

Towle Excerpts from USVI Marine Parks Resource Description

August 2002

CHAPTER 2: HISTORY OF MARINE PROTECTION EFFORTS IN THE USVI

2.0 Historical Background

For the USVI, the second half of the twentieth century was witness to a steady growth of mostly failed but increasingly more focused, occasionally collaborative and certainly professional landscape, seascape and ecosystem conservation planning and management efforts. These sprang up principally in response to the socio-economic development process that affects all small islands and their natural resource systems.

As in other areas of the insular Caribbean over the same period, protected area initiatives in the USVI were triggered more by escalating, public-spirited *conservation philanthropy* than from any visible change in local public policy or commitment of public funds for protecting the “commons”—whether wet or dry, natural or physical, terrestrial or marine.

Local conservation leadership has been a lonely and generally unrewarding task during much of the five decades since 1950. Virtually every high-priority area currently identified for immediate action carried a similar ranking in similar environmental surveys *for the past thirty to forty years*.¹ While the studies have continued,

- buffer zones have shriveled,
- pristine sites and critical habitat for threatened species have been lost,

¹ In Section 2.1, below, each of these wide ranging environmental assessments is labeled as “[Survey #1],” “[Survey #2],” etc.

- biodiversity has been reduced,
- invasive species have prospered, and
- land acquisition costs have risen geometrically.

Certainly the task of protecting the unique natural resources of the Virgin Islands is much harder now than when initially proposed.

In retrospect, there have been a number of encouraging starts, often launched or sponsored by Federal officials—especially from the Department of the Interior—who sought to jump-start a Virgin Islands Territorial Park System. In almost every case, local leadership and local institutions have not been engaged in the process and have not followed through. Plan after plan has fallen victim to legislative disinterest and a lack of vision about the multiple advantages of environmental conservation. Since World War Two, the USVI has been living out its own special development success story that has often obscured its parallel “tragedy of the commons.”

Nevertheless, acknowledging that even failed attempts can be instructive, what can we learn from this half-century of experience? The following chronology and narrative are designed to help answer that question.

2.1 Summary: Chronology of USVI Protected Area Initiatives

[The details of this chronology are found in Appendix C. This summary concentrates on the ten previous surveys in the Virgin Islands, which have addressed Virgin-Islands-wide marine protection issues.]

1960: [*Survey #1*]. In late 1959, at the suggestion of Laurance S. Rockefeller, the Department of the Interior joined forces with Virgin Islands Governor John D. Merwin and the St. Thomas and St. Croix Chambers of Commerce to sponsor a survey of recreational needs, sites and services in the USVI. Such sites were seen as possible St. Thomas and St. Croix supplements to the new National Park on St. John, then being assembled through a land acquisition program.

The needs survey was carried out by a licensed landscape architect, Kenneth B. Simmons, on contract to the National Park Service, following the protocol of the Congressionally authorized “Recreational Area Study Act” of 1936 [49 Stat. 1894]. This study was done specifically to encourage the Territorial Government to develop a territorial park system (similar to state park systems in the continental United States). In retrospect, this 1960 Department of the Interior inventory was remarkable in its foresight, scope and ranking priorities. For example, four of the St. Croix sites that were highlighted some forty years ago—East End, Great Pond, Cramer Park and Salt River—have been consistently

featured on virtually all subsequent survey efforts and have precedence to this day.

- 1968:** [*Survey #2*] Under sponsorship of the U.S. Department of the Interior, the Department of Landscape Architecture at the University of Massachusetts carried out a study of selected resources in the U. S. Virgin Islands and their relationship to recreation, tourism and open space. A subsequent report, entitled *The Islands*, was prepared by Dr. Irvin Zube. It included an extraordinarily detailed set of eleven maps and excellent reviews of shoreline zones, corals, offshore cays and resource concentrations. This report was not widely circulated as it openly favored the Jersey Bay/Mangrove Lagoon site on St. Thomas as a protected area, exactly where (at the time) the Virgin Islands Government proposed to construct a new airport.
- 1970:** [*Survey #3*] In July, the Department of the Interior sent a senior marine specialist, William Beller, to the Virgin Islands to head a citizens-based study team charged with looking at the Territory's marine resources from a development and conservation perspective. After 100 volunteer "specialists" were recruited and dozens of public meetings held over a 90-day period, this *ad hoc* group produced a 170-page report filled with practical recommendations on "*The Virgin Islands and the Sea*".
- 1973** [*Survey #4*] A three-island conservation inventory was undertaken by the Virgin Islands (federally funded) Soil Conservation Service. A professionally assembled report was published including a new inventory of public recreation sites (actual and proposed) with maps. An agenda for maintaining coastal water quality was included. The recreational sites were picked up under the State Comprehensive Outdoor Recreation Plan (SCORP), published every 5 years since.
- 1975** [*Survey #5*].The National Park Service commissioned a team from the West Indies Lab of Fairleigh Dickinson University, led by John Adams and John Ogden to highlight high priority conservation sites, including marine, offshore cays, and other landscape factors for conservation: *Potential National Natural Landmarks: US Virgin Islands*. Priority sites included several coastal and marine areas. [Adams, 1975]
- 1976** [*Survey #6*].Viridin Brown, was appointed Commissioner of Conservation under the new administration of Cyril E. King. Commissioner Brown, assisted by two of his assistants—Bob Mathes, who headed Planning and Development, and Tim Still, a park planner—prepared and circulated a work plan for implementing the long-awaited Territorial Park System.
- 1977:** [*Survey #7*] The first draft of the U.S. Virgin Islands Coastal Zone Management Program was developed under sponsorship of the U.S. Coastal Zone Management Act of 1972. The process of assessing Areas of Particular Concern (APCs) and Significant Natural Areas (SNAs), each of which required site studies and ranking, began at this time. The Virgin Islands Department of Conservation and

Cultural Affairs (DCCA) developed a list and map of SNAs, and the Planning Office prepared a selected list of APCs.

1977 [*Survey #8*] Under contract with the Virgin Islands Planning Office, Island Resources Foundation assembled a study team of scientists, geographers and planners with the aim of developing a planner's handbook characterizing the component parts and functional elements of the Virgin Islands insular ecosystem (marine, terrestrial and benthic). This document, which was entitled *Marine Environments of the Virgin Islands: Technical Supplement # 1* [Towle, 1977] and published in 1977, included an inventory of natural resources, an analysis of biophysical relationships, coastal zone planning guidelines and scoping information for resource management, including APC and SNA coverage and ranking.

1978–79 [*Survey #9*] During this period a team of lawyers from Chelsea International in Washington, DC was employed by the Office of the Secretary of the U.S. Department of Commerce under the framework of the Marine Protection, Research and Sanctuaries Program. The team was charged with conducting a survey of four possible Marine Sanctuary sites in the Virgin Islands and identifying a preferred site to develop under the aegis of an emerging Virgin Islands Territorial Park System. A public hearing was held on the preferred site in 1978 while DCCA was reformulating the marine component of its stalled territorial park plan. Other sites on St. Thomas were later surveyed, and DCCA developed a Marine Sanctuary Advisory Board to help with site selection and planning.

1990 [*Survey #10*] Three-and-a-half months after Hurricane Hugo, the Department of Planning and Natural Resources (DPNR) requested funding from the National Oceanic and Atmospheric Administration (NOAA) to undertake a field-level coastal damage assessment of the Territory. In June of 1990 the Government of the Virgin Islands entered into a professional services contract with Island Resources Foundation to manage an interdisciplinary post-Hugo Damage Assessment and Environmental Recovery Planning Strategy. An additional task was included in the project, somewhat afield from hurricane disaster recovery—namely, “to manage a Feasibility Study for Development of a Virgin Island Territorial Park System”.

The exercise was launched with a community-based open charette, led by Governor Alexander Farrelly and Onaje Jackson from DPNR. By this method, 35 reportedly damaged sites were nominated and ranked. An open voting arrangement was employed, using the Delphi strategy for ranking. The broad listing (which excluded Federal property and sites) included 11 Areas of Particular Concern sites, 26 Significant Natural Area sites, and 17 Coastal Barrier sites.

Project activity was carried out by several interdisciplinary teams who generated a flow of up-to-date damage assessments, vegetation and risk mapping, intervention

options, remedial action plans, and triage-like data sorting, all leading to site profiles and a detailed 35-site data base.

