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draft (11) Consolidated
Review Copy marked up
May 7, 1979



BUCK ISLAND REEF
NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

DRAFT ENVIRONMENTAL STATEMENT

INCLUDING

DRAFT GENERAL MANAGEMENT PLAN

155 5/9

BUCK ISLAND REEF NATIONAL MONUMENT

UNITED STATES VIRGIN ISLANDS

Prepared by
Denver Service Center
National Park Service
United States Department of the Interior

Regional Director, Southeast Region

SUMMARY

(x) Draft

() Final

() Environmental Statement

United States Department of the Interior, National Park Service, Southeast Region.

1. Type of Action: (X) Administrative () Legislative

2. Brief Description of Action: The National Park Service proposes to adopt a new general management plan for the overall use, preservation, management, and development of Buck Island Reef National Monument (St. Croix, Virgin Islands). The plan, in accordance with *National Park Service Management Policies*, classifies the monument's 176 acres of land and 704 acres of sea into the natural zone with three subzones: natural environment (¹⁵⁷ acres land, ¹⁶⁰ acres sea), environmental protection (¹⁵⁵ acres land, ¹²³ acres sea), and outstanding natural (¹⁶ acres land, 544 acres sea). The plan's main thrust is to devise methods of accommodating increasing numbers of visits to the marine gardens in such ways as to minimize destruction of the very resource that attracts the visitors. It does this by limiting the number of boats able to enter the popular southern lagoon and moor at the East End Underwater Trail; providing an additional underwater experience zone (with appropriate facilities and ~~convenient~~ access) off the island's ^{northern} shore; and furnishing swimming, sunbathing, hiking, and picnicking opportunities through improvement of existing visitor facilities and development of minimal new facilities. It also proposes that both visitor activity and natural phenomena be increasingly monitored by park staff and that research be conducted on both natural and man-influenced processes of the reef and island.

natural area
and an
historic
preservation
zone (3 acres
land)

LSS 5/7

LSS 6/5

The plan will provide long term protection of land and aquatic ecosystems of Buck Island Reef National Monument. ^{stricter controls over recreational}
3. Summary of Environmental Impacts: ^{use of the beaches, and reefs during periods of peak visitation, will} The visitors' experience ^{will} for some will be diminished to the extent the present underwater activity is restricted to expanding use, yet the experience for those still able to participate will be improved. The portion of the tour boat industry dependent on the monument will be held to an economic level about as at present, restricting opportunity for growth. Land trails will disturb vegetation and animals, ^{new trail} altering species mosaics along the corridors. Facility construction will add or extend intrusions in areas now pristine. ~~Site disturbances noise, materials, and machinery intruding on the primitive atmosphere plus water turbidity, excavation, and deposition will occur during development.~~

LSS 5/7

4. Alternatives Considered:

- No action
- Install pier and transfer dock off southern shore
- Provide government transportation
- Develop visitor-use area off ^{the northwest end of the island} northern shore
- Develop visitor-use area off the island's southern shore

LSS 5/7

5. Comments Have Been Requested From the Following:
(See list on following page)

6. Date Draft Statement Made Available to ^{EPA} ~~CEQ~~ and the Public:

LSS 6/5

5. Comments Have Been Requested From the Following:

~~Government of the Virgin Islands, Department of Conservation and Cultural Affairs (Commissioner Hortense Rowe), and Virgin Islands Planning Board (Mark Isaacs).~~

~~Chamber of Commerce of Virgin Islands (President Alfred B. Hayes).~~

~~St. Croix Landmark Society (Alfred B. Hayes and Harry Neuman).~~

~~West Indies Laboratory, Fairleigh Dickenson University (Drs. Lee Gearhart and John Ogden).~~

~~St. Croix Skin Divers Association (John Williams and Dick Malpass).~~

~~St. Croix Commercial Boatmen's Association (Richard Olney).~~

United States Coast Guard.

~~Mr. Peter Thurland, 80-year resident of Christiansted.~~

delete

Federal Agencies

Advisory Council on Historic Preservation
Department of the Interior, Heritage Conservation and Recreation Service
Fish and Wildlife Service
Department of Transportation, Secretarial Representative
Environmental Protection Agency

LSS 5/8

Territorial Agencies (Government of the Virgin Islands)

check
clearinghouse?

→ Department of Conservation and Cultural Affairs
Virgin Islands Planning Board (Historic Preservation officers)

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PREFACE

This document combines the general management plan for Buck Island Reef National Monument with the plan's environmental statement. This single-document format conforms to National Park Service requirements for both reports. The first chapter, Description of the Proposal, presents the Buck Island Reef National Monument General Management Plan in the form of an introduction (purpose, significance, and management objectives), a resources management plan, a visitor use plan, and a general development plan. Subsequent chapters of the document present background information, impacts, alternatives considered, and consultation/coordination. Those unfamiliar with the area may wish to refer to the second chapter, Description of the Environment, to better grasp the first chapter.

changed to
agree with
new NPS-2
July 78
JSS 5/9

management zoning

I. DESCRIPTION OF THE PROPOSAL

A. Introduction

1. ~~A~~ Purpose of the Park

Buck Island Reef National Monument, United States Virgin Islands, was established December 28, 1961, by Presidential Proclamation No. 3443 to preserve "one of the finest marine gardens in the Caribbean Sea" for the benefit and enjoyment of the people. In February 1975 Presidential Proclamation No. 4346 added approximately 30 acres of submerged land to the monument "to insure the proper care and management of the shoals, rocks, undersea coral reef formations and other objects of scientific and historical interest...." Appendix A contains copies of the proclamations and legislation.

