides a framework for site management plans (Figure 1). The system plan will be updated every five years.

Supporting plans for system level planning and management include **System Development Strategies** and **System Guidelines**. System development strategies provide detailed strategies and plans for conducting the main system level supporting activities, and include:

- Financial Sustainability Plan;
- System Monitoring and Evaluation;
- Information Management; and
- Communication Strategy.

System guidelines are guidelines for management of sites, developed to ensure the maintenance of standardized procedures and practices throughout the system. The guidelines to be produced are:

- Feasibility Assessment for Sites;
- Management Plans;
- Operations Plans;
- Commercial Services Plan;
- Monitoring and Evaluation;
- Research;
- Listing and De-listing of Sites;
- Species Management (protected species, invasive species);
- Signage;
- Disaster Management;
- Interpretation;
- Community Engagement;
- Dispute Resolution; and
- Financial Management.

## **7.2 Site Selection and Establishment**

Site selection should be based on clear criteria that ensure that the system objectives and guiding principles are being met, and the use of selection criteria facilitates objectivity of the process. Selection criteria (Table 2) are used primarily to determine if a site should be accorded protected area status. A secondary use is to rank sites in order of priority if a number of sites are eligible for development.

Any group or institution may request that an area be designated as a protected area. Where a group other than the PAA requests such designation, that institution will provide documentation to the PAA supporting the eligibility of the site for protected area designation, and will be required to initiate and be active in the planning and feasibility assessment.

**Table 2: Selection Criteria for USVI Marine Protected Areas**

<p><b>Biogeographic Criteria</b></p> <ul style="list-style-type: none"> <li>• Inclusion of unique geological features</li> <li>• Inclusion of rare biogeographic features or types</li> <li>• Representativeness</li> <li>• Uniqueness</li> </ul>	<p><b>Social Criteria</b></p> <ul style="list-style-type: none"> <li>• Existing or potential value to the local, national, or international communities because of its heritage or historical, cultural, aesthetic, educational, or recreational qualities</li> <li>• Social and political acceptance</li> <li>• Degree of community support</li> </ul>
<p><b>Ecological Criteria</b></p> <ul style="list-style-type: none"> <li>• Contribution to the maintenance of essential ecological processes or life support systems</li> <li>• Integrity</li> <li>• Degree to which the area encompasses or contributes to a functional ecosystem</li> <li>• Inclusion of a variety of habitats</li> <li>• Inclusion of habitats for rare or endangered species</li> <li>• Inclusion of nursery or juvenile areas</li> <li>• Inclusion of rare or unique habitat for any species</li> <li>• Degree of genetic diversity</li> <li>• Degree of disturbance</li> <li>• Vulnerability to natural or man-made threats</li> </ul>	<p><b>Practicability or Feasibility</b></p> <ul style="list-style-type: none"> <li>• Degree of insulation from external destructive influences</li> <li>• Accessibility for education and recreation</li> <li>• Compatibility with existing uses</li> <li>• Degree of danger to users</li> <li>• Urgency</li> <li>• Size</li> <li>• Opportunism</li> <li>• Availability for acquisition</li> <li>• Restorability</li> <li>• Ease of management and compatibility with existing management regimes</li> </ul>
<p><b>Economic Criteria</b></p> <ul style="list-style-type: none"> <li>• Existing or potential contribution to economic activities</li> <li>• Potential value for tourism</li> </ul>	<p><b>Scientific Criteria</b></p> <ul style="list-style-type: none"> <li>• Value for research and education</li> <li>• International or national importance</li> <li>• Potential to be listed as a site of national or international importance</li> </ul>

Source: Adapted from Day & Roff 2000, Salm & Clark 2000, Kelleher 1999

The general process for establishing sites includes the following steps:

**Step 1. Initiate Action**

The PAA is expected to initiate action to establish and manage priority sites. However, a community group or other institution can identify a possible new protected area, and thereafter submit a request for designation of the area to the PAA. On receipt of a positive response from the PAA, the requesting organization forms a planning team, composed of public sector agencies and community interests.

**Step 2. Build Community Participation**

Workshops, community meetings, and other means are used to identify community issues, interests, and needs. Organizing community participation becomes the responsibility of the initiating agency or group, with the assistance of the PAA.

**Step 3. Assess Feasibility of Site for Designation**

Regardless of the type of protected area proposed, the planning team completes a Feasibility Assessment. Issues to be examined include boundaries, land ownership, local management potential, and costs. The study may result in a recommendation that the area be formally added to the list of proposed sites in the Protected Areas System.

**Step 4. Prepare Management Plan**

A lead institution will be identified for coordinating the detailed planning and site assessment, as well as preparation of a management plan, using guidelines developed by the PAA. The completed plan, with boundary coordinates, is then submitted to the PAA for approval.

**Step 5. Obtain Legislative Approval**

The PAA or relevant agency will seek to have the site designated under the relevant legislation.

**Step 6. Prepare Operations Plan**

The management organization prepares a proposal for managing the area in accordance with the management plan, including a business plan for the operation and a long term financial sustainability strategy. Where the management institution is not the PAA, the operations plan will be submitted to the PAA for approval.

**7.3 Site Planning**

Site planning will normally be carried out by the management institution, and in the case where that management institution is not the PAA, collaboration with the PAA in the site planning process should be maintained. In any event, management plans developed for sites within the Territorial system will be submitted to the PAA for approval.

**Management Plans** are the major tools for guiding management activities at the level of the individual protected area. The management plan outlines the policies and procedures that guide management actions, describes the natural resources to be managed, evaluates the major issues to be addressed during the plan period, describes the programs and strategies to be undertaken in the plan period, the targets to be achieved, and the resources required to undertake the program.

Where management planning is being undertaken as part of the process of site designation, the planning process may be coordinated by an organization other than the PAA (Section 7.2).

**Operations Plans** are of two types. The first is the **Annual Plan**, which sets out how the management plan will be implemented on an annual basis. Issues of budgeting and activity scheduling will be dealt with in much more detail in annual plans. The second type of operational plan is really detailed plans that are theme specific, not time specific. These include:

- Health and Safety;
- Interpretation;
- Enforcement;
- Disaster/Emergency Management;
- Monitoring and Evaluation;
- Concessions Management/Commercial Services Plan;
- Signage;
- Maintenance; and
- Research.

## **CHAPTER 8: FINANCIAL MANAGEMENT**

The full benefits of a system of protected areas cannot be realized unless the resources to support the system become available. In this respect, the financial sustainability of the system is of critical importance. Financial sustainability can be defined as the ability to support the management and operational requirements of the system without continued reliance on regular infusions of grant funds.

Given the resource shortages of most governments, it is unreasonable to expect that public sector budgetary support can be the sole source of funds to achieve this financial sustainability. It is therefore expected that the entire society, as well as external entities that receive benefits and/or encourage protected area development, will participate in the financing of the system of protected areas.

The most reliable source of funds on a sustained basis is the income generated by a trust fund. However, it can be difficult and expensive to capitalize trust funds. Sources of funding for trust funds include the following:

- Government direct contribution;
- Debt-for-nature swaps;
- Capital campaign (grants and donations);
- Special appeals;
- Cost recovery mechanisms at the sites;
- Sales, merchandising, etc; and
- Tourism head or departure taxes.

All of the above also form sources of income at the site level. In addition to the above, other direct and indirect means of mobilizing resources exist, including:

- Projects;
- Investment in site management by private sector firms;
- Fiscal incentives to encourage cash and in-kind support, or direct investment;
- Tax and/or duty exemptions on equipment, vehicles, supplies, etc.; and
- Volunteerism (local and international).

### **8.1 Existing Situation**

The financial resources currently available to support protected area development is very small. Funds are available from two sources, these being:

- Grant funds from the Federal Government; and
- Funds from two USVI Government trust funds, the Virgin Islands Conservation Fund and the Land Bank Fund.

The available information suggests that neither of the local trust funds had been properly capitalized, and both have long been depleted. As such, the only source of funds currently

being used for protected area management is grants from the Federal Government<sup>16</sup>. The experience with grant funds is that they are sporadic, uncertain, inadequate, and usually require a substantial amount of effort to access.

The existing situation is clearly undesirable, and a more consistent source of funds to support the system of protected areas has to be established.

## **8.2 Desired Situation**

The management of the financial management system will involve the input of several institutions, at both site and system levels, and will therefore require clear policy and legislative and procedural guidelines.

### **Policies Related to Funding Mechanisms**

The system of protected areas will require a revitalized trust fund, to be managed by an independent Foundation, from which the funds will be used solely for the support of protected area management. Income generated from site operations, grants, and other similar sources of funds will be managed directly by the PAA.

The trust funds shall be invested, not only to protect the fund but to generate income. Only the real income generated by the trust fund, the earnings reserve after protecting the corpus from inflation, shall be available for expenditure on operating, expanding and improving the system. Specific sums will be transferred to principal to achieve the goal of an inflation-proof fund.

Donations can be made to the trust fund, to the system, or in support of a special project. Special appeals (project or building campaigns) will be mounted to support special projects, such as the purchase of lands or development of headquarters buildings for a site.

Wherever feasible, cost recovery mechanisms, including fees for use of system resources and sale of services, shall be put in place to enhance the trust fund or to augment income generated by trust, project, and other funds.

Mechanisms such as increased departure and hotel bed taxes, donation boxes at ports and airports, carefully designed eco-tourism packages, and special appeals in selected tourism markets will be used to tap the demonstrated willingness of visitors to pay for the protection and restoration of spectacular natural and historic areas. Funds generated from such mechanisms will be added to the trust fund.

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<sup>16</sup> This does not include direct budgetary support given to the National Park Service.

Elements of the system of protected areas that are established and managed by agencies other than the PAA will continue to be supported by those agencies.

Fiscal incentives shall be made available to encourage gifts of land, in-kind services and financial donations to the trust fund and other special appeals.

Tax exempt and charitable status, and/or exemption from tax on donations and savings account interest should be readily obtainable by qualified site management organizations.

### **Policies Related to Sources of Funds**

Development of an overall financial sustainability plan will consider a broad mix of local, national, and international funding sources, to be approached systematically on a continuing, regular, or one-time basis.

Sources of funds to build the income-generating capacity of the trust fund include an annual budgetary contribution from the USVI Government, dedicated windfalls as in the "debt for nature" swaps, other one-time grants from major international donors, individual bequests, a national capital campaign, a local capital campaign, and income transferred to principal as described above.

Government agencies in such sectors as agriculture, water, and tourism that will benefit from the protection and enhancement of natural resources (such as the quality of the marine environment, soils, forests and tourist attractions) will be expected to make annual contributions to the trust fund.

Effective national and local capital campaigns will address a variety of sources, including foundations, businesses and corporations, government, religious institutions, federated funding organizations, service clubs, potential pledges by individuals, and international donors and NGOs.

Potential donors as well as individual local residents may be approached for support of special project or building appeals.