A comprehensive nine-page matrix was designed and populated, including aerial, underwater and land-based photography, documentation, and water quality station index numbers. Damages were mapped with key word indexing and narrative summaries. The matrix also tracked the source and dates of prior site nominations for protected area status by type and ranking. The final reporting incorporated surveys of available and/or desirable adjacent land, mapped by parcel and showing parcel numbers and appraised costs for park acquisition.

2.2 Marine Protected Areas in the US Virgin Islands

As illustrated in the maps included as Attachments 1 and 2 in Appendix E , there are a variety of marine protected areas already in existence throughout the US Virgin Islands. These areas are briefly summarized below....

Buck Island Reef National Monument

Often lumped together in conventional discussion with the St. John VI National Park, the Buck Island Reef National Monument is both administratively distinct, and separately authorized. This small park comprises 175 acres (71 hectares) on Buck Island and 699.3 acres (285 hectares or about 1.1 square mile) of seabed adjacent to and surrounding (in an irregular ellipsoid) Buck Island off the north coast of St. Croix. The monument was proclaimed on December 28, 1961. It has a shoreline of four kilometers. The Government of the Virgin Islands has concurrent jurisdiction over the waters of the Monument, but Federal rights are “proprietary” over the land area.

By virtue of systematic monitoring by the National Park Service and the Biological Resources Division of the US Geological Service, NOAA, and detailed studies by graduate students and the West Indies Lab of Fairleigh Dickinson University, this area is one of the most intensively monitored and studied reef systems in the Caribbean.

St. John: VI National Park

The marine component of the VI National Park on St. John was added to the 3550 hectares of the original park in 1962. The marine component of the VI National Park includes approximately 2287 hectares [less than 9 square miles], all within the VI Territorial Sea at the time of designation. Most of the original marine areas of the Park are located north and south of the island of St. John.

It is notable that after 40 years of National Park management of a substantial portion of the sea areas around St. John it appears that local fish stocks on some of the major reefs

have declined and *are continuing to decline*. [Beets and Rogers, in press] Park waters have not, until now, been maintained as no-take zones, but there has been an attempt to limit fishing to traditional users with traditional gear. Apparently these limitations have not been sufficiently rigorous to prevent continued over-fishing.

St. Croix: Salt River Bay National Historic Park and Ecological Preserve

This is a 948 acre (384 hectares or approximately 1.5 square miles) federal park and reserve established in February, 1992. The federal property is adjacent to and managed jointly with a similar-sized territorial protected area. The area of the joint protected area includes the Salt River Estuary and coastal waters of the USVI. A management plan has been drafted.

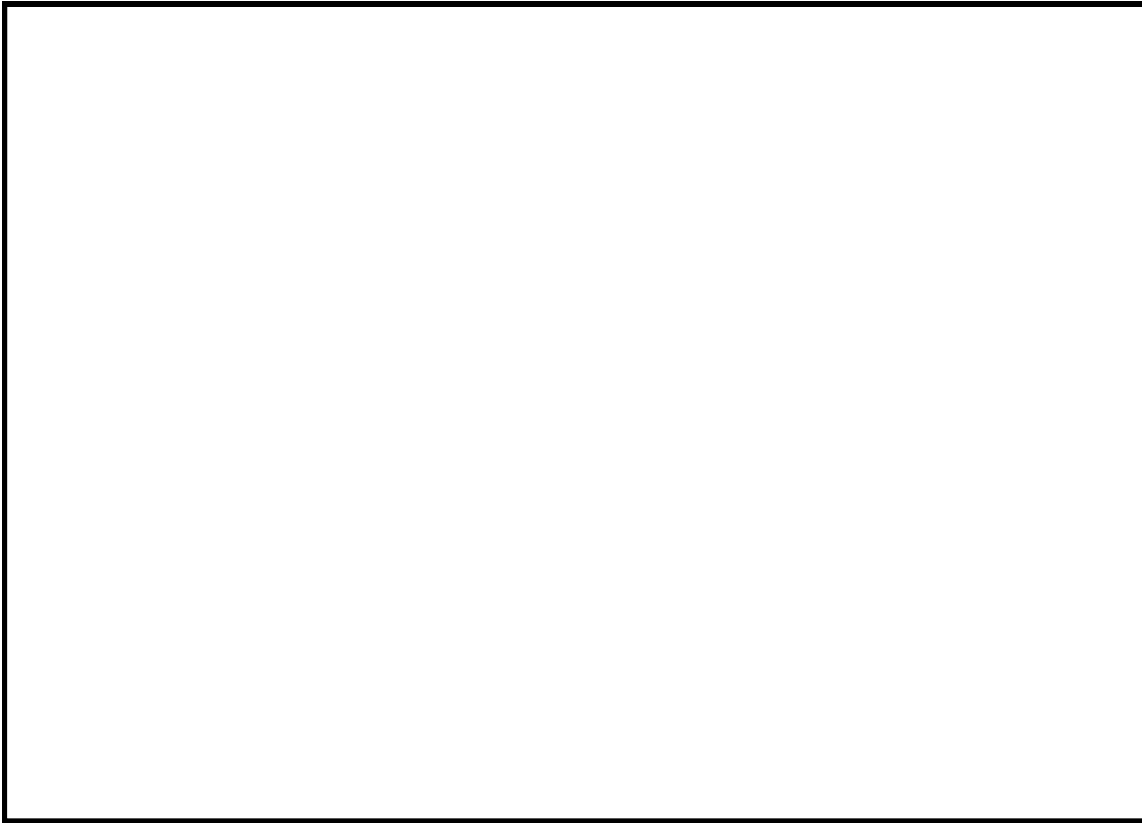
These areas are shown as areas “K” and “L” in Figure 3, below.

Southeast St. Thomas Marine Reserves and Wildlife Sanctuaries

In 1993 the Virgin Islands Legislature established a complex of four Territorial Marine Reserves and Wildlife Sanctuaries in the Mangrove Lagoon/Jersey Bay area.

These four areas are identified in the sketch chart distributed by the DPNR Division of Fish and Wildlife, as displayed below in Figure 1.

FIGURE 1: SOUTHEAST ST. THOMAS MARINE RESERVES AND WILDLIFE SANCTUARIES



Fisheries Reserve Areas

There are three areas in the USVI where the Caribbean Fishery Management Council [CFMC, 1999] has closed fishing for part of the year because of seasonal fish spawning activity. The red hind closure south of St. Thomas is closed permanently year round whereas the red hind and mutton spawning sites around St. Croix are closed permanently on a seasonal basis [Dr. Richard Nemeth, personal communication, 22 July 2002]. As indicated below, only one of these, the St. Croix Mutton Snapper Spawning Aggregation Area, is within the Territorial Sea, but all three areas should influence MPA selection, based on the knowledge of these spawning areas.

Red Hind. The Red Hind Spawning Aggregation Area is labeled as area “G” on the MPA map of St. Croix in Appendix E-3, which is excerpted in Figure 2, below. [Note that this map also shows the disputed extended area of the Buck Island Reef National Monument as area “N.”]