2. Significance of the Park

move 41 to here from p. 2

§ 55 5/8

3. Management Objectives

Conditions desired for Buck Island Reef National Monument are contained in the Statement for Management, a document providing a current summary of the state of the park.

The Statement for Management was approved by the Regional Director, Southeast Region, National Park Service on October 3, 1977. Management objectives contained in the document are detailed in Appendix B.

§ 55 5/8

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B. Significance of the Park

The monument's significance lies primarily in its magnificent offshore reef — the marine garden — that can be viewed along the underwater trail in the nearly enclosed seawater lagoon. Additionally, the monument is the nesting site of several endangered species of turtles and the endangered brown pelican. Finally, the recreational opportunities offered by Buck Island are of increasing importance as the unprecedented real estate development in the vicinity continues to restrict public access to beaches and shores.

C. Statement for Management

1. Management Objectives

The objectives for management of Buck Island Reef National Monument are:

a. To Conserve Natural Resources

Ensure long-term perpetuation of the barrier reef and its associated biota, as well as the native vegetation, wildlife, and other natural resources of Buck Island itself, and minimize the adverse effects of human activities on these resources.

Maintain the highest possible habitat quality for endangered and rare species, such as the brown pelican (endangered), hawksbill and leatherback turtles (endangered), green turtle (rare), Ameiva ground lizard (endangered), and stinging bush (endangered and endemic to Buck Island and St. Croix).

Reduce the adverse effects of erosion on vegetation and soils along the hiking trail.

Reduce the adverse impact of exotic species, such as the mongoose and tree rat, on populations of native flora and fauna.

Ensure that the aesthetic quality of the barrier reef and island is not impaired by structures and other visual intrusions.

Ensure that the recreational taking of conch, whelk, lobster, fish, and other marine life does not adversely affect the ecological balance of the barrier reef.

b. To Preserve Cultural Resources

Identify, evaluate, preserve, and protect the cultural resources in a manner consistent with executive and legislative requirements and National Park Service historic preservation policies.

c. To Acquire Management Information

Secure adequate information, through research, monitoring, or other means, to enable efficient and effective management of the natural resources.

Evaluate the effects of subsistence fishing and shellfishing in the western part of the park on ecological communities of the barrier reef and adjacent waters.

Locate and evaluate sources of pollution that may adversely affect the marine ecosystems.

Evaluate the ecological importance of fire in determining the structure of park vegetation.

delete

replace
with 7 on
Management
Objectives
p. 1
JSS 5/9

d. To Provide for Visitor Use and Enjoyment

Make available opportunities for day-use recreational activities such as picnicking, hiking, fishing, shellfishing, swimming, and snorkeling at levels and in locations where they are compatible with long-term perpetuation of terrestrial and marine resources.

e. To Provide for Visitor Safety

Promote public awareness of potential hazards associated with boating, snorkeling, hiking, and other activities and thereby help ensure a safe, enjoyable experience for all visitors.

Minimize congestion, promote sound seamanship, and ensure public safety at the mooring area in the underwater trail area.

Ensure that visitors are well informed on the poisonous characteristics of the manchineel tree and that appropriate warnings are provided in public-use areas where the species occurs.

f. To Interpret the Monument

Promote public understanding and appreciation of the ecology of the barrier reef and of the sensitivity of this fragile ecosystem to human activities.

Ensure that the techniques used for underwater interpretation are effective, provide high quality experiences, and do not adversely affect the barrier reef environment.

Foster awareness of the native terrestrial flora and fauna as well as other natural resources of the Virgin Islands; of the processes responsible for their continuing evolution; of the influences that may adversely affect them; and of the progressively increasing importance of the park in conserving these resources as other areas of the Virgin Islands are developed.

g. To Operate Efficiently

Improve the efficiency of monitoring environmental conditions and public use.