Foundations and international donors may offer grants for land acquisition, research, planning, and development projects in response to proposals.

Local and international donors will be encouraged to take advantage of the opportunity to leverage their contributions and will have the option of donating to the trust fund.

In-kind donations in the form of land, equipment, services and volunteer assistance will be encouraged to expand the system and enhance management capacity, providing they meet identified needs.

Site management, including a careful assessment of carrying capacity, will be intelligently balanced with marketing to ensure that visitation and ecotourism generate net financial and environmental benefits on a sustained basis.

### **Policies Related to Fundraising Strategies**

Both levels of the system of protected areas will need to approach a broad mix of funding sources systematically on a continuing, regular, or one-time basis.

The Foundation (trust fund) must build investor confidence through clearly stated investment and fiduciary principles and a record of sound and effective management.

National and local capital campaigns will be coordinated and designed to focus on clearly differentiated target donors or donor interests so as to avoid duplication of effort and donor confusion.

### **Policies related to Management of Costs and Expenditures**

Achievement of financial sustainability for the system and individual protected areas will entail containment of capital and operating costs and efficient operations as well as ongoing intelligent and creative fundraising.

As part of their regularly updated operations plans, management organizations will be required to prepare financial sustainability plans containing estimates of expected funds, by source, and estimates of capital and recurrent costs for system and protected area management and improvement.

Each management organization will also be required to prepare an annual funding plan with funding targets by source and detailed proposed fundraising.

Management and operations plans will be prepared and implemented to minimize development and maintenance costs, with maximum feasible use of local resources, appropriate and indigenous technologies, low-impact practices in siting and designing facilities, and reservation systems for keeping visitor numbers within manageable limits.

## **PART II: MARINE PROTECTED AREAS OF THE U.S. VIRGIN ISLANDS**

This section provides summaries of the existing marine and coastal protected areas, as well as the proposed marine protected areas in the U.S. Virgin Islands.

The list of proposed sites is taken from the Resource Description Report (IRF 2002) prepared as part of this project.

## **CHAPTER 9: EXISTING MARINE AND COASTAL PROTECTED AREAS**

### **St. Croix (Map 1)**

- Buck Island Reef National Monument
- Christiansted Waterfront Area of Particular Concern
- East End Area of Particular Concern
- Frederiksted Waterfront Area of Particular Concern
- Great Pond and Great Pond Bay Area of Particular Concern and Area of Preservation and Restoration
- St. Croix Mutton Snapper Spawning Area
- Salt River Bay Area of Particular Concern and Area of Preservation and Restoration
- Salt River Marine and Wildlife Sanctuary
- Salt River National Historic Park and Ecological Preserve
- Sandy Point Area of Particular Concern
- South Shore Industrial Area of Particular Concern
- Southgate Pond/Chenay Bay Area of Particular Concern and Area of Preservation and Restoration
- St. Croix Coral Reef System Area of Particular Concern and Area of Preservation and Restoration

### **St. John (Map 2)**

- Chocolate Hole/Great Cruz Bay Area of Particular Concern and Area of Preservation and Restoration
- Coral Bay Area of Particular Concern and Area of Preservation and Restoration
- Enighed Pond/Cruz Bay Area of Particular Concern and Area of Preservation and Restoration
- Frank Bay Wildlife and Marine Sanctuary
- Virgin Islands Coral Reef National Monument
- Virgin Islands National Park

### **St. Thomas (Map 2)**

- Botany Bay Area of Particular Concern and Area of Preservation and Restoration
- East End Conservation Area (comprised of Cas Cay/Managrove Lagoon Marine Reserve, St. James Marine Reserve, and Compass Point Marine Reserve and Wildlife Sanctuary)
- Magens Bay and Watershed Area of Particular Concern
- Mangrove Lagoon/Benner Bay Area of Particular Concern and Area of Preservation and Restoration
- Mandahl Bay Area of Particular Concern and Area of Preservation and Restoration
- St. Thomas Harbor and Waterfront Area of Particular Concern
- Vessup Bay/East End Area of Particular Concern

Most of the Government-owned cays off the St. Thomas coast are declared wildlife sanctuaries (Map 2).

## Buck Island Reef National Monument

### Category of Protected Area

- a. Date Declared: Presidential Proclamation No. 3443, January 4, 1962. Added 30 acres of submerged lands by Presidential Proclamation No. 4346, February 4, 1975.
- b. Category of Designation: National Monument
- c. IUCN Equivalent: Natural Monument

### Description Summary

- a. Location: Buck Island, 1.5 miles off the north-eastern shore of St. Croix.
- b. Size: 880 acres, comprised of 176 acres of land and 704 acres of submerged lands. Expanded in January 2001 to 1,800 acres.
- c. Primary Reason for Designation: Coral reef protection.
- d. Name of Management Institution: National Parks Service
- e. Resource Protected by the Site:
  - Nesting for three endangered species (hawksbill and leatherback turtles, and brown pelican);
  - Nesting for one threatened species (St. Croix Ground Lizard);
  - Cultural artifacts on Buck Island;
  - Protection of a significant coral reef ecosystem.
- f. Relevance to USVI Environmental/Conservation Strategies: Coral reef management and fisheries management.
- g. Relevance to National/International Agreements/Initiatives:
  - Protection of outstanding natural and historic values for public use and enjoyment;
  - International Coral Reef Initiative;
  - Wildlife management (e.g. Specially Protected Areas and Wildlife).

### Major Issues

- a. Internal and External Threats:
  - Impacts from recreational activities;
  - Presence of invasive species;
  - Inappropriate fishing practices;
  - Storms;
  - Coral diseases.
- b. Challenges:
  - Prevention of impacts from invasive species;
  - Decreasing the impacts from recreation and other uses;
  - Engendering greater support from the USVI community;
  - Improving collaborative arrangements with USVI government agencies.

### Current Initiatives

- The 2001 expansion to 1,800 acres is contested by the USVI Government;
- The General Management Plan is being revised;
- Ongoing monitoring (fish surveys in 2001, one coral reef site included in the DPNR 2001-2003 Coral Reef Monitoring Project).

Information Source: National Park Service.1983. *Buck Island Reef National Monument: General Management Plan, Development Concept Plan, Environmental Assessment*. September 1983. U.S. Department of the Interior.

## Christiansted Waterfront Area of Particular Concern

### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

### Description Summary

- a. Location: Christiansted, St. Croix
- b. Size: Unknown
- c. Primary Reason for Designation: Improved development, protection of historic resources, recreation, and natural functions.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Protestant Cay is a critical habitat for the St. Croix Ground Lizard;
  - Altona Lagoon is a breeding ground for 3 species of endangered birds, 8 species of herons and egrets, and 19 species of shorebirds. Also functions as an over wintering site for migrant species of birds;
  - Long Reef and Round Reef are habitats for 59 fish species;
  - 6 Federally listed protected species and 13 locally listed protected species.
- f. Relevance to USVI Environmental/Conservation Strategies: Wildlife protection.
- g. Relevance to National/International Agreements/Initiatives: None

### Major Issues

- a. Internal and External Threats:
  - Sewage input to Christiansted Harbor;
  - Surface runoff into Christiansted Harbor and Gallows Bay;
  - Elevated levels of heavy metals in sediments in Gallows Bay;
  - Thermal effluent from WAPA.
- b. Challenges:
  - Pedestrian access between Gallows Bay and downtown Christiansted.

### Current Initiatives

- A management plan for the APC has been prepared, and is undergoing the approval process.

Information Source: Island Resources Foundation. 1993. Christiansted Waterfront Area of Particular Concern: A Comprehensive Analytical Study. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

### East End Area of Particular Concern

#### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

#### Description Summary

- a. Location: East End of St. Croix – Hughes Point to Cramer Park
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of terrestrial and marine ecosystems. Potential for incorporation of site into a Territorial Parks System.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Coral reef ecosystem;
  - Brown Pelican and Least Tern;
  - 3 species of sea turtles;
  - 4 species of whales.
- f. Relevance to USVI Environmental/Conservation Strategies: Territorial parks system, coral reef protection, recreation, wildlife protection, fisheries management.
- g. Relevance to National/International Agreements/Initiatives:
  - National Coral Reef Action Plan (and ICRI);
  - Wildlife management (e.g. Specially Protected Areas and Wildlife).

#### Major Issues

- a. Internal and External Threats: None
- b. Challenges: Balancing the development needs with resource management

**Current Initiatives:** None.

Information Source: Island Resources Foundation. 1993. East End Area of Particular Concern: A Comprehensive Analytical Study. Department of Planning & Natural Resources and University of the Virgin Islands. September 21, 1993.

### Frederiksted Waterfront Area of Particular Concern

#### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

#### Description Summary

- a. Location: Fredericksted, St. Croix
- b. Size: Unknown
- c. Primary Reason for Designation: Support of water-based commerce, recreational opportunities, and marine habitat protection.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - 4 prehistoric sites;
  - Fredericksted Historic District listed on National Register of Historic Places August 9, 1976. Entire town designated as a historic district by the USVI Government in 1990;
  - Public beaches and other recreational opportunities (dive sites);
  - Protected species (3 species of marine turtles, Brown Pelican. 2 species of egrets, 3 species of herons, 4 species of whales).
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Preservation of historic resources;
  - Provision of recreational opportunities.
- g. Relevance to National/International Agreements/Initiatives:
  - Preservation of historic resources.

#### Major Issues

- a. Internal and External Threats:
  - Poor water quality threatening subsistence and recreational uses, resulting from sediment in runoff, sewage, and land-based pollutants;
  - Anchor damage to seagrass habitats;
  - Marine debris.
- b. Challenges:
  - Reduction of user conflicts between fishermen and dive operators.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *Fredericksted Waterfront Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

**Great Pond and Great Pond Bay  
Area of Particular Concern and Area of Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- c. IUCN Equivalent: No equivalent in IUCN system

**Description Summary**

- a. Location: South-east shore of St. Croix – Milord Point to Mt. Fancy
- b. Size: Unknown
- c. Primary Reason for Designation: Protection as wildlife, educational, and natural areas.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management and Department of Housing, Parks and Recreation
- e. Resource Protected by the Site:
  - The salt pond is the second largest in the USVI – protection of resources and wildlife;
  - Significant coral reef ecosystem;
  - Large seagrass beds supports an active fishery;
  - Long list of Federal and USVI listed protected species (see APC report).
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Significant Natural Area designation;
  - Recommended for inclusion in Territorial Parks System (1999);
  - Identified in the 1979 Coastal Zone Management Plan as important for wildlife, as a natural area, and for education.
- g. Relevance to National/International Agreements/Initiatives:
  - Coastal Barrier Reef System designation in 1990;
  - Recommended for conservation development by DOI/NPS (1960).

**Major Issues**

- a. Internal and External Threats:
  - Recurring proposals for large developments;
  - Vehicular traffic on beach (causes beach erosion and sedimentation);
  - Illegal solid waste dumping;
  - Sedimentation from development activity in watershed;
  - Damage and human impacts resulting from lack of facilities to support human activities.
- b. Challenges:
  - Allowing road access to beach without damage to the resource.