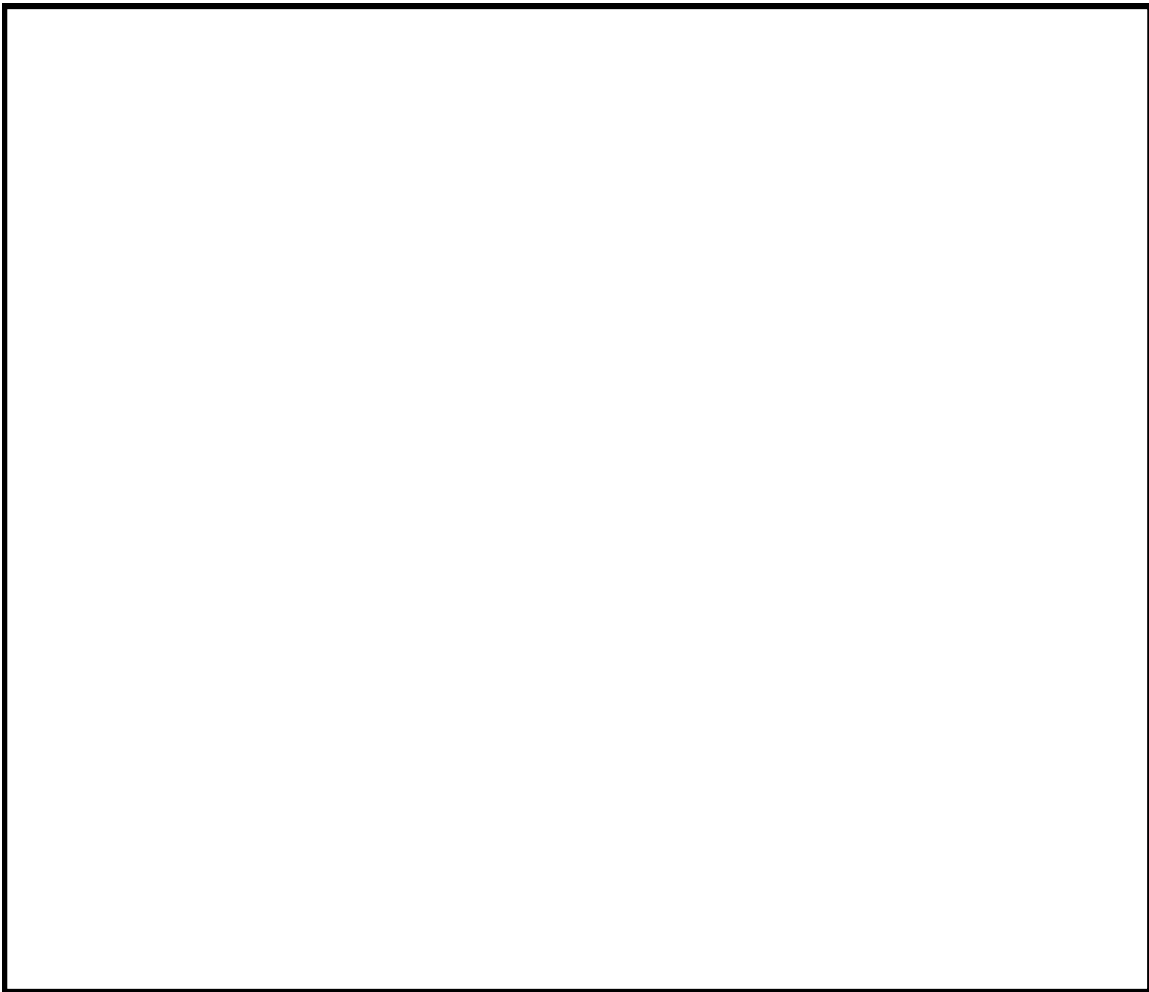
The Division of Fish and Wildlife describes the Red Hind Spawning Aggregation Area in the following fashion:

Red Hind Closure, St. Croix, U.S.V. I.

The Red Hind Spawning area is closed December 1 – February 28, as stated in the Final Regulations of Amendment One of the Caribbean Fishery Management Council Shallow Water reef fishery management plan. . . . Anyone caught fishing in this area will be considered in violation of the closed area and may be given a Federal fine up to \$100,000 and one year in jail.

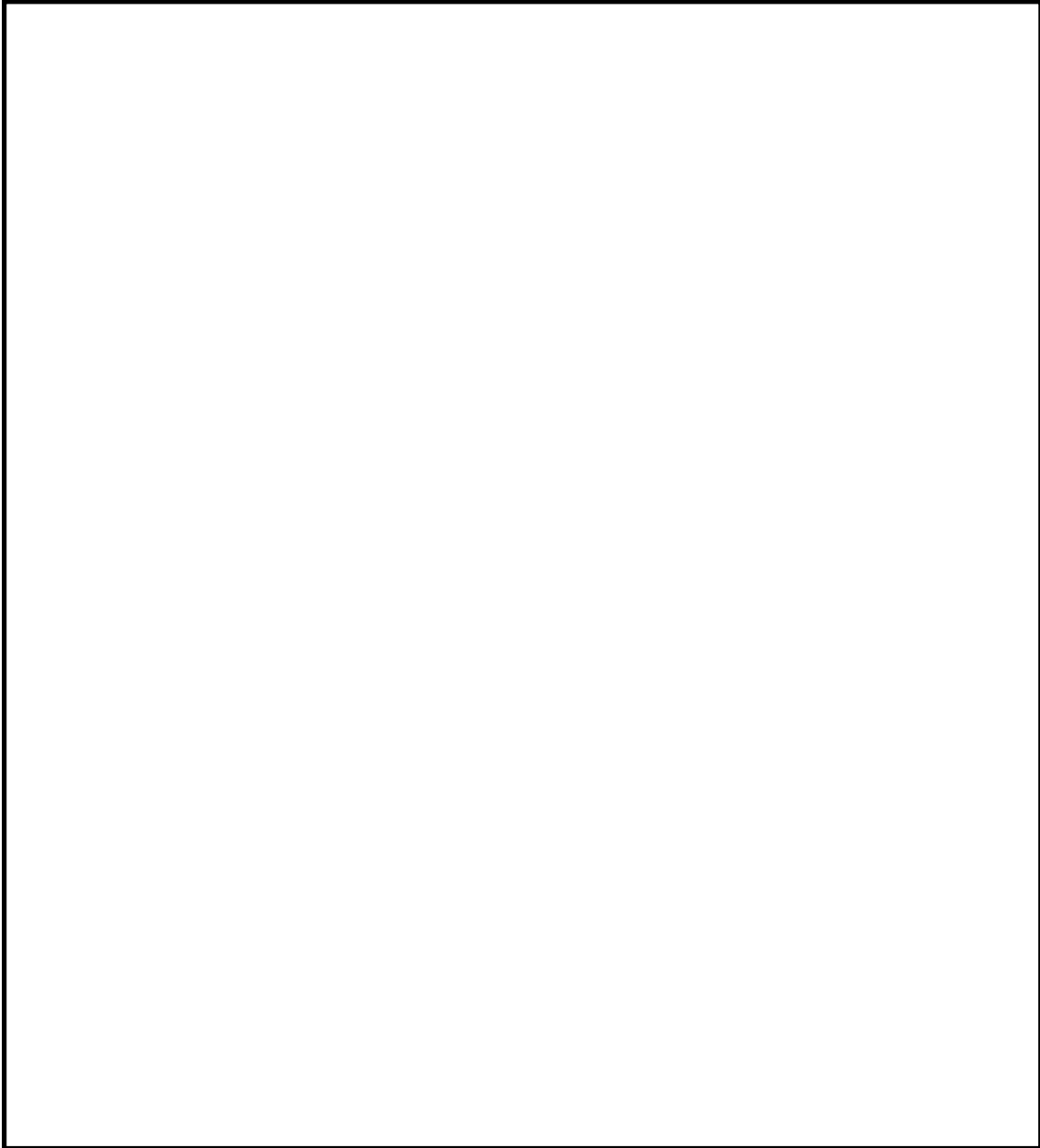
Mutton Snapper. The Mutton Snapper Closure area is shown as area “C” on the MPA map of St. Croix in Appendix E-3, and is shown in the excerpt below.

FIGURE 2: RED HIND CLOSURE AREA, ST. CROIX



Mutton Snapper. The Mutton Snapper Closure area is shown as area “C” on the MPA map of St. Croix in Appendix E-3, and is shown in the excerpt in Figure 3 below.