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2. Land Classification

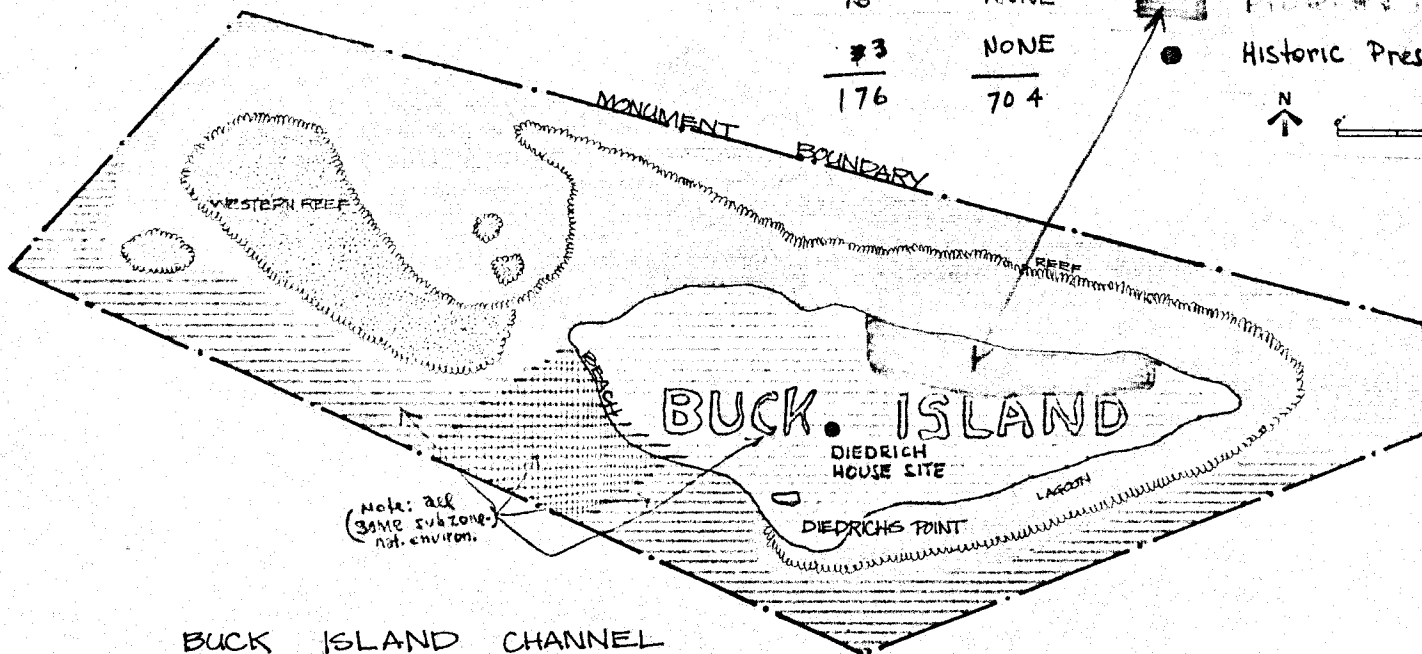
In accord with the National Park Service management policies, the classification system ("Planning Process, NPS-2", 1978) ~~the foregoing management objectives are further refined with respect to specific resource zones.~~ All lands, reefs, and waters of the monument are classified into three subzones of the natural zone (Land Classification map).

Future management emphasis for the park's lands and waters are shown on the Proposed Land Management and Use map. The map shows where different kinds of management strategies will be implemented to attain the management objectives.

ATLANTIC OCEAN.

LAND ACRES	SEA ACRES
157	544
16	160
73	NONE
176	NONE
	704

- subzone
-  Outstanding Natural Feature ~~Subzone~~
 -  Natural Environment ~~Subzone~~
 -  Protected Natural Area
 -  Historic Preservation ~~Subzone~~



MANAGEMENT AND USE LAND CLASSIFICATION

BUCK ISLAND REEF NATIONAL MONUMENT
United States Department of the Interior / National Park Service

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current date 11/3/2005 A
DSG AMT

could result from an increase in visitation or, at peak-use periods, from the limitation of use of the existing underwater trail. Additionally, the single existing underwater trail system restricts visitor options as to Buck Island activity. A typical visit is forced into a basic pattern ~~—however delightful—~~ regardless of which commercial boat is chosen for transportation; services and fees are similar, providing little basis for a discriminating choice.

~~An alternate underwater trail that will reduce dependence on boat support will go far toward enriching the visitor experience. The reef zone immediately south of Diedrichs Point has long been recognized as a good viewing area; an underwater trail was once in use there, but was abandoned when the East End Underwater Trail became popular. This zone will be carefully scrutinized to identify a site for a new trail.~~

delete

~~A new installation at the selected location will consist of a buoyed line stretching from shore to an appropriate point on the reef and anchored securely at both ends. Floating rest platforms will be positioned where needed. Underwater interpretation will be handled similarly to that on the East End Underwater Trail. A ranger-lifeguard in a small National Park Service boat will be in position at the trail each day during the designated (and so signed) times for snorkeling activity.~~

~~Private enterprise on St. Croix will be encouraged to provide round-trip boat transportation from Christiansted to the existing dock on Buck Island (the dock will be lengthened about 100 feet and improved to accommodate private and commercial boats). A boat-capacity figure for the dock will be established, and if necessary a permit system will be implemented to ensure that optimum totals are not exceeded.~~

delete

~~A typical visit to Buck Island by the visitor who uses the alternate underwater trail would be as follows:~~

~~Arriving at the Buck Island dock, he could utilize the shelter, picnic tables, changing room, and toilet facilities to prepare himself for picnicking, hiking, swimming, sunbathing, or snorkeling. For any activity other than snorkeling, he would simply go his own way and return to the dock at an appointed time for return to St. Croix. Snorkelers would have a choice of hiking directly to the new underwater trail*, about 0.25 mile, or of first receiving snorkeling instruction near the dock from individual boat captains or a ranger stationed there for information, orientation, first aid, and surveillance purposes.~~

← delete
(typical visit will be similar to visit to E. End)

~~*Routing would be via the beach, with the option of returning on a trail to be constructed across the point. Occasional high water on the beach could be avoided by using the inland trail both ways. During turtle-nesting season the beach route would be closed if necessary.~~

delete

Underwater trail markers and rest floats will continue to be provided to ensure visitor enjoyment and basic understanding of the marine resource.