**Current Initiatives**

- Department of Housing, Parks and Recreation developed a Draft Master Plan for Great Pond. The plan is currently under review.

Information Source: Island Resources Foundation. 1993. *Great Pond and Great Pond Bay Area of Particular Concern and Area for Preservation and Restoration: A Comprehensive Analytical Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

### **St. Croix Mutton Snapper Spawning Area**

#### **Category of Protected Area**

- a. Date Declared: 1995
- b. Category of Designation: Closed Area. Annual closure, March 1 to June 30.
- c. IUCN Equivalent: Habitat/Species management area

#### **Description Summary**

- a. Location: Southwestern shore of St. Croix, between Long Point and the southwest cape of Sandy Point.
- b. Size: Approximately 10 square miles
- c. Primary Reason for Designation: Protection of fish spawning aggregation
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Fish and Wildlife
- e. Resource Protected by the Site: Fish spawning area
- f. Relevance to USVI Environmental/Conservation Strategies: Fisheries management
- g. Relevance to National/International Agreements/Initiatives: Fisheries management

**Major Issues:** None

**Current Initiatives:** None

Information Source: Division of Fish & Wildlife and Division of Environmental Protection. 2001. *Recreational and Commercial Fisherman's Information Booklet*. Department of Planning and Natural Resources. June 2001.

## Salt River Bay Area of Particular Concern and Area of Preservation and Restoration

### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission  
Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- b. IUCN Equivalent: Natural Monument

### Description Summary

- a. Location: Northern shore of St. Croix, 4.5 miles west of Christiansted.
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of significant cultural and natural resources.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management and National Park Service
- e. Resource Protected by the Site:
  - Pre-Columbian and Columbian archeological resources;
  - Significant reef ecosystems;
  - Significant natural areas recommended in 1979;
  - A submarine canyon;
  - The largest remaining mangrove forest in the USVI;
  - 108 species of birds, 17 of which are listed locally as endangered;
  - Three species of marine turtles.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Protection of important fish habitat;
  - Supports the APC program;
  - Supports the non-point source pollution program;
  - Preservation of important cultural and historic resources.
- g. Relevance to National/International Agreements/Initiatives:
  - Supports the National Marine/Estuarine Sanctuaries Program;
  - National Historic Landmark status in 1965 for 17<sup>th</sup> century fort;
  - National Nature Landmark status in 1980, for 690-acre portion of area;
  - Listed in the Federal Coastal Barrier Resources System;
  - Listed on the national inventory of Critical Wetlands;
  - Over wintering site for migratory birds.

### Major Issues

- a. Internal and External Threats:
  - Residential development in the watershed diverts runoff to the main stream, yet generates heavy sediment loads in high rainfall events;
  - Impacts from agriculture in the lower reaches of the floodplain.
- b. Challenges:
  - Improving cooperation between the Federal and USVI governments for site management;
  - Managing development activity on the in-holdings.
- c. Other: A number of opportunities exist:
  - Local environmentalists routinely lead tours into the area;
  - There is continued interest by NOAA in the area as a national wildlife refuge;
  - Recommendation for the site to be designated as a World Heritage Site.

**Current Initiatives**

- A Management Plan is being prepared by the NPS.

Information Source: Island Resources Foundation. 1993. *Salt River Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

### **Salt River Marine and Wildlife Sanctuary**

#### **Category of Protected Area**

- a. Date Declared: July 19, 1995
- b. Category of Designation: Wildlife sanctuary
- c. IUCN Equivalent: Nature Reserve

#### **Description Summary**

- a. Location: Northern shore of St. Croix, 4.5 miles west of Christiansted
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of fish nursery area
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Fish and Wildlife
- e. Resource Protected by the Site: Fish nursery
- f. Relevance to USVI Environmental/Conservation Strategies: Fisheries management
- g. Relevance to National/International Agreements/Initiatives: Fisheries management

#### **Major Issues**

- a. Internal and External Threats: Fishing and commercial harvesting of fisheries resources still take place in the sanctuary.

**Current Initiatives**: Regulations pending to prohibit commercial fishing in the sanctuary.

Information Source: Division of Fish & Wildlife and Division of Environmental Protection. 2001. *Recreational and Commercial Fisherman's Information Booklet*. Department of Planning and Natural Resources. June 2001.

## Salt River National Historic Park and Ecological Preserve

### Category of Protected Area

- a. Date Declared: 1992. Created by an Act of Congress
- b. Category of Designation: National Natural Landmark (1980). Historic and Ecological Preserve.
- c. IUCN Equivalent: Natural Monument

### Description Summary

- a. Location: Northern shore of St. Croix, 4.5 miles west of Christiansted.
- b. Size: 912 acres
- c. Primary Reason for Designation: Protection of significant cultural and natural resources.
- d. Name of Management Institution: National Park Service and Government of the USVI, with oversight by a Commission constituted by Congress.
- e. Resource Protected by the Site:
  - Pre-Columbian and Columbian archeological resources;
  - Significant reef ecosystems;
  - A submarine canyon;
  - The largest remaining mangrove forest in the USVI.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Protection of important fish habitat;
  - Supports the APC program;
  - Supports the non-point source pollution program.
- g. Relevance to National/International Agreements/Initiatives: Supports the National Marine/Estuarine Sanctuaries Program (protection of areas for conservation, recreational, ecological, and aesthetic values).

### Major Issues

- a. Internal and External Threats:
  - Residential development in the watershed diverts runoff to the main stream, yet generates heavy sediment loads in high rainfall events.
- b. Challenges:
  - Improving cooperation between the Federal and USVI governments for site management;
  - Managing development activity on the in-holdings.
- c. Other: A number of opportunities exist:
  - Local environments routinely lead tours into the area;
  - There is continued interest by NOAA in the area for wildlife refuge/sanctuary benefits;
  - Recommendation for the site to be designated as a World Heritage Site.

### Current Initiatives

- A Management Plan is being prepared by the NPS\*.

### Information Source:

- Vauthrin, Carla D. 1993. *Legacy to Treasure: Salt River National Historic Park and Ecological Reserve*.
- \*Personal Communication – Joel Tutein, Superintendent

## Sandy Point Area of Particular Concern

### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: Natural Monument

### Description Summary

- a. Location: At the southwestern tip of St. Croix
- b. Size: Approximately 500 acres
- c. Primary Reason for Designation: Protection of habitat of significant value, and protection of endangered wildlife species
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Planning
- e. Resource Protected by the Site:
  - West End Salt Pond (the largest in the USVI);
  - The 398-acre Sandy Point National Wildlife Refuge;
  - A 3-mile nesting beach for turtles (the most important in the USVI and USA for leatherback turtles, and 1 of only 13 significant nesting sites worldwide);
  - 99 species of birds;
  - Endangered species – 5 Federally-listed species and 12 locally-listed species;
  - Sandy Point was identified as a significant natural area in 1979, and declared a National Natural Landmark in 1988;
  - Exceptional education values, supporting research by visiting scientists and fieldtrips of local students;
  - Prehistoric sites.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Wildlife protection;
  - Provision of recreational and educational opportunities;
  - Recommended for inclusion in the proposed Territorial Park System.
- g. Relevance to National/International Agreements/Initiatives: Wildlife protection

### Major Issues

- a. Internal and External Threats:
  - Heavy recreational use of beach and refuge creates a garbage disposal problem, and damages nesting sites;
  - Use of off-road vehicles damage nesting sites and kills animals;
  - Mongoose prey on the eggs and young of the endangered species.
- b. Challenges:
  - The ecology of the salt pond still not known. Detailed study previously recommended;
  - Carrying capacity study for recreational uses and improved management of area required.

**Current Initiatives:** Ongoing turtle research

Information Source: Island Resources Foundation. 1993. *Sandy Point Area of Particular Concern: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. July 1993.

### South Shore Industrial Area of Particular Concern

#### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

#### Description Summary

- a. Location: Approximately midway along the south shore of St. Croix, extending from Canegarden Bay to Manning Bay
- b. Size: Unknown
- c. Primary Reason for Designation: Reduction of pollution impacts to marine environment
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Largest industrial complex in the USVI;
  - Valuable coastal and marine habitats.
- f. Relevance to USVI Environmental/Conservation Strategies: Pollution control
- g. Relevance to National/International Agreements/Initiatives: None

#### Major Issues

- a. Internal and External Threats:
  - Pollution from oil, storm water runoff, process water from the industrial complex, and thermal effluent;
  - Inadequate solid waste disposal and sewage treatment at the Anguilla site;
  - Continued loss of wetland areas;
  - Contamination of groundwater.
- b. Challenges: Completion of mapping of significant natural areas in the APC.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *Southshore Industrial Area of Particular Concern: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. January 1993.

**Southgate Pond/Chenay Bay  
Area of Particular Concern and Area of Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- c. IUCN Equivalent: No equivalent in IUCN system

**Description Summary**

- a. Location: Pull Point/Green Cay, St. Croix
- b. Size: Total size unknown. Southgate Pond ~ 39.5 acres
- c. Primary Reason for Designation: Protection of environmentally sensitive area. 1979 Environmental Impact Statement for the USVI Coastal Zone Management Plan recommended that the eastern end of the site be preserved as a wildlife, educational, and research site.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Southgate Pond – important wetland and bird habitat;
  - Chenay Bay – nesting ground for Hawksbill, Leatherback, and Green sea turtles;
  - Green Cay – National Wildlife Refuge designation in 1977.
- f. Relevance to USVI Environmental/Conservation Strategies: Site designated in 1980 as Significant Natural Area, 1981 identified for inclusion in the Territorial Park System, 1990 as site for the Coastal Barrier Resource System.
- g. Relevance to National/International Agreements/Initiatives:
  - Sea turtle conservation;
  - Endangered species protection;
  - Coral reef protection.

**Major Issues**

- a. Internal and External Threats:
  - Planned developments (hotels, etc.);
  - Sedimentation reducing size of eastern “natural” portion of Southgate Pond;
  - Water quality problems caused primarily by Green Cay Marina.
- b. Challenges:
  - Reducing sedimentation;
  - Maintenance of hydrological integrity of Southgate Pond (filled portion is increasingly being vegetated);
  - Large private sector ownership of land in the APC.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1983. *Southgate Pond/Chenay Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

**St. Croix Coral Reef System**  
**Area of Particular Concern and Area of Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- c. IUCN Equivalent: Marine Park

**Description Summary**

- a. Location: Coakley Bay on the northeast coast, around the eastern tip of St. Croix, to Great Pond on the southeast coast.
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of the coral reef ecosystem and areas of high biological productivity. Recommended for placement in the Territorial Park System.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management.
- e. Resource Protected by the Site:
  - Coral reef communities;
  - Sea turtles;
  - St. Croix Ground Lizard and a variety of birds.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Includes several sites designated as Significant Natural Areas;
  - Contains Coastal Barrier Reef System sites (1990);
  - Inclusion in proposed National Marine Sanctuary/Marine Reserve System (1980);
  - Includes Green Cay National Wildlife Refuge (1977).
- g. Relevance to National/International Agreements/Initiatives:
  - Supports Buck Island Reef National Monument and Green Cay National Wildlife Refuge;
  - National Coral Reef Action Plan (and ICRI);
  - Sea turtle conservation (SPAW Programme).