FIGURE 3: MUTTON SNAPPER CLOSURE AREA, ST. CROIX



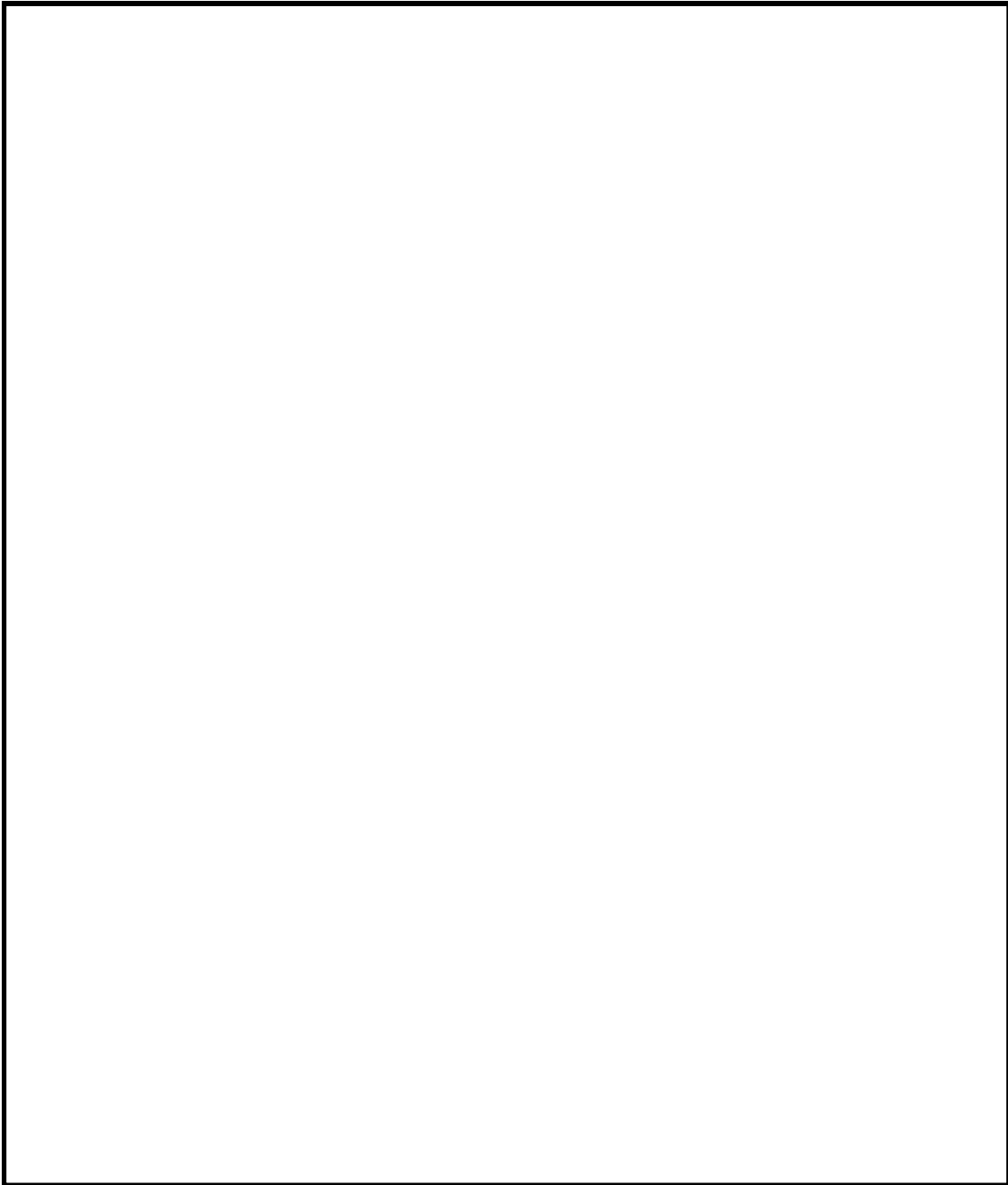
As indicated by this map excerpt, the St. Croix Mutton Snapper Fish Aggregation area is the only one of the three CFMC spawning reserves which is within the Territorial Sea.

Red Hind Bank Marine Conservation Area. This is identified as area “I” on the MPA map of St. Thomas in Appendix E-4. As indicated by the map excerpt below, this area is outside of the Territorial Sea, but decisions about MPA status for nearby areas of the

Territorial Sea should be influenced by the knowledge that this is an important spawning area.

Closed since 1989, on suggestion of CFMC, the closed season extends from December to March.

FIGURE 4: RED HIND BANK MARINE CONSERVATION AREA, ST. THOMAS.



18 Areas of Particular Concern

The Areas of Particular Concern were approved by the Legislature of the US Virgin Islands in 1993. The list of the approved APC sites include:

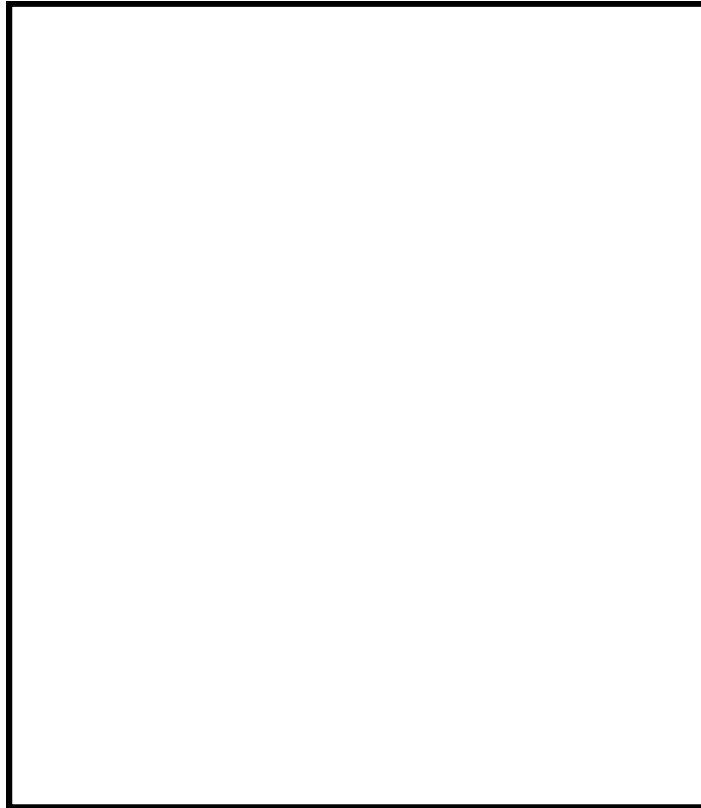
- Botany Bay, St. Thomas, VI
- Chocolate Hole/Great Cruz Bay , St. John, VI
- Christiansted Waterfront, St. Croix, VI
- Coral Bay, St. John, VI
- Cruz Bay/Enighed Pond, St. John, VI
- East End, St.Croix, VI
- Fredericksted Waterfront, St.Croix, VI
- Great Pond Bay, St.Croix, VI
- Mangrove Lagoon/Benner Bay, St. Thomas, VI
- Magens Bay and Watershed, , St. Thomas, VI
- Mandahl Bay Lagoon Restoration Area, , St. Thomas, VI
- Salt River Bay, St.Croix, VI
- Sandy Point, St.Croix, VI
- Southgate Pond/Chenay Bay, St.Croix, VI
- Southshore Industrial Area, St.Croix, VI
- St. Croix Reef System Reserve, St.Croix, VI
- St. Thomas Harbor and Waterfront, , St. Thomas, VI
- Vessup Bay/Red Hook Area, , St. Thomas, VI

Note that not all of the 18 APCs were nominated because of the quality of their natural resources—to the contrary, areas such as St. Thomas Harbor and Christiansted Harbor are APCs because of the need to mitigate or remedy damages already inflicted on the natural environment of these areas.

New Coral Reef and Marine National Monument Designations

Both the Buck Island national monument expansion and the St. John Monument designations were made in an end-of-administration gesture by the Clinton Administration in November, 2001. Both designations have been protested by the Government of the US Virgin Islands. The Expansion of the Buck Island Reef National Monument is shown in Appendix E-3, and in Figure 2, above.