E. Visitor Use Plan

1. Existing Use

Visitor use and the methods of transporting people have generally been satisfactory except for one serious problem — the number of boats within the lagoon has grown to the point where, at times, both visitors and the resource are endangered. The number of boats wishing to moor at the east-end anchorage shows signs of becoming a problem as use increases. This plan proposes a three-part solution.

2. Proposed Improvements

a. Control East End Underwater Trail Use

A rationing system will be implemented to limit the number of boats entering the lagoon and mooring at the East End Underwater Trail. This limitation, now under study by the monument staff and Southeast Regional Office, can be effected in several ways, including special use permits, concession permits, or a strictly enforced reservation system.

The goal of ^{the reservation} ~~any rationing~~ system ^{I would} ~~will~~ be to schedule mooring availability in such a way ^{that not more than} ~~as to ensure a limit of~~ 10 boats (commercial and private) at the trail at any given time.

^{on use} ~~This~~ limitation will solve the most obvious problem — that of controlling groups of swimmers in such a way as to reduce their numbers to the point that they do not interfere with each other, nor boats interfere with them. An additional benefit of ^{reserved} ~~rationed~~ use will be a reduction of adverse impacts on the prime resource — the coral reef.

A typical visit then, for those authorized to use the East End Underwater Trail (either charter boat participants or private boat owners), will be as follows:

Those who so desire will receive snorkeling instruction at West End Beach and will then proceed to a reserved mooring at the East End Underwater Trail. After snorkeling, passengers will return by boat to West End Beach for sunbathing, swimming, hiking, or picnicking. By midafternoon most boats will probably depart for St. Croix.

A ranger patrol boat will continue to provide general surveillance. Lifeguard and guide services will remain a function of boat operators, each responsible for his own party.

b. Establish New Underwater Trail

^{at the "North Cut" area north of the island} A second underwater trail will be designated, although support facilities will not be developed until the trail is needed to meet increased demand. This

continue under (3)

The rookery is located on the northeastern slope of Buck Island. Of prime importance is the endangered brown pelican. Thirty-five nests have been counted in June and July during the peak nesting season. This is the only nesting area in the St. Croix area utilized by this bird. The magnificent frigate bird, 50 to 75 in number, roosts beside the pelican, but does not nest on the island.

~~Visitor use in this subzone will be controlled to the extent necessary to protect the fragile marine resources. Underwater trail markers and rest floats will continue to be provided to ensure visitor enjoyment and basic understanding of the marine resource.~~

The underwater trail concentrates visitors. A designated area with 11 moorings *only* will continue to be provided for boats at the underwater trail (use of anchors is prohibited here because of fragile coral formations).

in the southern lagoon

b. Historic Zone

A historic preservation subzone will be established at the site of the Dietrich house. This site with foundations of a residence and other structures has been ^{recommended for} nomination to the National Register of Historic Places. Preservation ^{and interpretation} of the ruins will be given primary management emphasis.

nothing on Buck Island has gone in for nomination - haven't received anything from SPAC on nomination. check with Pete Faust. Len Brown 6/27/79

Fragile coral formations in the lagoon will continue to be protected by designation of an area. The underwater trail concentrates visitors. A designated area with limited to 11 moorings only will continue to be provided for boats at the underwater trail. Use of anchors is prohibited here because of fragile coral formations. It will continue to be.

C. B. Resources Management Plan

1. Natural Resources

^{Efforts}
The exotic mongoose will continue to be eradicated through trapping by the National Park Service, with the technical support of the Bureau of Fish and Wildlife, Department of Conservation and Cultural Affairs, Virgin Islands Government.

^{will be continued}
~~Resources information will be gathered by continuing existing research~~
^(will be initiated)
programs and ^{of natural resources} initiating new programs as needed to provide the knowledge for their appropriate management within the framework of National Park Service policy. One particular field of investigation will be an examination of the consequences of continued consumptive uses of marine life by inhabitants of the Virgin Islands, a right provided in the proclamation of establishment. Other high-priority research that will be conducted includes:

* Natural resources base map, including major coral inventory.

* Destructive agents on the reef. Research will be continued to determine the impacts of swimmers, scuba divers, boats, and natural ocean and storm processes on the reef.

* Coral growth rate and productivity. Sufficient information on reef growth and regeneration is lacking to adequately assess the effect of the destructive agents.

Turtle nesting.

Boat pollution. Pollution within monument waters is evident from activities of boat operators — scrubbing, cleaning, rinsing, and bilge-emptying — and will be quantified.

Nesting activities. The National Park Service, in cooperation with the Bureau of Fish and Wildlife, Virgin Islands Government, will continue to monitor nesting activities on the rookery and take census counts during the nesting season.