**Major Issues**

- a. Internal and External Threats:
  - Tropical storms;
  - Global warming and coral bleaching;
  - Coral diseases;
  - Sedimentation and nutrient loading;
  - Industrial pollution and oil spills;
  - Recreational use impacts;
  - Inappropriate fishing practices.
- b. Challenges:
  - User conflicts;
  - Reducing impacts from land-based development;
  - Reducing recreational use impacts;
  - Reducing impacts from marine traffic (garbage, oil, etc.);
  - The January 2001 expansion of the Buck Island National Monument is being contested by the Government of the USVI.

**Current Initiatives**

- The NPS is revising the General Management Plan for the Buck Island National Monument;
- DPNR has included the greater portion of this APC in the proposed East End Marine Park;
- The Department of Housing, Parks and Recreation has prepared a development plan for Great Pond.

Information Source: Island Resources Foundation. 1993. *St. Croix Coral Reef System Area of Particular Concern and Area for Preservation and Restoration Management Plan*. Department of Planning and Natural Resources and University of the Virgin Islands. September 1993.

**Chocolate Hole/Great Cruz Bay  
Area of Particular Concern and Area for Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- Category of Designation: Area of Particular Concern and Area of Protection and Restoration
- b. IUCN Equivalent: No equivalent in IUCN system

**Description Summary**

- a. Location: Southwest coast of St. John
- b. Size: Unkown
- c. Primary Reason for Designation: Support of water-based commerce, recreational opportunities, and marine habitat protection.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - 6 Federally-listed endangered species (the green sea turtle, hawksbill turtle, Brown Pelican, Peregrine Falcon, Roseate Tern, and Prickly Ash tree);
  - 21 locally-listed animal species and 11 plant species;
  - Cultural resources (2 pre-historic sites).
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Non-point source pollution program;
  - Institutional coordination in development control.
- g. Relevance to National/International Agreements/Initiatives: None

**Major Issues**

- a. Internal and External Threats:
  - Increased residential and commercial development in the watershed has transported sediment and other pollutants to the marine environment, resulting in water quality degradation;
  - The large number of anchored and moored boats creates difficulty in maneuvering and creates use conflict;
  - Boat propellers re-suspend sediments;
  - There is increasing sediment and nutrient loading from watershed runoff and boat waste discharge.
- b. Challenges:
  - Maintenance of marine water quality, especially in Chocolate Hole;
  - Maintenance of riparian and gallery moist forest in Guinea Gut.

**Current Initiatives**

- DPNR and the Virgin Islands National Park conduct water quality monitoring programs within the APC.

Information Source: Island Resources Foundation. 1993. *Chocolate Hole/Great Cruz Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

## **Coral Bay Area of Particular Concern and Area of Preservation and Restoration**

### **Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission  
Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- b. IUCN Equivalent: No equivalent in IUCN system

### **Description Summary**

- a. Location: Southeast shore of St. John
- b. Size: Total size unknown. Total shoreline length approximately 10 miles
- c. Primary Reason for Designation: Protection of significant natural resources
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - 4 sites designated as Significant Natural Areas;
  - A part of the area was recommended for inclusion in the proposed VI Marine Reserve System;
  - Lagoon Point is designated as a National Natural Landmark;
  - 5 Federally-listed species of wildlife (2 sea turtles and 3 birds), and 20 locally-listed species (15 birds, 3 bats, the black coral, and the Jewfish);
  - Part of the Virgin Islands National Park falls within this APC.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Coral reef conservation;
  - Protection of significant natural areas.
- g. Relevance to National/International Agreements/Initiatives:
  - Recommended for inclusion in the Federal Coastal Barrier Resources System;
  - National parks system.

### **Major Issues**

- a. Internal and External Threats:
  - High flood potential;
  - Sedimentation in surface runoff results in degradation in marine water quality;
  - Sewage pollution from marine vessels and land-based sources.

### **Current Initiatives**

- A large portion of the area was included in the new Virgin Islands Coral Reef National Monument (2001).

### Information Source:

- Island Resources Foundation. 1993. *Coral Bay Area of Particular Concern and Area of Preservation and Restoration: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. July 1993.
- Federal Register. Monday, January 22, 2001. Part XX.

**Enighed Pond/Cruz Bay  
Area of Particular Concern and Area of Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission  
Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- b. IUCN Equivalent: No equivalent in IUCN system

**Description Summary**

- a. Location: Western side of St. John
- b. Size: Unknown
- c. Primary Reason for Designation: Continued provision of facilities for water-dependent commerce; provision of opportunities for recreation and enjoyment of unique, cultural, historical, and scenic qualities; and maintenance of clean water and health fish and wildlife habitats.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Wetlands – Enighed Pond and Little Enighed Pond;
  - Protection of water quality;
  - 8 endangered species of wildlife – 3 Federally listed and 5 locally listed;
  - Pre-historic and historic human settlements.
- f. Relevance to USVI Environmental/Conservation Strategies: Non-point source pollution program.
- g. Relevance to National/International Agreements/Initiatives: None

**Major Issues**

- a. Internal and External Threats:
  - Flood hazard;
  - Infilling of wetlands, and use for sewage disposal;
  - Sedimentation from surface runoff;
  - Noise levels from both marine and land-based activities.
- b. Challenges:
  - Development of a boat traffic management system to reduce use conflicts between commercial and recreational users;
  - Maintenance of Class B water quality standards in the marine component of the APC.

**Current Initiatives**: None

Information Source: Island Resources Foundation. 1993. *Enighed Pond/Cruz Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

## Frank Bay Wildlife and Marine Sanctuary

### Category of Protected Area

- a. Date Declared: March 24, 2000
- b. Category of Designation: Wildlife and marine sanctuary
- c. IUCN Equivalent: Strict Nature Reserve

### Description Summary

- a. Location: Southern shore of St. John
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of essential fish habitat
- d. Name of Management Institution: Department of Planning and Natural Resources,  
Division of Fish and Wildlife
- e. Resource Protected by the Site: Fish habitat
- f. Relevance to USVI Environmental/Conservation Strategies: Fisheries management
- g. Relevance to National/International Agreements/Initiatives: Fisheries management

**Major Issues:** None

**Current Initiatives:** Regulations are pending that will prohibit fishing or resource harvesting within Frank Bay Pond.

**Information Source:** Division of Fish & Wildlife and Division of Environmental Protection. 2001. *Recreational and Commercial Fisherman's Information Booklet*. Department of Planning and Natural Resources. June 2001.

## Virgin Islands Coral Reef National Monument

### Category of Protected Area

- a. Date Declared: January 17, 2001, by Presidential Proclamation No. 7399
- b. Category of Designation: National Monument
- c. IUCN Equivalent: Natural Monument

### Description Summary

- a. Location: East and south of St. John
- b. Size: 12,708 acres
- c. Primary Reason for Designation: Protection of endangered and other scientific assets
- d. Name of Management Institution: National Park Service
- e. Resource Protected by the Site:
  - Nearshore nursery habitats;
  - Fish spawning sites;
  - Feeding sites for 25 species of seabirds;
  - Endangered species of turtles (4 species), whales (2 species), dolphins (4 species), 2 species of terns, and the Brown Pelican;
  - “Countless species of reef fish, invertebrates, and plants”.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Coral reef protection;
  - Fisheries management;
  - Protection of essential habitats.
- g. Relevance to National/International Agreements/Initiatives:
  - Coral reef protection;
  - Fisheries management;
  - Protection of essential habitats.

### Major Issues: None

- a. Internal and External Threats: None
- b. Challenges:
  - Maintenance of water quality;
  - Generating community support for the new monument.

**Current Initiatives:** Preparation of the General Management Plan by the National Park Service.

Information Source: Federal Register. Monday, January 22, 2001. Part XX.

## Virgin Islands National Park

### Category of Protected Area

- a. Date Declared: Established 1956. Expanded in 1962 to include offshore and submerged areas
- b. Category of Designation: National park
- c. IUCN Equivalent: National park

### Description Summary

- a. Location: St. John<sup>17</sup>
- b. Size: 5,650 acres of submerged land<sup>18</sup>
- c. Primary Reason for Designation: Protection of significant ecological and scenic values
- d. Name of Management Institution: National Park Service
- e. Resource Protected by the Site:
  - Coral reefs;
  - 12 Federally-listed threatened species of wildlife;
  - A diverse mix of species of flora and fauna;
  - Historic resources (including Pre-Columbian sites).
- f. Relevance to USVI Environmental/Conservation Strategies: Protection of natural and historic resources
- g. Relevance to National/International Agreements/Initiatives: Protection of significant natural and historic resources to provide recreational opportunities.

### Major Issues

- a. Internal and External Threats:
  - Vandalism, poaching, and violations by visitors;
  - Impact of invasive/exotic species;
  - Deterioration of historic structures;
  - Alteration of viewsheds by developments on inholdings;
  - Sedimentation from run-off;
  - Non-point source pollution.
- b. Challenges:
  - Inadequate financing;
  - Need for improved relationship with local community;
  - Management of the new 12,708 acre Virgin Islands Coral Reef National Monument declared in 2001.
- c. Other: Significant support from the Friends of the Virgin Islands National Park

### Current Initiatives

- Gateway planning;
- New General Management Plan and other operational plans under preparation.

Information Source: National Parks Conservation Association. 2001. *Virgin Islands National Park: Business Plan*. National Parks Service, Summer 2001.

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<sup>17</sup> Hassel Island in Charlotte Amalie Harbor (St. Thomas) is designated as part of the Virgin Islands National Park, but it has no marine component.

<sup>18</sup> The size of the terrestrial portion of the national park is approximately 7,200 acres.

## **Botany Bay Area of Particular Concern and Area for Preservation and Restoration**

### **Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern and Area for Preservation and Restoration
- c. IUCN Equivalent: Natural Monument

### **Description Summary**

- a. Location: Western end of St. Thomas
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of natural and archeological/historical resources and values.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site: Extensive. Refer to 1993 analytical study.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Contains 4 sites nominated as Significant Natural Areas;
  - Entire Estate Botany Bay recommended for inclusion in the Territorial Park System (1976);
  - Contains 2 sites listed as wilderness areas (1960 Park and Recreation Plan);
  - Marine areas recommended for inclusion in the VI Marine Reserve System.
- g. Relevance to National/International Agreements/Initiatives:
  - 2 sites listed on National Register of Historic Places (1976);
  - 10 islets and cays listed in the National Registry of Natural Landmarks.