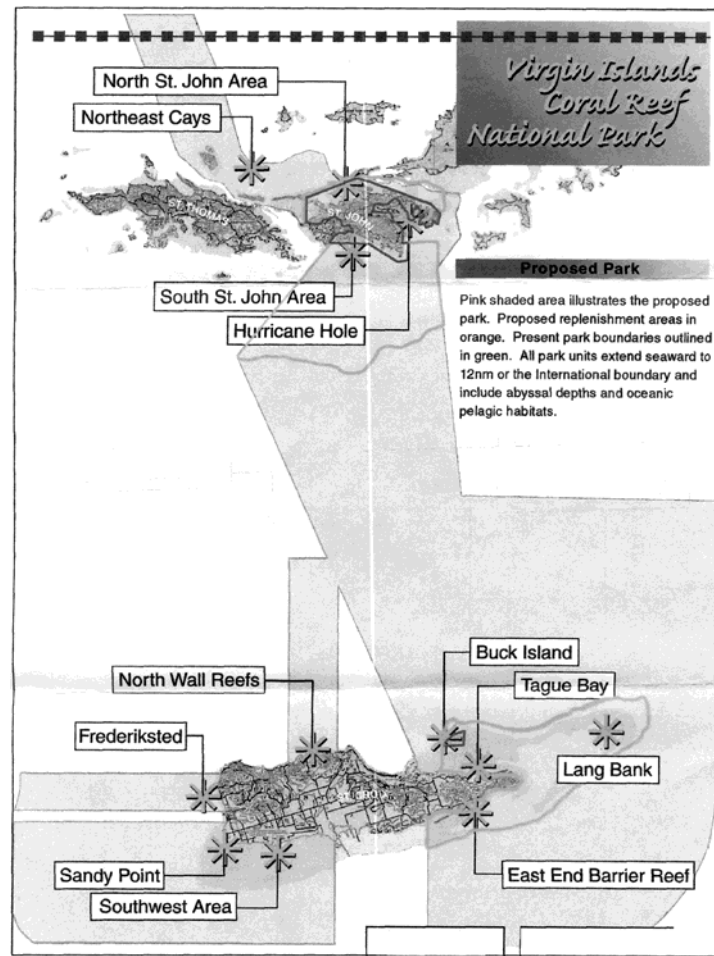
FIGURE 5: BOUNDARIES OF ST. JOHN CORAL REEF NATIONAL MONUMENT.



[From a National Park Service Press Release, November 2001]

Fueled in large part by the apparent continued decline of the fish populations in the protected waters of St. John and adjacent waters to Buck Island in St. Croix, these new monument areas are designed to provide substantially increased areas under protection. The actual designations of the two expansions to the national monuments are smaller than a much larger sea area proposed in late 1999, as the Virgin Islands Coral Reef National Park:

FIGURE 6: PROPOSED BOUNDARIES VI CORAL REEF NATIONAL PARK.



[from Garrison, 1999]

2.3 Marine Management Policy Implications of Historical Initiatives

As demonstrated in the chronology above, the concept of a Virgin Islands territorial system of parks and protected areas is not a new one. On the other hand, there is no evidence that a territorial park system has been a popular notion amongst the resident citizenry. Perhaps this arises as a cultural residual from the colonial system of estate land ownership where historically very little land was in public hands. This made it more difficult to convert unique natural landscape features and wildlife habitat into protected areas of one kind or another. Furthermore, most land is privately owned, and many land-owning Virgin Islanders (including traditional resource users with presumed proprietary rights) are uniformly skeptical about any proposed constraint on private development that might diminish appreciating land values or restrict free access.

Other residents, especially on the larger islands of St. Thomas and St. Croix, have in recent decades remained passively neutral, while a minority of local citizens have become outspoken about their concern over the cumulative impacts of accelerating development on the environment. For this latter group, in the best tradition of sound land-use planning, the continuing need to select, set aside and protect the very best from among special natural or scenic areas and historic sites seems obvious. Of particular concern have been those coastal areas with unique or remarkable aesthetic, educational and recreational value.

Over the past forty years, there have been at least ten serious attempts in the Territory to identify, list, publicize and gain public approval for setting aside “valuable,” ecologically important or otherwise remarkable landscape and seascape and even submerged land features as high priority candidates for inclusion in a territorial system of parks, recreational areas or reserves of one kind or another. Most have more or less failed to get much beyond the listing state. The few exceptions are described in the preceding section.

Part of the problem arises from the real or perceived anti-development stance taken by many advocates of protected areas. Their concerns about the adverse impacts of rapid growth and their hostility towards many hastily designed and environmentally risky development projects have been seen as unrealistic. Anti-development environmentalism has often been perceived as obstructionist, elitist and insensitive to the real interests of Virgin Islanders, landowners, and the needs of the poor and marginalized in the community. Working people with memories of unemployment or underemployment, often accompanied by genuine difficult livelihoods, are not likely to embrace the arguments of those who appear to favor no growth or who might impose a host of new regulations closing off traditional access to *de facto* “common property” resources.

It is noteworthy that the first two protected areas of significance in the Virgin Islands were conceived and created by wealthy outsiders who first purchased the properties in question and then donated them to government (both federal and territorial). They were, first, Arthur Fairchild’s gift of Magens Bay in 1947 and, a decade later, Laurance Rockefeller’s gift of the land that created the Virgin Islands National Park in 1956. Both areas were to include marine features.

But, in retrospect, it should be noted that these philanthropic precedents, especially that of Laurance Rockefeller’s purchase of over half the land area of St. John in the early 1950s, actually had an unanticipated negative effect within the Territory. The size of the area and the scale of the gift provided an excuse to those in and out of government who thereafter saw little need for setting aside any additional “park” land. Worse still, Rockefeller’s windfall generosity gave false encouragement to those who were hesitant about investing public funds in land protection schemes, preferring to wait for other private sector, philanthropic donors to appear, checkbook in hand.

Over the years a few donors did, in fact, come along to donate land to the Virgin Islands Government that was to be maintained as open space or used for the public good. The community is indebted to Fairleigh Dickensen for the large parcel north of Isaac Bay on St. Croix’s East End and to David Vialet for his gift of Cass Cay at the False Entrance to

the St. Thomas Mangrove Lagoon. There were a few others like Henry Reichold, who twice gave land for educational use, and Warren Corning at Botany Bay, who cared about sea bird nesting sites. On St. Thomas, the Paiewonsky family donated most of Hassel Island for inclusion in the Virgin Islands National Park.

But such special-purpose, private-sector gifts have only emerged on a very *ad hoc* basis and mostly in bits and pieces. They seldom addressed what was comprehensively needed for the protection of unique natural systems or the provision of adequate recreational space. Finally, some observers have noted that there might have been many more donations if the Virgin Islands Government had put even the semblance of a formal park management system in place.

APPENDIX C: CHRONOLOGY OF PREVIOUS MPA EFFORTS

1930: The U.S. Forest Service, after a survey of surviving forest areas in the US Virgin Islands noted “. . . in St. John there is a real opportunity for the establishment of a National Forest . . . [where] the steep slopes and the wind swept ridges should be kept perpetually in forest.” Ten thousand acres at \$5.00/acre was the budgetary target. [Kramer, 1930] This is almost the identical size of the park created by the eventual Rockefeller gift in 1956.

Although not related to marine issues, this is the first evidence of site-specific concern for environmental conservation in the US Virgin Islands. This also begins the too-typical pattern of outsider enthusiasm for land or marine conservation in the Virgin Islands without evidence of local input, understanding or support.

1939: A visiting U.S. National Park Service team inspected and recommended that the island of St. John be developed as a new national park. This was only a preliminary screening that was followed by no action and ultimately stalled by the Second World War.

1943: Arthur Fairchild offered to give to the Virgin Islands people a 58.2 acre [23.6 hectares] park at Magens Bay on the north side of St. Thomas where he resided and had built an arboretum. He provided, in advance, a plan for a Park Management Authority. Government delays and paper work slowed the donation process, and the Deed of Conveyance was not completed until April 22, 1947. But the park still exists today, as a monument to his generosity, forward thinking, and insistence on an independent statutory authority with a separate board and management.

1952: Conservation philanthropist Laurance S. Rockefeller visited Caneel Bay and St. John on his yacht *Dauntless* as part of a larger Eastern Caribbean survey. The idea of combining a sugar plantation restoration/hotel within a park-like setting was of interest to him, and he returned to the island later to buy 600 acres at Caneel from the Textron Corporation and to build a resort at Caneel Bay.

Meanwhile, through intermediaries, Mr. Rockefeller had been acquiring acreage adjacent to the Caneel Bay Resort for an eventual donation to the US National Park Service.

The end result was creation of a small coastal “park” that featured coastal forests, historic buildings, a hotel, hiking trails, and eventually coral reefs and underwater trails. Meticulous attention was paid to landscaping, natural resource husbandry, and horticultural amenities. In spite of skepticism expressed about the economic feasibility of such great investment in environmental amenities, the critics were to be proven quite wrong over time, as the Caneel Bay Resort became one of the most profitable in the region.