~~Disturbance of the rookery will continue to be monitored.~~

There is no known yardstick to determine vegetative cover for Buck Island prior to disturbance by nonaboriginal man. Introduction of known exotics is prohibited, and established exotics will be monitored to determine growth, regeneration, and detriment to native flora.

^{delete}
* Active research by West Indies Laboratory is in progress.

← check to find out if they are 6/79

2. Historic and Cultural Resources

~~The ruins of~~ ~~Of Buck Island's three historic sites~~ ~~aboriginal midden with coral mounds, circa 1793~~ ~~Diedrich's homestead ruins, and sunken ship~~ ~~the first two will be~~ ~~recommended for nomination to the National Register, as suggested by a 1976~~ ~~archaeological survey completed by the Southwest Archeological Center. An aboriginal midden~~ ~~with coral mounds, also recommended for nomination by the 1976 study, has since been~~ ~~washed away as the result of a receding shoreline. It will receive no further consideration for~~ ~~nomination.~~ ~~Additionally, the natural landscape of Buck Island approximates that~~ ~~seen by Columbus on an early voyage, this undeveloped appearance will be maintained~~ ~~essentially as is, with special care given to not marring the horizon lines.~~

DELETE

Natural landscape is not an historical resource just because an historic figure might have seen it
JSS 7/6/79

Review of data indicate that the remains of a sunken coaling vessel off the northwestern end of the island does not warrant nomination to the National Register.

Actions affecting any property that eventually is listed on the National Register will be subject to compliance with the Procedures for the Protection of Historic and Cultural Properties promulgated by the Advisory Council on Historic Preservation (36 CFR 800)

II. DESCRIPTION OF THE ENVIRONMENT

A. General

1. Setting

Buck Island lies in the Caribbean Sea within the Territory of the United States Virgin Islands. Of the United States Virgin Islands, St. Croix is the largest. Buck Island lies 1.5 miles off the shore of St. Croix at a distance of 6 miles from Christiansted, St. Croix's largest community.

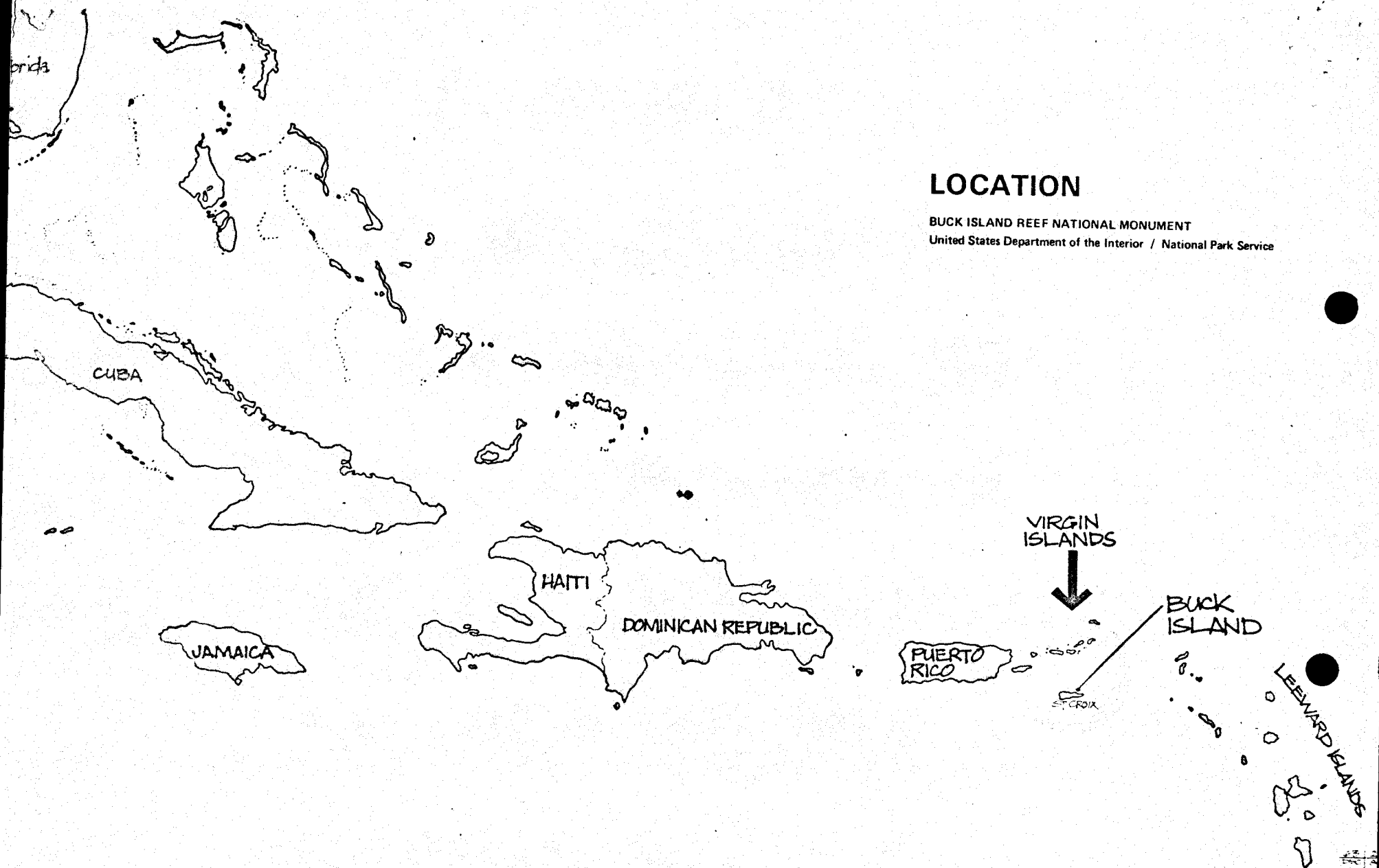
Buck Island's location may have played a part in the development of the reef. All the British and United States Virgin Islands (except St. Croix and nearby Buck Island) are part of the long line of islands and intervening shallows that separate the Caribbean Sea from the Atlantic Ocean. St. Croix and Buck Island, on the other hand, are separated from the rest of the Virgin Islands by 40 miles of water and by a sea trench 8,000 to 14,000 feet deep.