### **Major Issues**

- a. Internal and External Threats:
  - Resort development in the area pending.
- b. Challenges:
  - Balancing development and conservation objectives.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *Botany Bay Area of Particular Concern and Area for Preservation and Restoration: A Comprehensive Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

### East End Conservation Area

#### Category of Protected Area

- a. Date Declared:
  - St. James Marine Reserve and Wildlife Sanctuary – September 16, 1994
  - Cas Cay/Mangrove Lagoon Reserve and Wildlife Sanctuary – September 16, 1994
  - Compass Point Marine Reserve and Wildlife Sanctuary – September 24, 1992
- b. Category of Designation: Marine Reserve
- c. IUCN Equivalent: Strict Nature Reserve

#### Description Summary

- a. Location: East end, St. Thomas
- b. Size: Unknown
- c. Primary Reason for Designation: Protection of essential fish habitat
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Fish and Wildlife
- e. Resource Protected by the Site: Essential fish habitat
- f. Relevance to USVI Environmental/Conservation Strategies: Fisheries management
- g. Relevance to National/International Agreements/Initiatives: Fisheries management

#### Major Issues

- a. Internal and External Threats: Pollution from land-based sources
- b. Challenges: Maintaining integrity of habitats.

**Current Initiatives:** Permit system required to catch baitfish or hook and line fish in reserve.

Information Source: Division of Fish & Wildlife and Division of Environmental Protection. 2001. *Recreational and Commercial Fisherman's Information Booklet*. Department of Planning and Natural Resources. June 2001.

## Magens Bay and Watershed Area of Particular Concern

### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

### Description Summary

- a. Location: North shore of St. Thomas, between Tropaco and Picara Points
- b. Size: Unknown
- c. Primary Reason for Designation: To ensure watershed management for protection of resources and scenic quality, and improved public access to the beach and park.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management and Magens Bay Authority
- e. Resource Protected by the Site:
  - One of the primary archeological sites in the USVI;
  - Several forest types, including a moist forest community;
  - Fish nursery habitats in the bay;
  - Endangered species of wildlife, 4 Federally-listed and 4 locally-listed species.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Preservation of archeological sites, some listed on the National Register of Historic Places;
  - The area was recommended in 1991 for inclusion in the Territorial Parks System;
  - Identified as a Significant Natural Area in the Coastal Zone Management Program and Final Environmental Impact Assessment 1979.
- g. Relevance to National/International Agreements/Initiatives:
  - Recommended by the National Park Service as a scenic park in 1960;
  - Part of the area was included in the Coastal Barrier Resources System in 1990.

### Major Issues

- a. Internal and External Threats:
  - Sewage disposal via septic systems and filter fields;
  - Periodic proposals for resort-style development;
  - Litter;
  - Inadequate public transportation from Charlotte Amalie;
  - Marine resource use conflicts (between boaters and swimmers);
  - Noise nuisance (beach parties bothering other beach users, helicopter tours bothering residents);
  - Sediment loading to marine environment resulting from construction of residences.
- b. Challenges:
  - Minimizing development in the watershed to protect the water quality in the bay;
  - Restricting commercial development in the watershed;
  - Increasing visitation without overloading capacity of the beach and other public areas.
- c. Other:
  - Carrying capacity study of the beach and other facilities recommended.

**Current Initiatives:** None.

Information Source: Island Resources Foundation. 1993. *Magens Bay and Watershed Area of Particular Concern: A Comprehensive Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

## **Mandahl Bay Area of Particular Concern and Area of Preservation and Restoration**

### **Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern and Area of Preservation and Restoration
- c. IUCN Equivalent: No equivalent in IUCN system

### **Description Summary**

- a. Location: North side of St. Thomas, between Lovenlund and Tutu Bays
- b. Size: Unknown
- c. Primary Reason for Designation: Provision of wildlife and scenic park; protection of significant natural resources and potential recreation areas; halt degradation and preserve and/or restore area
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - Salt ponds;
  - Birds and other wetlands species;
  - Abundant marine resources (fish, corals, etc.);
  - Hawksbill turtle nesting sites;
  - 13 endangered/threatened species of wildlife, including the humpback whale.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Wildlife protection;
  - Provision of recreational opportunities;
  - Education;
  - Recommended for inclusion in Territorial Parks System.
- g. Relevance to National/International Agreements/Initiatives:
  - Included in Federal Coastal Barrier Resource System;
  - Wildlife protection;
  - Convention on Biological Diversity (CBD) and Protocol concerning Specially Protected Areas and Wildlife (SPA).

### **Major Issues**

- a. Internal and External Threats:
  - Erosion of beach;
  - Deteriorating water quality from storm water runoff.
- b. Challenges:
  - Curtailing recreational use to reduce beach erosion;
  - Ensuring appropriate development in the APC;
  - Improved solid waste removal.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *Mandahl Bay Area of Particular Concern and Area of Preservation and Restoration: Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. September 1993.

**Mangrove Lagoon/Benner Bay**  
**Area of Particular Concern and Area of Preservation and Restoration**

**Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: Managed Resource Protected Area

**Description Summary**

- a. Location: Southeast shore of St. Thomas
- b. Size: Unknown
- c. Primary Reason for Designation: To protect exceptional natural values, particularly the fish nursery areas.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site:
  - One of the largest remaining mangrove areas in the USVI;
  - 495 species of flora and fauna, including 100 species of shorebirds, sightings of the humpback whale;
  - Fish nursery habitats;
  - Over-wintering site for approximately 20 species of migratory bird;
  - Designated as significant natural area. Cas Cay and Compass Point Pond designated as Territorial Wildlife Refuges;
  - Recommended for designation as National Marine Sanctuary;
  - Prehistoric sites.
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Preservation of historic sites;
  - Protection of fish nursery and wildlife habitat;
  - Identified as a Significant Natural Area in the Coastal Zone Management Program and Final Environmental Impact Assessment 1979.
- g. Relevance to National/International Agreements/Initiatives:
  - Part of the area was included in the Coastal Barrier Resources System in 1990.

**Major Issues**

- a. Internal and External Threats:
  - Sewage disposal from plants, leach fields, and live-aboard boats;
  - The APC supports approximately a third of the population of St. Thomas, resulting in significant levels of input of pollution into the marine environment from residential, commercial, and industrial activities;
  - Litter;
  - Leachate from the garbage dump;
  - The marinas contribute to habitat destruction and water pollution;
  - Damage to cultural/historic resources.
- b. Challenges:
  - Reduction of land use conflicts;
  - Reduction of non-point source pollution loading to the marine environment;
  - Reducing pollution impact and maintaining flows in Turpentine Run, the largest perennial stream on St. Thomas.
- c. Other:

- Determination of the level of groundwater contamination from the dump and other sources;
- Improving passive recreation/access to the shoreline, significantly reduced by private and commercial development.

**Current Initiatives:**

- A management plan has been prepared for this APC, which is now going through the approval process.

Information Source: Island Resources Foundation. 1993. *Mangrove Lagoon/Benner Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

### **St. Thomas Harbor and Waterfront Area of Particular Concern**

#### **Category of Protected Area**

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent in IUCN system

#### **Description Summary**

- a. Location: Charlotte Amalie Harbor, St. Thomas
- b. Size: Total size unknown. St. Thomas Harbour is approximately 0.72 square miles
- c. Primary Reason for Designation: Protection of native fishing boat uses; recreational uses; protection of traditional waterfront commercial activities.
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site: Endangered species. Humpback whale sighting in 1993 and manatee sighting in 1998
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Sprat Bay and South Limestone Bay (Water Island) included in Federal Coastal Barrier Resources System in 1990;
  - Part of southeast shore of Water Island identified as part of the proposed VI Marine Reserve System;
  - Flamingo Point (Water Island) identified as a significant natural area in the coastal zone management program, 1979.
- g. Relevance to National/International Agreements/Initiatives: Wildlife protection

#### **Major Issues**

- a. Internal and External Threats:
  - Deterioration of natural, historical, and cultural resources;
  - Damage to infrastructure and property from storm hazards and flooding;
  - Significant pollution loading to the harbor from solid waste, runoff, and ship-generated waste.
- b. Challenges:
  - Inadequate facilities for recreational and pedestrian uses of the waterfront;
  - Use conflicts in marine traffic, overcrowding, safety concerns;
  - Pollution control;
  - Traffic congestion and delays;
  - Preservation of historic character of downtown Charlotte Amalie.
- c. Other:
  - Official designation of significant natural areas uncompleted.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *St. Thomas Harbor and Waterfront Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

### Vessup Bay/East End Area of Particular Concern

#### Category of Protected Area

- a. Date Declared: 1979, Legislature of the USVI. October 1, 1991, Coastal Zone Commission
- b. Category of Designation: Area of Particular Concern
- c. IUCN Equivalent: No equivalent I IUCN system

#### Description Summary

- a. Location: Red Hook, St. Thomas
- b. Size: Unkown
- c. Primary Reason for Designation: Importance of the harbor facilities, and the need to address the intense concentration of activities in the area
- d. Name of Management Institution: Department of Planning and Natural Resources, Division of Coastal Zone Management
- e. Resource Protected by the Site: Endangered species (snake, 3 sea turtles, birds)
- f. Relevance to USVI Environmental/Conservation Strategies:
  - Red Hook Pond placed within Coastal Barrier Resources System. Also recommended for inclusion in the Territorial Parks System;
  - The APC also covers part of Great Bay and Mangrove Lagoon/Brenner Bay;
  - A number of good beaches, Muller Bay Beach and Vessup Beach, occur in the area.
- g. Relevance to National/International Agreements/Initiatives: Coastal Barrier Resources System designation

#### Major Issues

- a. Internal and External Threats:
  - Water pollution (mainly nutrients) resulting from discharges from boats;
  - Sediment loading to the marine environment from development activity;
  - Noise pollution from boat and vehicular traffic and recreational activities (outdoor bands);
  - Wrecks present a safety hazard, especially to small children;
  - Marine debris impacting on the mangrove communities;
  - Increasing air pollution from marine and vehicular traffic.
- b. Challenges:
  - Reduction of impacts from development activity;
  - Reduction of water pollution, especially from non-point sources.

**Current Initiatives:** None

Information Source: Island Resources Foundation. 1993. *Vessup Bay/East End Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

**CHAPTER 10: PROPOSED MARINE PROTECTED AREAS**

**St. Croix (Map 3)**

- Annaly Point
- Chenay Bay/Southgate Pond
- Coakley Bay
- Great Pond Bay
- Issac Bay
- Jack Bay
- Long Reef
- Manchenil Bay
- Point Udall
- Salt River/Sugar Bay
- Sandy Point
- Shoy Beach/Altona Lagoon

**St. John (Map 4)**

- Coral Bay Harbor
- Fish Bay
- Johns Folly Bay
- Hurrican Hole
- LeDuck Island
- Newfound Bay
- Round Bay

**St. Thomas (Map 5)**

- Botany Bay
- Brewers Bay
- Flat, Turtledove, & Saba Cays
- Hans Lollick
- Mandahl Bay
- Little Hans Lollick/Pelican Cay
- Perseverence Bay
- Salt Cay/West Cay
- Sandy Bay/Little St. Thomas
- Smith Bay/Linquist Beach
- Vessup Bay

A more detailed treatment of potential sites is provided in the 2002 Resource Description Report by Island Resources Foundation.