1956: Dedication of the Virgin Islands National Park, St. John. Laurance Rockefeller transferred deeds for all property he had purchased outside of Caneel Bay to the National Park Service. The Caneel Bay hotel opened in December of 1956.

1960: [*Survey #1*]. In late 1959, at the suggestion of Mr. Rockefeller, the Department of the Interior joined forces with Virgin Islands Governor John D. Merwin and the St. Thomas and St. Croix Chambers of Commerce to sponsor a survey of recreational needs, sites and services in the USVI. Such sites were seen as possible St. Thomas and St. Croix supplements to the new National Park on St. John, then being assembled through a land acquisition program.

The needs survey was carried out by a licensed landscape architect, Kenneth B. Simmons, on contract to the National Park Service, following the protocol of the Congressionally authorized “Recreational Area Study Act” of 1936 [49 Stat. 1894]. This study was done specifically to encourage the Territorial Government to develop a territorial park system (similar to state park systems in the continental United States). The 65-page report contained dozens of illustrations and three USCGS foldout charts [#s 3242, 3240, and 3241]. It provides evaluations of 23 territory-wide recreational sites and 37 proposed new candidate sites. Approximately half of these were coastal sites.

In retrospect, this 1960 Department of the Interior inventory was remarkable in its foresight, scope and ranking priorities. For example, four of the St. Croix sites that were highlighted some forty years ago—East End, Great Pond, Cramer Park and Salt River—have been consistently featured on virtually all subsequent survey efforts and have precedence to this day.

1961: The Buck Island Reef National Monument with 283 hectares of surrounding water and reefs was officially designated by the U.S. Department of the Interior, which was eager to set an example for the Territorial Government in protecting some of the offshore cays (see the 1960 survey).

1962: A marine component of 2,287 hectares [8.8 square miles] was added to the terrestrial area of the Virgin Islands National Park originally created in 1956. This opened up the unusual opportunity of developing an integrated land and sea marine park and tied the two ecosystems together in one “coastal system” planning framework. Furthermore, this “marine protected area” now stands, some 40 years later, as one of the oldest such sites in the world, a veritable working model of tested management practices and lessons learned regarding a tropical insular site.

1968: [*Survey #2*] Under sponsorship of the U.S. Department of the Interior, the Department of Landscape Architecture at the University of Massachusetts carried out a study of selected resources in the U. S. Virgin Islands and their relationship to recreation, tourism and open space. A subsequent report, entitled *The Islands*, was prepared by Dr. Irvin Zube. It included an extraordinarily detailed set of eleven maps and excellent reviews of shoreline zones, corals, offshore cays and resource concentrations. This report was not widely circulated as it openly favored the Jersey Bay/Mangrove Lagoon site on

St. Thomas as a protected area, exactly where (at the time) the Virgin Islands Government proposed to construct a new airport.

1969: The Department of the Interior selected St. John's Lameshur Bay as the preferred site for a "Man in the Sea" saturation diving project called TEKTITE, which was extended as a project into 1970s and attracted the attention of a number of well-known coral reef ecologists and fisheries biologists. Because of TEKTITE, the Governor's office at this time had a parallel interest in promoting the Virgin Islands as a coral reef and marine ecosystem research center, but this never fully evolved (despite Interior's encouragement and the investment of Fairleigh Dickinson University in the West Indies Lab on St. Croix).

The TEKTITE project was successful but was summarily moved to Puerto Rico. In this particular case, as in the later *Virgin Islands and the Sea* initiative, good intentions by Interior came to naught because of an absence of local political support, despite the fact that the Lieutenant Governor had been appointed head of a new Virgin Islands Marine Resource Council, which also accomplished little and eventually faded away. It was a lost opportunity.

Dr. John E. (Jack) Randall, famous for his studies of prototype artificial reef studies at Lameshur Bay, St. John, published a survey of global marine parks, entitled "Conservation in the Sea." The booklet featured the Virgin Islands National Park's underwater park areas. [*Oryx*, Fauna Preservation Society]

1970: [*Survey #3*] In July, the Department of the Interior sent a senior marine specialist, William Beller, to the Virgin Islands to head a citizens-based study team charged with looking at the Territory's marine resources from a development and conservation perspective. After 100 volunteer "specialists" were recruited and dozens of public meetings held over a 90-day period, this *ad hoc* group produced a 170-page report filled with practical recommendations on "*The Virgin Islands and the Sea*". The Lt. Governor's Office issued a preprint with limited circulation, but the Governor's Office declined to publish it and the venture never moved ahead to an implementation phase. Mr. Beller moved on to Puerto Rico and later to Hawaii, where he successfully developed similar "*Island and the Sea*" community-based studies that were published and have, in recent years, been revisited with new updated editions.

1970-1974: The four-year period from 1970 to 1974 saw the emergence of several seemingly promising initiatives dealing with natural resources in the Territory, some of which were subsequently undone by later events.

Governor Ralph Paiewonsky had earlier taken a lead in searching for ways to obtain more lands for public use and open space. With the help of Stanley Cain (Department of the Interior), his administration had established the ingenious but short-lived and now-defunct Hess Oil Conservation Fund to purchase potential park land and open space areas. This was to be funded by a small royalty paid by Hess Oil on each barrel of crude oil imported by its refinery on St. Croix. Later the arrangement with Hess was abandoned and the fund dismantled. Although no significant parklands were ever purchased under its

provisions and its appointed advisory board never met, there were expectations during the early 1970s that if appropriate conservation initiatives were launched, appropriations would be available to support them through the Hess Conservation Fund.

Quite unexpectedly, in 1972, Senate Act No. 3190 was proposed, calling for establishment of a “Territorial Park System” for the Virgin Islands. The objectives of the Act, sponsored by then-Senator Virdin Brown, were “to preserve and enhance landscapes and seascapes typical of the Virgin Islands, the habitats of wildlife and sea life and historical and archaeological sites.” Unfortunately, the Act also reorganized the relatively new Department of Conservation and Cultural Affairs (predecessor to the current Department of Planning and Natural Resources), and the administration of then-Governor Melvin Evans was not interested in the proposed administrative reorganization. Therefore, apart from some serious planning, nothing happened. It was, in retrospect, a good idea whose time had not yet come.

During this period, submerged lands within the three-mile boundary limit were transferred by the Federal Government to the Territorial Government [Act No. 3667 entitled “Trustlands Occupancy and Alteration Control Act”). One objective of this act was to place inshore dredging activity under local monitoring and regulatory control. Federal oversight had proven insufficient.

In 1972, Alan Robinson, the Virgin Islands National Park’s resident scientist in St. John, completed a detailed development study and plan for a marine protected area at Lagoon Point, Coral Bay, St. John. No follow-up action was taken except the site later became an Area of Particular Concern (APC) in the draft Virgin Islands Coastal Zone Management Program.

In 1973 [*Survey #4*], a three-island conservation inventory was undertaken by the Virgin Islands (federally funded) Soil Conservation Service. A professionally assembled report was published including a new inventory of public recreation sites (actual and proposed) with maps. An agenda for maintaining coastal water quality was included. The recreational sites were picked up under the State Comprehensive Outdoor Recreation Plan (SCORP), published every 5 years since.

In 1974, DCCA’s Director of Planning and Development, Robert Mathes, recommended establishing “marine reserves within the Territorial Park System” for the protection of natural and/or cultural-historic marine resources. He sought to restrict some areas as “controls” to monitor environmental change elsewhere in the Territory. There was no follow-up.

In 1974, the Federal Coastal Zone Management Act was modified just prior to passage to include the Territory of the Virgin Islands. The Virgin Islands Coastal Zone Management Act was to be five years in the making [see below, 1979).