Furthermore, St. Croix with its satellite Buck Island lies directly in the path of ocean currents pouring into the Caribbean Sea through the Anegada Passage, the deepest opening in the entire 2,400-mile-long West Indian island barrier. Buck Island, lying as it does off St. Croix's northeastern shore, receives the full effect of these nutrient-laden Atlantic waters.

2. Geography and Geology

At first glance, Buck Island looks like many of the other American and British Virgin Islands of about the same size. Most West Indian reefs are fringing reefs — the reef corals grow close in along the shore or in small patches nearby. Buck Island, however, possesses a magnificent offshore reef that surrounds the eastern half of the island in the form of a continuous coral barrier and shapes a nearly continuous enclosure for a placid, mostly shallow, sand-bottomed lagoon of remarkably clear sea water. Thus the significant part of Buck Island Reef National Monument is that portion which lies underwater, a marine garden.

Buck Island rises from the central portion of a shallow shelf (under less than 10 fathoms of water) that extends 3.5 miles north of St. Croix's northeastern shore and 9 miles northeast of St. Croix's east end. Beyond the shelf to the north, the sea bottom drops off sharply to depths of several thousand feet. Buck Island itself is separated from St. Croix by 1.5 miles of shallow sea less than 50 feet deep. Shallow seas also extend along St. Croix's south shore so that both the north and south shores of St. Croix's eastern section are lined with fringing and offshore reefs. None of these, however, exhibit the compact scale and integrity of those fringing Buck Island.