## **PART III: SYSTEM DEVELOPMENT**

The preceding chapters of this document clearly shows that despite ongoing initiatives related to protected area management, a significant amount of work remains to be undertaken in order to establish a system of protected areas in the U.S. Virgin Islands. This ranges from policy development, through site assessment, to community development initiatives.

The subsequent chapters identify the most critical issues and requirements, and propose a set of priorities for implementation.

## **CHAPTER 11: GAPS IN THE EXISTING FRAMEWORK**

This document has as its focus, a system of marine protected areas for the U.S. Virgin Islands (USVI). However, as previously articulated, the integrity of a system of protected areas based solely on marine sites cannot be sustained in the long term. A number of issues need to be addressed in order to develop a comprehensive and sustainable system.

### **Issue # 1: Unifying Policy Framework<sup>19</sup>**

There has been some discussion and previous initiatives examining the issue of development of a Territorial Park System (TPS). That discussion has taken place among a restricted number of institutions, has been sporadic, and has not been presented and pursued as a major initiative that supports the development thrust articulated for the Territory.

There needs to be a clear framework that places protected areas in a more central and complementary position within the development planning process. The absence of that framework has resulted in conflicts, wastage of time and money, and a continued hodge podge approach to protected area development. The absence of a clear and consistent framework has also severely hampered the allocation of public resources to support an ongoing initiative.

### **Issue # 2: Unifying Legislative Framework**

There is evidence to suggest that the legislative framework to support a TPS was fragmented during the reorganization of the Department of Conservation and Cultural Affairs in 1987. Legislation is once again required that speaks specifically to a system of protected areas for the USVI.

An overall legislation as suggested would significantly reduce, if not prevent outright, the practice of giving sites multiple designations over a period of years without improvement in the status of the resources such designations are supposed to protect. More importantly, it would clearly set out how the development of the system should proceed.

### **Issue # 3: Marine versus Terrestrial Sites**

Protected areas within the control of the Government of the USVI will fall within the 3-mile territorial limit. As such, these sites will be impacted by nearshore activities as well as those taking place on land. The main problem presently facing the marine environment, and hence the VI economy in the short term, is the impact of land-based sources of pollution. As such, activities on land need to be managed in a manner that reduces, to the greatest extent possible, the adverse impacts on the marine environment. Additionally, terrestrial protected areas are required to protect terrestrial and marine ecosystems, and to address a range of conservation issues.

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<sup>19</sup> The unifying policy framework is the recommended Policy and Plan for a System of Protected Areas for the U.S. Virgin Islands (Section 5.2).

A large portion of the marine area that falls under some form of protected area regime is contained within areas of particular concern (APCs). Though APCs provide a good framework for addressing a number of issues related to development impacts on protected areas, the relationship between both initiatives has not been clearly articulated. The fact that APCs often contain other types of protected areas underscores the need for a more consistent and comprehensive system, which can only be achieved by having a unifying policy and legislative framework.

**Issue # 4: Private Lands and Protected Areas**

A number of coastal and terrestrial sites identified as potential protected areas are privately owned. The business of acquiring access to, or ownership of, such lands for protected area management purposes need to be supported by policy and legislation, as well as the necessary financial resources. The parcels, and the process of acquiring such parcels, should be clear so as to reduce or eliminate conflicts with private owners as well as with future business investors. The process for acquisition of such lands would normally be set out in the enabling legislation and policy framework.

**Issue # 5: Representative Sites**

To date, the emphasis in marine protected areas in the USVI has been on species management, particularly fisheries management, and even more narrowly on regulating catch. Even from the perspective of fisheries management, more emphasis needs to be placed on habitat management.

More importantly, a range of types of sites is needed to provide and sustain the range of potential benefits to be accrued from managing a system of protected areas. The maintenance of landscapes and seascapes are difficult at best, and need to be addressed within the wider land use planning and development control process as well.

A number of these gaps can be addressed by taking a more systematic approach to protected area development.

## **CHAPTER 12:           REQUIRMENTS FOR SYSTEM DEVELOPMENT**

The development of a system of protected areas in the U.S. Virgin Islands require a number of supporting elements, involving the various sectors and groups in the community. The program elements identified below should all be developed in the first five years of development of the system of protected areas.

### **a.       Public Education Program**

The existing negative perception of protected areas held by the general public has to be overcome if public support and active participation by stakeholders is to be achieved. The public education program must therefore:

- Portray realistic benefits;
- Address local concerns;
- Deliver target-specific messages; and
- Encourage participation.

### **b.       Policy and Plan for a System of Protected Areas**

The need for a policy and legislative framework to support system development and management was previously discussed (Chapter 11). Additionally, a clear plan of action is required to translate the policies into specific programs, procedures, and targets. This will facilitate long-term planning and resource commitments by government agencies, private groups, and civil society organizations. The System Plan would necessarily include both marine and terrestrial sites.

The National Park Service regularly updates their management policies (National Parks Service 2000), but a similar set of policies for the USVI system of protected areas need to be developed.

### **c.       Detailed Site Assessments**

Many of the sites previously recommended have changed significantly in the past decade or two. The most recent assessment was done in 1990, in the aftermath of Hurricane Hugo. There have been other hurricanes since then, and the present status of the resources is uncertain. Detailed site assessments will be required to set baseline conditions, determine boundaries, and establish priorities for establishment. The determination of priorities for site establishment should include a gap analysis, to ensure that critical ecosystems are captured in the mix of sites to be established as part of the system.

### **d.       Legislative Review and Revisions**

Legislative changes are required to support a wide range of issues. These changes range from overall legislation to support a system of protected areas to obligating public participatory mechanisms (Chapter 5).

**e. An Agreed Institutional Framework**

Previous discussions among the main protected area management institutions have identified the need for a new agency with responsibility for managing the system of protected areas. In addition to redefining the roles of the existing institutions, the institutional mandates and coordination mechanisms need to be restructured to accommodate not only this new lead agency, but also the civil society institutions that have the capacity to participate in the process.

**f. Consultation Mechanisms and Communication Strategy**

The institutional framework must provide an institutional space that facilitates programmatic linkages and rationalization. An institutional space recommended for this purpose is the Protected Area Advisory Council (Section 6.2). A communications strategy facilitates the ongoing dialogue, providing not only feedback on programmes and actions, but also supporting the free entry to, and exit from, the process by institutional members. A key objective of this component is to periodically reaffirm the objectives and strengths of the process.

**g. Trust Fund and Capital Campaign**

Preliminary projections for the operations of the East End Marine Park, St. Croix, indicate funding requirement of approximately US\$5 million for the first 5 years, with demand at approximately US\$1 million per year (The Nature Conservancy, 2002). If several sites are brought into the system, the annual funding requirement, not to mention new capital costs, will be substantial. A reliable and consistent source of funds must be developed.

Though Chapter 8 addresses the policies for financial management, it does not address the actual financial demand, nor does it state the length of time it takes to capitalize trust funds. With a \$5 million price tag for the first marine park, with the APCs about to come on stream, and with other sites such as Great Pond and Salt River looming large on the horizon, the development of the funding mechanism must be one of the first priorities addressed.

**h. Procedural Guidelines**

In addition to the system policies, procedural guidelines provide guidance on implementation of a wide range of strategies. Such guidelines not only establish standards for the system, but also ensure transparency and consistency. While such system guidelines are not critical to the establishment of the first site, they should be developed as soon as possible.

**i. Institutional Strengthening**

The main institutions supporting the development of the system of protected areas should be targeted for institutional strengthening. This should have at its core: additional staff, appropriately trained staff, and appropriate management systems.

**j. Stakeholder Negotiation and Conflict Resolution Processes**

Environmental decision making in the USVI is fairly antagonistic, even with the legally mandated public hearing process. More consistent and better mechanisms have to be developed to encourage the articulation of stakeholder/group preferences, concerns, and eventually support group decision making. The building of community trust and collaboration processes cannot be legislated. As such, the civil society institutions should be targeted for institutional strengthening in the development and maintenance of community consultation processes.

**k. Detailed Socio-economic Study**

The socio-economic assessment conducted as part of this VI Marine Park Project was quite preliminary, even though it yielded good results. Just as importantly, it has identified critical issues that need to be addressed, as well as information/data required for decision making. A much more detailed study should be undertaken to quantify the use of the environmental resources, the value of those resources to the economy, and the actual demand for such resources. Without that data, decisions made solely on the basis of the number of hotel rooms to be built will continue to generate social conflict.

**l. Data Management System**

Obviously better management requires a system of capturing, storing, evaluating, and disseminating information. Currently, different institutions store their own data/information. As such, collection protocols are often dissimilar, storage formats are different, and the consistency and usefulness of the data is questionable. Good decision making requires good information, across all the institutions that generate or capture relevant data. As such, both a data management system to support the management of the system of protected areas and an information network to support interaction of the institutions, need to be developed.

## List of References

- Davey, A.G. 1998. *National System Planning for Protected Areas*. IUCN, Gland.
- Day, J.C. and J.C. Roff. 2000. *Planning for Representative Marine Protected Areas: A Framework for Canada's Oceans*. World Wildlife Fund Canada, Toronto.
- Division of Fish & Wildlife and Division of Environmental Protection. 2001. *Recreational and Commercial Fisherman's Information Booklet*. Department of Planning and Natural Resources. June 2001.
- FAO. 1991. *Statistics Series No. 68: Catches and Landings*. FAO, Rome.
- Federal Register. Monday, January 22, 2001. Part XX.
- Island Resources Foundation. 2002. *Resource Description Report*. University of the Virgin Islands and Department of Planning and Natural Resources. St. Thomas, USVI.
- Island Resources Foundation. 1993. *Christiansted Waterfront Area of Particular Concern: A Comprehensive Analytical Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.
- Island Resources Foundation. 1993. *East End Area of Particular Concern: A Comprehensive Analytic Study*. Department of Planning & Natural Resources and University of the Virgin Islands. September 21, 1993.
- Island Resources Foundation. 1993. *Fredericksted Waterfront Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.
- Island Resources Foundation. 1993. *Great Pond and Great Pond Bay Area of Particular Concern and Area for Preservation and Restoration: A Comprehensive Analytic Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.
- Island Resources Foundation. 1993. *Salt River Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.
- Island Resources Foundation. 1993. *Sandy Point Area of Particular Concern: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. July 1993.

Island Resources Foundation. 1983. *Southgate Pond/Chenay Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

Island Resources Foundation. 1993. *Southshore Industrial Area of Particular Concern: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. January 1993.