1975: The DCCA Director of Planning and Development, Robert Mathes, proposed specific new Territorial Marine Reserves as follows [Copy of typescript from Island Resources’ files; File name: DCCA/75/TP.]:

APPENDIX C, TABLE 1: PROPOSED TERRITORIAL MARINE RESERVES, 1975

PROPOSED TERRITORIAL MARINE RESERVES: 1975		
	PRIORITY 1	PRIORITY 2
ST. THOMAS	Coki Point Mandahl Bay and Salt Pond (environmental restoration experiment area)	Botany Bay/Sandy Bay Jersey Bay/ Mangrove Lagoon (western portion)
ST. CROIX	Eastern St. Croix Reef System Great Pond Bay	Long Point Mangrove Lagoon Manning Bay Mangrove Lagoon Altona Lagoon Southgate Pond
ST. JOHN	Santa Monica Wreck Site	

In 1975, Dr. Alan Robinson, formerly the Chief Natural Scientist in the VINP on St. John prepared an official survey of marine and coastal parks in the US. Of the 21 sites included, only the VINP and Florida park areas had the highest rankings of both *prime significance* and *representative coverage* in four classification categories. The paper was presented to the 1975 World Marine Parks Conference in Tokyo.

1976: The prospects of implementing Act No. 3190 to create a Territorial Park System (see above) improved when the bill's sponsor, Senator Virdin Brown, was appointed Commissioner of Conservation under the new administration of Cyril E. King. Commissioner Brown, assisted by two of his assistants—Bob Mathes, who headed Planning and Development, and Tim Still, a park planner—prepared and circulated a work plan for implementing the long-awaited Territorial Park System [*Survey #5*]. The plan in outline form included a proposed budget of \$199,000 of which \$150,000 was designated for external consultants to support in-house staff). The work program anticipated:

... planning and developing the park system in an environment of scarce resources and a climate of cooperation. A first class, multi-faceted park system is the goal, comprehending conservationist, recreational, educational and managerial roles [Brown Memo, November 22, 1976].

Meanwhile, the 12,650 acre [5,118-hectare] Virgin Islands National Park on St. John and significant adjacent marine waters were formally designated as a Biosphere Reserve by UNESCO (after it was so nominated by the U.S. Department of the Interior). It is classified within the IUCN Uvardy System as a component of the Lesser Antillean biogeographic province.

1977: [*Survey #6*] The first draft of the U.S. Virgin Islands Coastal Zone Management Program was developed under sponsorship of the U.S. Coastal Zone Management Act of 1972. The process of assessing Areas of Particular Concern (APCs) and Significant Natural Areas (SNAs), each of which required site studies and ranking,

began at this time. DCCA developed a list and map of SNAs, and the Planning Office prepared a selected list of APCs. [See the *VI/CZM Program Plan*, pp. 139 to 169 and/or the Impact Assessment Document, pp.84 to 107.) Sites identified included the following:

St. Thomas:

- Jersey Bay Mangrove Lagoon
- Mandahl Bay Lagoon Restoration Area

St. Croix:

- St. Croix Reef System Reserve
- Green Cay
- East End/Isaac Bay
- Long Point Mangrove Lagoon
- Manning Bay Mangrove Lagoon
- Altona Lagoon
- Southgate Pond
- Salt River – Sugar Bay
- Sandy Point
- Great Pond Bay

St. John:

- Lagoon Point

[*Survey #7*] Under contract with the Virgin Islands Planning Office, the Island Resources Foundation assembled a study team of scientists, geographers and planners with the aim of developing a planner's handbook characterizing the component parts and functional elements of the Virgin Islands insular ecosystem (marine, terrestrial and benthic). This document, which was entitled *Marine Environments of the Virgin Islands: Technical Supplement # 1* [Towle, 1977] and published in 1977, included an inventory of natural resources, an analysis of biophysical relationships, coastal zone planning guidelines and scoping information for resource management, including APC and SNA coverage and ranking.

1978. Act No. 4163, authorized adding 121 acres, donated by Fairleigh Dickinson, Jr., to Cramer Park [St. Croix] as a territorial park, with a shore front

easement for “studies in ecology, marine biology, oceanography, etc.” This area was to be named the Fairleigh Dickinson Territorial Park.

1979: Act No. 4248 “Virgin Island Coastal Zone Management” was enacted by the V.I. Legislature. The actual Program Plan had been previously vetted by an Environmental Impact Assessment (EIA) process carried out by the U.S. Department of Commerce.

[*Survey #8*] During this period (1978 and 1979) a team of lawyers from Chelsea International in Washington, DC was employed by the Office of the Secretary of the U.S. Department of Commerce under the framework of the Marine Protection, Research and Sanctuaries Program. The team was charged with conducting a survey of four possible Marine Sanctuary sites in the Virgin Islands and identifying a preferred site to develop under the aegis of an emerging Virgin Islands Territorial Park System. A public hearing was held on the preferred site in 1978 while DCCA was reformulating the marine component of its stalled territorial park plan. Other sites on St. Thomas were later surveyed, and DCCA developed a Marine Sanctuary Advisory Board to help with site selection and planning.

In November 1979 NOAA (U.S. Department of Commerce) printed a Notice of Intent in *The Federal Register* to Prepare an Environmental Impact Statement for a proposed marine sanctuary in the Virgin Islands. Consultation began with other Federal agencies (Caribbean Fisheries Management Council, the Army Corps of Engineers, Department of the Interior), local NGOs and local fisheries cooperatives. The site selected, Jersey Bay, generated significant opposition from the Virgin Islands fishing community, and the planning process ultimately ended in a stalemate, with no marine sanctuary. [DCCA, 1979]

By the end of the decade, DCCA had been unsuccessful in developing systemic elements for its proposed system of parks and protected areas. This was due in part to the untimely death of Governor King, under whose administration planning for the concept was first carried out. His successor as governor, Juan Luis, did not place equal emphasis on development of a territorial park system, and focus shifted almost entirely to implementing the relatively new, Federally sponsored and funded Virgin Islands Coastal Zone Management Program. For those concerned that prospective marine park and protected area sites continued to be at risk, the CZM planning initiative appeared to offer some hope through potential implementation of improved management strategies for selected coastal “areas of particular concern” (APCs) and “significant natural areas” (SNAs).

That expectation went mostly unrealized, as APC/SNA program *implementation* has never been undertaken. Between 1978 and 1980, none of the draft APC and SNA management plans developed were completed. *A decade would pass before the subject would again be approached.* In the meanwhile, the Territory’s fisheries, wetlands, beaches, historic sites, harbors and salt ponds would do without the policy guidance, management standards and protection tools normally associated with coastal resource management programs. Many of these are still not in place, even in draft or pilot form.

1980-1990: However, times and priorities do change. The collective impacts of continuing development, over-fishing, and sediment discharge from land- and marine-based pollution began to raise new management questions with respect to the marine environment. Among resource managers and some government leaders there was a new focus on the need to protect some aspects of the coastal and marine resource base so that the remainder might prosper.

The decade of the 1980s saw the beginning of a change in perspective among some Virgin Islanders regarding the efficacy of natural area resource conservation. Some of the high points that led to more routine mechanisms of protection—especially marine reserves—are listed below.

1981: Although no action had been taken on the 1972 Territorial Parks Act, a DCCA staff member, John Alexander, developed a preliminary policies and standards document for a Virgin Islands Park System. One noteworthy feature of this 90-page plan was that the marine areas of proposed parks—such as Magens Bay, St. Thomas’s Mangrove Lagoon and Salt River—were clearly included within proposed “park” boundaries. However, this park systems plan draft was never circulated widely, nor was it ever completed.

During this period, the Virgin Islands National Park came under more frequent and often harsh criticism from St. John’s residents. St. Johnians were disturbed by escalating land costs and by a seemingly pervasive number of National Park Service regulations limiting certain “traditional” natural resource uses (*e.g.*, tying up private fishing craft to mangroves within the Park or using mangrove wood for fishpot construction and charcoal making). The VINP Superintendent, seeking opportunities to lessen the criticism, arranged in 1981 for the regional office of the NPS to contract with the Island Resources Foundation to undertake an economic impact assessment of the National Park on St. John. The EIA was designed to document the economic role played by the VINP, both in St. John and the in Virgin Islands Territory.

This study [Posner, Towle, et al. “Economic Impact Analysis for the Virgin Islands National Park.” Island Resources Foundation, St. Thomas. 95 pages, 1981.] was carried out by a team of economists and planners who concluded that the direct and indirect benefits of the Park were ten times greater than the costs. [The study was later featured in a 1990 book from Island Press by John Dixon on the *Economics of Protected Areas*, pp. 154-161.) It is noteworthy that the marine component of the VINP contributed significantly to the economic productivity and service support functions of the VI tourism industry, the Territory’s major employment sector.