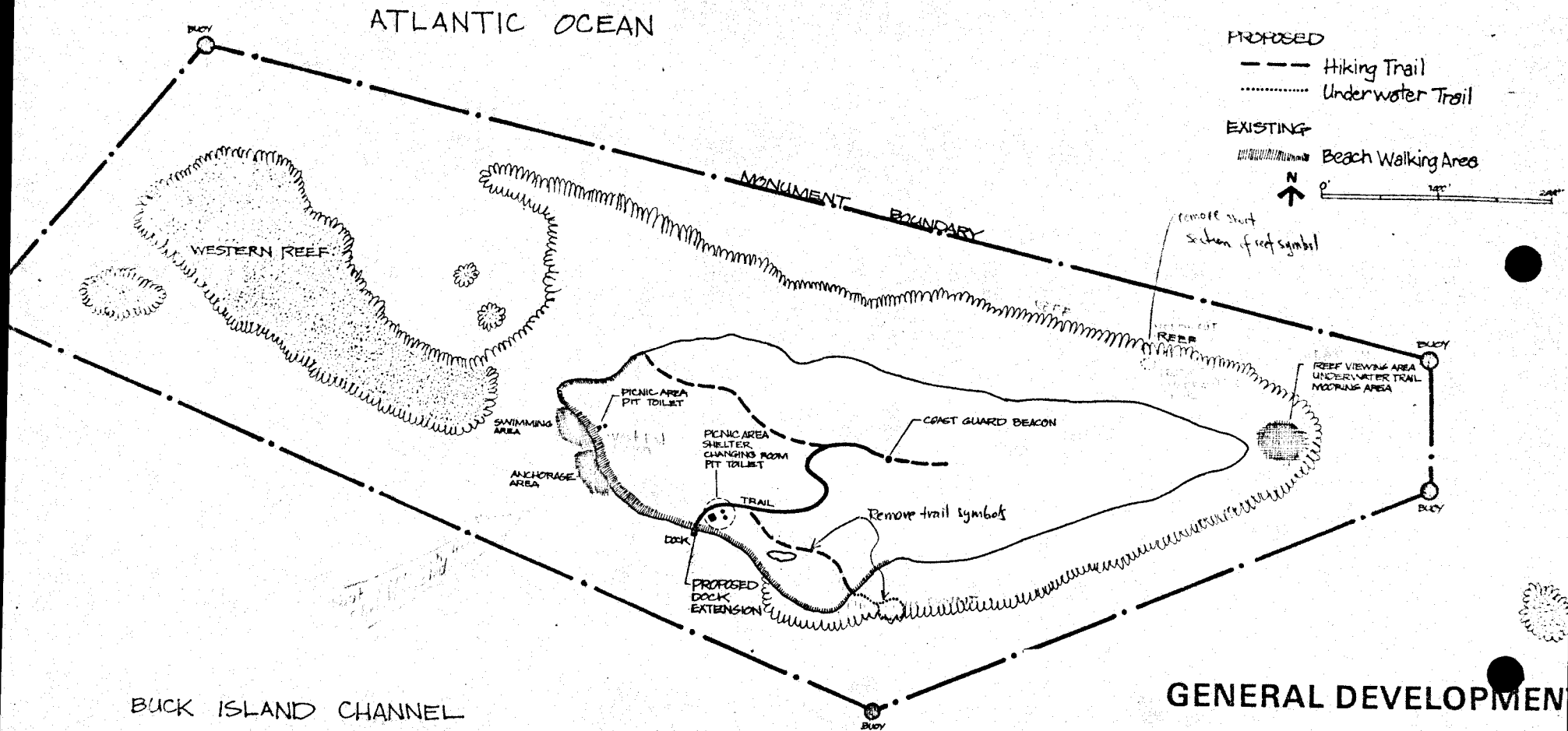
LOCATION

BUCK ISLAND REEF NATIONAL MONUMENT
United States Department of the Interior / National Park Service

G. Interrelationship with Other Projects

The only entity other than the National Park Service that has nonstatutory privileges at Buck Island is the United States Coast Guard. The Coast Guard operates a signal beacon at the highest point of the island, through an agreement between the agencies.

From time to time certain privileges are granted to university-connected research institutions through limited-term collecting permits.



GENERAL DEVELOPMENT

BUCK ISLAND REEF NATIONAL MONUMENT
United States Department of the Interior / National Park Service

F. General Development Plan

All needed facilities were described in the preceding visitor use plan. The General Development map shows facility locations on the island. Scenic aspects of Buck Island will be protected by building very little beyond the existing, small, inconspicuous structures. In addition, a ranger station and residence are proposed to be located on the adjacent shore of St. Croix.

deleted per
Boyd Finch
phone call
of 7/10/79
JSS

Costs of the proposed development are estimated to be:

~~Extended dock (10 feet wide)~~ ~~100 linear feet~~	~~\$ 80,000~~
Construct ~~two~~ new island trails 0.6 ~~2~~ mile	18,000 ~~30,000~~
Improve existing trails 400 linear feet	3,000
Construct St. Croix ranger station/ residence/storage — 2,000 sq. ft.	140,000
Construct underwater trail 0.25 mile — with signing, inter- pretation, rest buoys, and buoyed line from shore to reef	20,000
Construct interpretive markers on Buck Island	5,000
Construction Cost	~~\$278,000~~ 186,000
Gross Cost (46%)	~~\$406,000*~~ 272,000

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Appendix C
p. 59 h

JSS 7/9

*Includes 15% — Project planning
15 % — Project supervision
16 % — Contingencies

Inland hiking: The trail from the dock to the summit of Buck Island will be improved. Interpretive devices will be added so that the trail can be used by school groups under the environmental study program.

At present this trail terminates at a Coast Guard beacon tower located on the high point of the island. It is proposed that the trail be extended eastward about 400 feet to a point where excellent views northward to the pelican and frigate bird areas can be obtained without disturbing the birds. A low viewing platform and/or some vista clearing may be necessary.

It is further proposed that a 0.5-mile branch trail be constructed from the existing trail westward to the beach, ~~(utilizing an old mongoose trapping trail)~~. Benches will be installed at appropriate locations. Over a mile of hiking trails will be provided, exposing the visitor to virtually all of the significant flora and fauna of the island and to sweeping high-angle views of the coral reef. Beach walking can be enjoyed in both directions from the existing dock.

Picnicking: West End Beach receives most of the picnicking use, and this condition will likely ^{continue} ~~prevail even after development of snorkeling facilities and dock improvement off Diedrichs Point.~~ No new picnic areas are proposed, but there may soon be a need for modest expansion of the picnic facilities at West End Beach. The picnic facilities at Diedrichs Point will not be expanded until there is a demonstrated need.

Overnight camping: This will continue to be prohibited at Buck Island.

3. Managing Use

The main task of protection of the environment of Buck Island — its reef and waters — is one of control of human activity. Restraints on visitor use were discussed in the preceding section. Surveillance will be provided by staff personnel on duty within park waters during daylight hours. As visitation increases, it may become necessary to extend the surveillance period to include ranger boat patrols at dawn and/or dusk.

~~Basic to management of Buck Island is the ability of National Park Service personnel to respond speedily to a variety of situations at all hours. To increase Park Service ability to observe and manage Buck Island, this plan proposes relocating Buck Island ranger quarters to the northeast shore of St. Croix. If a decision is made to purchase land for this purpose, legislation will be needed.~~

← delete
#1 7/13

~~A concessions prospectus will be developed for potential use in management of commercial charter operations providing visitor services.~~

← delete
#1 1/13

Studies will be undertaken as needed of visitor use at the existing underwater trail.