Island Resources Foundation. 1993. *St. Croix Coral Reef System Area of Particular Concern and Area of Preservation and Restoration: Management Plan*. Department of Planning and Natural Resources and University of the Virgin Islands. September 1993.

Island Resources Foundation. 1993. *Chocolate Hole/Great Cruz Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

Island Resources Foundation. 1993. *Coral Bay Area of Particular Concern and Area of Preservation and Restoration: Draft Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. July 1993.

Island Resources Foundation. 1993. *Enighed Pond/Cruz Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

Island Resources Foundation. 1993. *Botany Bay Area of Particular Concern and Area for Preservation and Restoration: A Comprehensive Study*. Department of Planning and Natural Resources and University of the Virgin Islands. September 21, 1993.

Island Resources Foundation. 1993. *Magens Bay and Watershed Area of Particular Concern: A Comprehensive Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

Island Resources Foundation. 1993. *Mandahl Bay Area of Particular Concern and Area of Preservation and Restoration: Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. September 1993.

Island Resources Foundation. 1993. *Mangrove Lagoon/Benner Bay Area of Particular Concern and Area of Preservation and Restoration: A Comprehensive Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

Island Resources Foundation. 1993. *St. Thomas Harbor and Waterfront Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

Island Resources Foundation. 1993. *Vessup Bay/East End Area of Particular Concern: A Comprehensive Analytic Study*. University of the Virgin Islands and Department of Planning and Natural Resources. September 21, 1993.

IUCN. 1994. *Guidelines for Protected Area Management Categories*. CNPPA with the assistance of WCMC. IUCN, Gland.

Kelleher, G. 1999. *Guidelines for Marine Protected Areas*. IUCN, Gland.

National Parks Conservation Association. 2001. *Virgin Islands National Park: Business Plan*. National Parks Service, Summer 2001.

National Park Service. 2000. *Management Policies 2001*. U.S. Department of the Interior.

National Park Service. 1983. *Buck Island Reef National Monument: General Management Plan, Development Concept Plan, Environmental Assessment*. September 1983. U.S. Department of the Interior.

National Research Council. 2001. *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems*. National Academy of Sciences. Washington, DC.

NOAA. 1979. *The Virgin Islands Coastal Management Program and Final Environmental Impact Statement*. U.S. Department of Commerce. Washington, DC.

Norse, E. (Ed.). 1993. *Global Marine Biological Diversity: A Strategy for Building Conservation into Decision Making*. Island Press, Washington.

Salm, R.V, Clark, J. and Siirila E. 2000. *Marine and Coastal Protected Areas: A guide for planners and managers*. IUCN. Washington DC.

Sobel, J. 1996. "Marine Reserves: Necessary Tools for Biodiversity Conservation?", in *Global Biodiversity*. 1996: 8-18.

The Nature Conservancy. 2002. *St. Croix East End Marine Park Management Plan*. University of the Virgin Islands and Department of Planning and Natural Resources. USVI, January 25, 2002.

Vauthrin, Carla D. 1993. *Legacy to Treasure: Salt River National Historic Park and Ecological Reserve*.

## **APPENDIX 1**

### **Institutions and Persons Consulted**

1. Department of Planning and Natural Resources
  - Sue Higgins – Senior Planner, Division of Coastal and Comprehensive Planning
  - Janice Hodge – Director, Division of Coastal Zone Management
  - Barbara Kojis, Ph.D. – Director, Division of Fish & Wildlife
  - Myron Jackson – Director, Division of Archeology & Historic Preservation
2. The Nature Conservancy
  - Stephanie Wear
  - Robert Weary – Director, Virgin Islands Program
3. Caribbean Fisheries Management Council
  - Virdin Brown – Chair
4. Department of Housing, Parks and Recreation
  - Ira Hobson – Commissioner
5. National Park Service
  - Zandy Hillis-Starr – Manager, Biological Resources
  - Joel Tutein - Superintendent
  - John King – Superintendent
  - Don Catanzaro, Ph.D.
6. St. Croix Environmental Association
  - Bill Turner – Executive Director
7. Virgin Islands Port Authority
  - Darlan Brin
8. Community Briefings, Focus Groups Meetings, and Stakeholder Meetings
  - St. Croix, St. John, and St. Thomas – November and December 2001 and January 2002

## **APPENDIX 2**

### **Marine Protected Areas Presidential Executive Order**

#### **Executive Order 13158** **Marine Protected Areas**

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the National Marine Sanctuaries Act (16 U.S.C. 1431 et seq.), National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), National Park Service Organic Act (16 U.S.C. 1 et seq.), National Historic Preservation Act (16 U.S.C. 470 et seq.), Wilderness Act (16 U.S.C. 1131 et seq.), Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.), Coastal Zone Management Act (16 U.S.C. 1451 et seq.), Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), Marine Mammal Protection Act (16 U.S.C. 1362 et seq.), Clean Water Act of 1977 (33 U.S.C. 1251 et seq.), National Environmental Policy Act, as amended (42 U.S.C. 4321 et seq.), Outer Continental Shelf Lands Act (42 U.S.C. 1331 et seq.), and other pertinent statutes, it is ordered as follows :

**Section 1. Purpose.** This Executive Order will help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPAs). An expanded and strengthened comprehensive system of marine protected areas throughout the marine environment would enhance the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. To this end, the purpose of this order is to, consistent with domestic and international law: (a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities.

**Section 2. Definitions.** For the purposes of this order:

(a) "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.

(b) "Marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands thereunder, over which the United States exercises jurisdiction, consistent with international law.

(c) The term "United States" includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

**Section 3. MPA Establishment, Protection, and Management.** Each Federal agency whose authorities provide for the establishment or management of MPAs shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Agencies implementing this section shall consult with the agencies identified in subsection 4(a) of this order, consistent with existing requirements.

**Section 4. National System of MPAs.** (a) To the extent permitted by law and subject to the availability of appropriations, the Department of Commerce and the Department of the Interior, in consultation with the Department of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies shall develop a national system of MPAs. They shall coordinate and share information, tools, and strategies, and provide guidance to enable and encourage the use of the following in the exercise of each agency's respective authorities to further enhance and expand protection of existing MPAs and to establish or recommend new MPAs, as appropriate:

- (1) science-based identification and prioritization of natural and cultural resources for additional protection;
- (2) integrated assessments of ecological linkages among MPAs, including ecological reserves in which consumptive uses of resources are prohibited, to provide synergistic benefits;
- (3) a biological assessment of the minimum area where consumptive uses would be prohibited that is necessary to preserve representative habitats in different geographic areas of the marine environment;
- (4) an assessment of threats and gaps in levels of protection currently afforded to natural and cultural resources, as appropriate;
- (5) practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs;
- (6) identification of emerging threats and user conflicts affecting MPAs and appropriate, practical, and equitable management solutions, including effective enforcement strategies, to eliminate or reduce such threats and conflicts;
- (7) assessment of the economic effects of the preferred management solutions; and
- (8) identification of opportunities to improve linkages with, and technical assistance to, international marine protected area programs.

(b) In carrying out the requirements of section 4 of this order, the Department of Commerce and the Department of the Interior shall consult with those States that contain portions of the marine environment, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, tribes, Regional Fishery Management Councils, and other entities, as appropriate, to promote coordination of Federal, State, territorial, and tribal actions to establish and manage MPAs.

(c) In carrying out the requirements of this section, the Department of Commerce and the Department of the Interior shall seek the expert advice and recommendations of non-Federal scientists, resource managers, and other interested persons and organizations through a Marine Protected Area Federal Advisory Committee. The Committee shall be established by the Department of Commerce.

(d) The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order. They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order. (e) The Department of Commerce's National Oceanic and Atmospheric Administration shall establish a Marine Protected Area Center to carry out, in cooperation with the Department of the Interior, the requirements of subsection 4(a) of this order, coordinate the website established pursuant to subsection 4(d) of this order, and partner with governmental and nongovernmental entities to conduct necessary research, analysis, and exploration. The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system. This national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

(f) To better protect beaches, coasts, and the marine environment from pollution, the Environmental Protection Agency (EPA), relying upon existing Clean Water Act authorities, shall expeditiously propose new science-based regulations, as necessary, to ensure appropriate levels of protection for the marine environment. Such regulations may include the identification of areas that warrant additional pollution protections and the enhancement of marine water quality standards. The EPA shall consult with the Federal agencies identified in subsection 4(a) of this order, States, territories, tribes, and the public in the development of such new regulations.

**Section 5. Agency Responsibilities.** Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

**Section 6. Accountability.** Each Federal agency that is required to take actions under this order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to such comments by the agency.

**Section 7. International Law.** Federal agencies taking actions pursuant to this Executive Order must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America, Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America, and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.

**Section 8. General.** (a) Nothing in this Order shall be construed as altering existing authorities regarding the establishment of Federal MPAs in areas of the marine environment subject to the jurisdiction and control of States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and Indian Tribes.

(b) This Order does not diminish, affect, or abrogate Indian treaty rights of United States trust responsibilities to Indian tribes.

(c) This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.

William J. Clinton  
The White House  
May 26, 2000

## **APPENDIX 3**

### **Potential Benefits of Marine Reserves**

Marine Reserves offer many potential benefits, which include; protecting ecosystem functions, improving recreational and educational opportunities, improving fishery yields, and increasing knowledge and understanding of marine systems.

#### **I. Protects Ecosystem Structure, Function, and Integrity**

- Protects physical structure of habitat;
- Protects ecological processes;
- Restores population structure of fisheries(size and age);
- Restores community composition (presence and abundance of plant and animal species);
- Protects biodiversity at all levels;
- Protects important species;
- Protects vulnerable species;
- Protects threshold effects;
- Protects food web and trophic structure;
- Reduces incidental damage; and
- Facilitates ecosystem recovery after major human or natural disturbances.

#### **II. Improves Support to Human/Economic Systems**

- Reduces fishing gear impacts;
- Maintains high quality feeding areas for fish and wildlife;
- Improves non-consumptive opportunities, especially recreation;
- Enhances and diversifies economic activities;
- Enhances and diversifies social activities;
- Enhances aesthetic and spiritual experiences;
- Improves wildlife opportunities;
- Provides opportunities for education;
- Increases sustainable employment opportunities;
- Creates public awareness about environment;
- Reduces the impacts from irresponsible development activities;
- Encourages holistic approach to natural resources management; and
- Stabilizes the local economy.

#### **III. Improves Fishery Yields**

- Protects spawning fish stocks;
- Increases spawning stock biomass;
- Provides undisturbed spawning conditions, habitats, sites;
- Increase egg and larval production;
- Enhances recruitment;

- Provides spill over of adults and juveniles to areas outside reserve;
- Reduces chances of recruitment overfishing;
- Reduces overfishing of vulnerable species;
- Protects diversity of fishing opportunities;
- Enhances recovery from stock collapses and management failures;
- Reduces bycatch fishing mortality
- Simplifies enforcement and compliance;
- Reduces conflicts among users;
- Maintains sport trophy fisheries;
- Reduces variance of yield;
- Allows increased fish outside reserves;
- Facilitates stakeholder involvement in management;
- Provides fishery management data to improve fisheries;
- Increases understanding and acceptance of fishery management;
- Reduces impacts of environmental variability; and
- Provides some protection with limited resources and without data or information.