1983: DCCA circulated a much expanded and improved earlier draft of “Proposed Rules and Regulations for Territorial Marine Parks and Reserves.” [Copy of typescript draft from Island Resources’ files; File name: DCCA/83/TP.] They were filed without action.

Also in 1983, following UNESCO’s earlier selection of the National Park on St. John as a Biosphere Reserve, the U.S. Department of the Interior moved to fulfill its obligation to

carry out a detailed biophysical characterization of the Reserve (essentially the island of St. John) and its adjacent submerged lands, reefs and coastal waters. To accomplish this, \$500,000 was provided for the VINP to undertake this comprehensive study using a 13-member institutional collaboration that was eventually named the Virgin Islands Resource Management Cooperative (VIRMC).

Coordinated by Island Resources Foundation, from 1983-1988, 30 separate studies were completed, principally of St. John's marine and coastal ecosystems. The coastal inshore seabed was mapped in its entirety, watershed/reef linkages were explored, long-term monitoring sites were established, and management issues defined. A series of 30 separate VIRMC reports was published. They are still available [see the Chapter 6, References] and furnish a building block of information on the marine environment of the Virgin Islands. Furthermore, this five-year, half-million-dollar data assembly remains a model for interdisciplinary research and a reference point for any ongoing or proposed marine protected area research in the Territory.

1989: In September 1989 Hurricane Hugo inflicted severe damage on many coastal ecosystems and the Territory's fishing industry. The trauma of the storm had enormous impact and led to serious discussions about recovery and mitigation strategies as well as resource management options. Only two months after Hugo, the Division of Fish and Wildlife and the V.I. Senate's Natural Resources Committee discussed major changes in fisheries legislation and simultaneous closure of 9 reef and 13 sea grass areas to accelerate recovery. These discussions were carried over to the new decade.

1990: In August, new Rules and Regulations for a Virgin Islands Marine Reserve System [Typescript draft from Island Resources' files; File name: DPNR/F&WL/1990.]: were circulated by the Territory's Division of Fish and Wildlife. The protected sites were mostly coastal inshore areas drawn only from St. Thomas. In retrospect, the exclusion of the rest of the Virgin Islands in the proposed system was a tactical error. The recovery scheme and proposed reserve system were not approved, and the idea was dropped.

1990 to Date: The shock effect of Hurricane Hugo (September 17-18, 1989) and sundry storms and hurricanes that followed during the decade of the 1990s (especially hurricane Marilyn in September 1995) has not yet dissipated among the survivors, the social order and the environments of the several Virgin Islands. The events of September, 2001, only add to the sense of impermanence. The subtleties of the impacts still lurk everywhere. Therefore, planning for any expansive coastal or marine protected area is fraught with risk and needs to be done both with caution and "an eye to windward," along with a mantra that is built upon the "cautionary principle" and grounded solidly in the historical record.

1990: Just three-and-a-half months after Hugo, a senior staffer from the Department of Planning and Natural Resources (DPNR) requested funding from the National Oceanic and Atmospheric Administration (NOAA) to undertake a field-level coastal damage assessment of the Territory. Aerial surveys had already been done by FEMA, specifically of heavily populated areas, to assess housing and infrastructure

losses. Approval by NOAA and the local contracting process required an elapsed time of five months. It was not until June of 1990 that the Government of the Virgin Islands entered into a professional services contract with Island Resources Foundation to manage an interdisciplinary post-Hugo Damage Assessment and Environmental Recovery Planning Strategy. Somewhat hidden within the language of the contract was an interesting additional task—namely, “to manage a Feasibility Study for Development of a Virgin Island Territorial Park System”.

The project seemed like a grand case of serendipity. To utilize the recovery effort as a launching vehicle for a long-delayed territorial park system seemed to make good sense. But, in retrospect, there was an element of wishful, even naive thinking in this apparent stroke of good fortune, given the extent of Hugo damage to landscapes, seascapes, institutions and budgets.

The exercise was launched with a community-based open charette, led by Governor Alexander Farrelly and Onaje Jackson from DPNR. By this method, 35 reportedly damaged sites were nominated and ranked. An open voting arrangement was employed, using the Delphi strategy for ranking. The broad listing (which excluded Federal property and sites) included 11 APC sites, 26 SNA sites, and 17 Coastal Barrier sites, which suggests the selection process was by no means frivolous or self serving for charette participants.

Three months of somewhat frenetic on-site field work followed, carried out by several interdisciplinary teams who generated a flow of up-to-date damage assessments, vegetation and risk mapping, intervention options, remedial action plans, and triage-like data sorting, all leading to site profiles and a detailed 35-site data base [*Survey #9*].

A comprehensive nine-page matrix was designed and populated, including aerial, underwater and land-based photography, documentation, and water quality station index numbers. Damages were mapped with key word indexing and narrative summaries. The matrix also tracked the source and dates of prior site nominations for protected area status by type and ranking. The final reporting incorporated surveys of available and/or desirable adjacent land, mapped by parcel and showing parcel numbers and appraised costs for park acquisition.

All documentation and final reporting data were submitted to DPNR in 1990, but all files, documents, and data sets was apparently lost when DPNR facilities were struck by Hurricane Marilyn in 1995. One complete and one partial set survive in Island Resources Foundation’s document library, which is now housed at Coral World, St. Thomas.

The recommendations for territorial park site selection and an implementation strategy, as contained within this extensive post-Hugo resource assessment, have essentially been ignored in the intervening decade.

1991-2001: One of the more promising aspects of the Virgin Islands Coastal Zone Management Program has been the prospect that APC management plans would provide needed conservation guidelines and site protection strategies for valuable resource

features within each of the 18 identified APCs, all sited within the coastal zone. Unfortunately, it has been a discouraging story of delay, delay, and more delay.

Although part of the Virgin Islands CZM Program, APC planning was initially shunted aside (except for a half-dozen good-intentioned, rough-draft plans developed by Robert Teytaud, first under the direction of DCCA and later DPNR, in the 1980s). Nothing else was done until 1991 when Island Resources Foundation was contracted by DPNR to research and produce all 18 APC management plans in draft form in less than 24 months. Each draft plan was reviewed in a series of public meetings. A disagreement over the scope of the documents followed after all 18 APC plans had been accepted by DPNR), and the Island Resources-generated documents have since been redefined as background documents. Subsequent contractors, including the University of the Virgin Islands, have failed to complete the required “management plans” for a selected and limited number of APC sites. To date, no APC management plan has been approved by the Virgin Islands Legislature, a step required under CZM legislation prior to plan implementation. Thus far, the APC planning initiative has been a convoluted, generally disappointing planning exercise.

1992: In a short-lived newspaper called *Sun2*, editor-publisher Gary Schlueter reported that in St. Thomas there were 74 acres of public parkland, including 47 acres at Magens Bay; and 601 acres of public housing. [Schlueter, 1992]

1992: The [US] Omnibus Territories Act of 1992 created the Salt River Bay National Historical Park and Ecological Preserve *and* a Virgin Islands Territorial Park Commission with the mandate to “see that all park management, development and interpretation activities should be guided by a single management plan. The Act also provided training funds for the Territory. [Schlueter, 1992] The plan is not yet completed.

1997: Sponsored by the Caribbean Fisheries Management Council (CFMC) in San Juan, a Fisheries Reserve—part of a Marine Conservation District—was proposed for the Territory as a fisheries management mechanism. The area identified for the Reserve was located off the southwesterly coast of St. John. Dr. Michael Downs, representing Impact Assessment, Inc., a California-based consulting firm, carried out a detailed socio-economic evaluation for the proposed District (a “no-take” zone)[Downs, 1997]. Opposition by local fishers and lack of Virgin Islands Government support resulted in the plan being a non-starter, and it was dropped by CFMC after a public hearing.

1999: The USGS Biological Resources Division studied alternatives for improved protection of local fisheries and coral reef resources in the US Virgin Islands. The result was a report and recommendation for a *Virgin Islands Coral Reef National Park and Replenishment Areas* [Garrison, 1999].

[Since this article was submitted a column in the Virgin Islands Daily News by Olasee Davis called our attention to an extensive survey—the 11th—of marine and coastal park recommendations that was produced in 1964, but which was never circulated widely in the US Virgin Islands.]