#### **IV. Increases Knowledge and Understanding of Marine Systems**

- Provides long-term monitoring sites;
- Provides focus for study;
- Provides continuity of knowledge;
- Provides opportunity to restore or maintain natural behaviors;
- Reduces risks to long-term experiments;
- Provides experimental sites needing natural areas;
- Provides controlled natural areas for assessing anthropogenic impacts, including fishing and other impacts;
- Provides sites for enhanced primary and adult education; and
- Provides sites for high-level graduate education.

Sobel, J. 1996. "Marine Reserves: Necessary Tools for Biodiversity Conservation?", in *Global Biodiversity*. 1996: 8-18.

## APPENDIX 4

### IUCN Protected Areas Categories and Management Objectives

A protected area is defined as: “**An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means**” (IUCN 1994<sup>1</sup>).

The above definition does not mean that no use will be permitted within protected areas. In fact, the most wide spread use of protected areas is for recreation.

The current IUCN WCPA categories (IUCN 1994) are as follows:

1. Strict protection
  - a. Strict Nature Reserve
  - b. Wilderness Area
  
11. Ecosystem conservation and recreation (National Park)
  
111. Conservation of natural features (Natural Monument)
  
- IV. Conservation through active management (Habitat/Species Management Area)
  
- V. Landscape/seascape conservation and recreation (Protected Landscape/ seascape)
  
- VI. Sustainable use of natural ecosystems (Managed Resource Protected Area)

The mix of management objectives relevant to each of the categories is summarised in the following table (IUCN 1994, p.8):

<b>Management Objective</b>	<b>Ia</b>	<b>Ib</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>
Scientific research	1	3	2	2	2	2	3
Wilderness protection	2	1	2	3	3	-	2
Preservation of species and genetic diversity	1	2	1	1	1	2	1
Maintenance of environmental services	2	1	1	-	1	2	1
Protection of specific natural/cultural features	-	-	2	1	3	1	3
Tourism and recreation	-	2	1	1	3	1	3
Education	-	-	2	2	2	2	3
Sustainable use of resources from natural ecosystems	-	3	3	-	2	2	1
Maintenance of cultural/traditional attributes	-	-	-	-	-	1	2

Key: I: Primary objective; 2: Secondary objective; 3: Potentially applicable objective;  
 - Not applicable

The definitions, objectives, and selection criteria for the categories and sub-categories are summarised as follows (IUCN 1994, p.17):

**Category I - Strict Nature Reserve/Wilderness Area: protected area managed mainly for science or wilderness protection**

**Category Ia - Strict Nature Reserve: protected area managed mainly for science**

*Definition:* Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring

*Objectives of management:*

- ◆ To preserve habitats, ecosystems and species in as undisturbed a state as possible;
- ◆ To maintain genetic resources in a dynamic and evolutionary state;
- ◆ to maintain established ecological processes;
- ◆ To safeguard structural landscape features or rock exposures;
- ◆ To secure examples of the natural environment for scientific studies, environmental monitoring and education, including baseline areas from which all avoidable access is excluded;
- ◆ To minimise disturbance by careful planning and execution of research and other approved activities;
- ◆ To limit public access.

*Guidance for selection:*

- ◆ The area should be large enough to ensure the integrity of its ecosystems and to accomplish the management objectives for which it is protected.
- ◆ The area should be significantly free of direct human intervention and capable of remaining so.
- ◆ The conservation of the area's biodiversity should be achievable through protection and not require substantial active management or habitat manipulation (c.f. Category IV).

*Equivalent category in IUCN (1978):* Scientific Reserve/Strict Nature Reserve.

**Category Ib - Wilderness Area: protected area managed mainly for wilderness protection**

*Definition:* Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

*Objectives of management:*

- ◆ To ensure that future generations have the opportunity to experience understanding and enjoyment of areas that have been largely undisturbed by human action over a long period of time;
- ◆ To maintain the essential natural attributes and qualities of the environment over the long term;
- ◆ To provide for public access at levels and of a type which will serve best the physical and spiritual well-being of visitors and maintain the wilderness qualities of the area for present and future generations;
- ◆ To enable indigenous human communities living at low density and in balance with the available resources to maintain their lifestyle.

*Guidance for selection:*

- ◆ The area should possess high natural quality, be governed primarily by the forces of nature, with human disturbance substantially absent, and be likely to continue to display those attributes if managed as proposed.
- ◆ The area should contain significant ecological, geological, physiogeographic, or other features of scientific, educational, scenic or historic value.
- ◆ The area should offer outstanding opportunities for solitude, enjoyed once the area has been reached, by simple, quiet, non-polluting and non-intrusive means of travel (i.e. non-motorised).
- ◆ The area should be of sufficient size to make practical such preservation and use.

*Equivalent category in IUCN (1978):* no direct equivalent.

**Category 11 - National Park: protected area managed mainly for ecosystem protection and tourism**

*Definition:* Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

*Objectives of management:*

- ◆ To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational or tourist purposes;
- ◆ To perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources, and species, to provide ecological stability and diversity;
- ◆ To manage visitor use for inspirational, educational, cultural and recreational purposes at a level which will maintain the area in a natural or near natural state;
- ◆ To eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation;
- ◆ To maintain respect for the ecological, geomorphologic, sacred or aesthetic attributes which warranted designation;
- ◆ To take into account the needs of indigenous people, including subsistence resource use, in so far as these will not adversely affect the other objectives of management.

*Guidance for selection:*

- ◆ The area should contain a representative sample of major natural regions, features or scenery, where plant and animal species, habitats and geomorphological sites are of special spiritual, scientific, educational, recreational and tourist significance.
- ◆ The area should be large enough to contain one or more entire ecosystems not materially altered by current human occupation or exploitation.

*Equivalent category in IUCN (1978):* National Park

**Category III -Natural Monument: protected area managed mainly for conservation of specific natural features**

*Definition:* Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

*Objectives of management:*

- ◆ To protect or preserve in perpetuity specific outstanding natural features because of their natural significance, unique or representational quality, and/or spiritual connotations;
- ◆ To an extent consistent with the foregoing objective, to provide opportunities for research, education, interpretation and public appreciation;
- ◆ To eliminate and thereafter prevent exploitation or occupation inimical to the purpose of designation;
- ◆ To deliver to any resident population such benefits as are consistent with the other objectives of management

*Guidance for selection:*

- ◆ The area should contain one or more features of outstanding significance (appropriate natural features include spectacular waterfalls, caves, craters, fossil beds, sand dunes and marine features, along with unique or representative fauna and flora; associated cultural features might include cave dwellings, cliff-top forts, archaeological sites, or natural sites which have heritage significance to indigenous peoples).
- ◆ The area should be large enough to protect the integrity of the feature and its immediately related surroundings.

*Equivalent category in IUCN (1978):* Natural Monument / Natural Landmark

**Category IV -Habitat/Species Management Area: protected area managed mainly for conservation through management intervention**

*Definition:* Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

*Objectives of management:*

- ◆ To secure and maintain the habitat conditions necessary to protect significant species, groups of species, biotic communities or physical features of the environment where these require specific human manipulation for optimum management;
- ◆ To facilitate scientific research and environmental monitoring as primary activities associated with sustainable resource management;
- ◆ To develop limited areas for public education and appreciation of the characteristics of the habitats concerned and of the work of wildlife management;
- ◆ To eliminate and thereafter prevent exploitation or occupation inimical to the purpose of designation;
- ◆ To deliver such benefits to people living within the designated area as are consistent with the other objectives of management.

*Guidance for selection:*

- ◆ The area should play an important role in the protection of nature and the survival of species (incorporating, as appropriate, breeding areas, wetlands, coral reefs, estuaries, grasslands, forests or spawning areas, including marine feeding beds).
- ◆ The area should be one where the protection of the habitat is essential to the well-being of nationally or locally-important flora, or to resident or migratory fauna.
- ◆ Conservation of these habitats and species should depend upon active intervention by the management authority, if necessary through habitat manipulation (c.f. Category Ia).
- ◆ The size of the area should depend on the habitat requirements of the species to be protected and may range from relatively small to very extensive.

*Equivalent category in IUCN (1978):* Nature Conservation Reserve/Managed Nature Reserve/Wildlife Sanctuary.

**Category V - Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation**

*Definition:* Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinctive character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

*Objectives of management:*

- ◆ To maintain the harmonious interaction of nature and culture through the protection of landscape and/or seascape and the continuation of traditional land uses, building practices and social and cultural manifestations;
- ◆ To support lifestyles and economic activities which are in harmony with nature and the preservation of the social and cultural fabric of the communities concerned;
- ◆ To maintain the diversity of landscape and habitat, and of associated species and ecosystems;
- ◆ To eliminate where necessary, and thereafter prevent, land uses and activities which are inappropriate in scale and/or character;
- ◆ To provide opportunities for public enjoyment through recreation and tourism appropriate in type and scale to the essential qualities of the areas;
- ◆ To encourage scientific and educational activities which will contribute to the long term well-being of resident populations and to the development of public support for the environmental protection of such areas;
- ◆ To bring benefits to, and to contribute to the welfare of, the local community through the provision of natural products (such as forest and fisheries products) and services (such as clean water or income derived from sustainable forms of tourism).

*Guidance for selection:*

- ◆ The area should possess a landscape and/or coastal and island seascape of high scenic quality, with diverse associated habitats, flora and fauna along with manifestations of unique or traditional land-use patterns and social organisations as evidenced in human settlements and local customs, livelihoods, and beliefs.
- ◆ The area should provide opportunities for public enjoyment through recreation and tourism within its normal lifestyle and economic activities.

*Equivalent category in IUCN (1978):* Protected Landscape.

**Category VI - Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems**

*Definition:* Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs. The area must also fit the overall definition of a protected area.

*Objectives of management:*

- ◆ To protect and maintain the biological diversity and other natural values of the area in the long term;
- ◆ To promote sound management practices for sustainable production purposes;
- ◆ To protect the natural resource base from being alienated for other land use purposes that would be detrimental to the area's biological diversity;
- ◆ To contribute to regional and national development.

*Guidance for selection:*

- ◆ At least two-thirds of the area should be in, and is planned to remain in, a natural condition, although it may also contain limited areas of modified ecosystems; large commercial plantations are not to be included.
- ◆ The area should be large enough to absorb sustainable resource uses without detriment to its overall long-term natural values.
- ◆ A management authority must be in place.

*Equivalent category in IUCN (1978):* no direct equivalent.

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<sup>i</sup> IUCN: 1994. Guidelines for Protected Area Management Categories. IUCN- The World Conservation Union, Gland.