The weather is generally mild and pleasant throughout the year. This is principally because Buck Island is a small, subtropical island lying directly in the path of the easterly trade winds.

Daily and even seasonal temperature ranges are small because of the tempering effect of the sea. The mean annual temperature recorded at Alexander Hamilton Airport on St. Croix is 79.7°F, with an average variation of about 13 degrees between summer highs and winter lows. Buck Island temperatures are expected to be a degree or two cooler. Average daytime relative humidity recorded at the airport station varies from 62 percent in March to 73 percent in October, a relatively uniform value. Humidity at Buck Island, closer to the sea, could be expected to be several percentage points higher.

The primary wet season occurs from August through November, and the secondary season during May; minimum rainfall occurs in February and March. Infrequent extreme events such as a stationary tropical depression or a hurricane may result in very heavy rainfalls in limited periods (15 inches in 1 to 4 days). No measurements of rainfall have been taken on Buck Island, but the eastern portion of St. Croix receives as little as 20 inches per year, which probably approximates Buck Island conditions. Evaporation is high due to the continual warm temperature and constant flow of wind.

B. Natural Resources

1. Marine Environment

a. Corals

The coral reef and its associated variety of life forms exists because of a delicate balance of light, temperature, and high water quality. The stony corals that comprise the Buck Island reef and other West Indian reefs are found only where salinity remains consistently between 3.0 and 3.8 percent, where the water is free of smothering sediments, and where oxygen and nutrients are supplied by water in constant motion. Reef growth is found to be best between 15 and 30 feet of water depth.

The Buck Island Reef extends from about the middle of the southern shore around the eastern tip of the island and along the northern shore. There are several small passages through the reef that can be negotiated by boat, the largest near the western terminus of reef along the southern shore.

On the south the reef is approximately 200 feet from the island, forming a discrete lagoon between reef crest and shore with a bottom mainly of white sand. On the north the lagoon is less well defined and is filled with small stands of coral rising to near the surface from 15- to 20-foot depths. Off the northwest the reef consists essentially of a broad area of coral heads approaching the surface from about

10 to 30 feet, although this section is not as dramatic as the other reef areas, and water clarity is typically poorer.

The front of major sections of the reef is one solid stand of elkhorn coral (*Acropora palmata*) that shelves off steeply from the surface to the bottom at about 35 feet, where white sand alternates with coral patches and sea grass. On the lagoon side of the reef the structure is composed primarily of stinging coral (*Millepora alcicornis* and *M. complanata*). Also, there are round heads of brain coral (*Diploria strigosa*) that vary in size from a few inches to several feet in diameter. Several other species of reef corals inhabit the area, notably of the genera *Montastrea*, *Agaricia*, *Isophyllia*, *Porites*, etc.

Elkhorn coral is the most common branching stony coral of shallow water in areas of high wave or current energy on the outer edges of the reef. It occurs attached to hard rock or along the fringing reef crest from just below low-tide level to a depth of 15 to 20 feet. In the most severe energy zones (e.g., the exposed reef crest at Buck Island) elkhorn takes on a heavy blunted-cylinder appearance, oriented parallel to the prevailing wind and wave direction. In deeper areas, or in the lee of the reef crest, the individual colony's appendages are more branched, flattened and spread fanlike at the growing tips. In even less turbulent zones at the base of the reef face or on the floor of the lagoon at Buck Island, more fragile related staghorn coral species are found (*Acropora cervicornis* and *A. prolifera*).

Head-forming or encrusting massive corals usually are found slightly deeper than the elkhorn zone. Several head-forming species are referred to as star corals (*Porites asteroides*, *Montastrea* spp., *Siderastrea* spp.) and others as brain coral (*Diploria* spp.). Typically these occur on the deeper outer reef face or interspersed among the bases of elkhorn colonies on the reef crest. Where these massive corals are growing in very shallow water, they often exhibit a spreading encrusting growth form rather than a rounded head.

Non-stony corals, the majority of which are various species of sea whips, sea fans, and sea plumes (Anthozoa: order Gorgonacea), are a conspicuous element on Virgin Island reefs and hard bottom. In fact, the diversity of these forms in the Caribbean is far greater than in other tropical seas. Their physical flexibility allows them to survive in very high current and wave energies where even elkhorn would be quickly broken. Most species are attached to the substrate with a holdfast that although capable of holding the colony in rough seas, can be pried loose relatively easily by a snorkeler without special tools.

The term "soft coral" does not really apply to these gorgonaceans but should be reserved for another related group, the Alcyonacea. These are flabby, sponge-like growths that are often branched and upright, attached to soft bottom

substrates in deeper water. "Dead men's fingers" is a common name for them. Soft corals are much less common and conspicuous at Buck Island than are the gorgonians noted above.

Growth rates of local hard coral species are not precisely known, particularly as they relate to varying water conditions and depths. Fastest growth in linear dimension and probably volume is seen in healthy elkhorn coral, whose branch ends may grow 2 to 6 inches annually. This fast rate is consistent with the observation that the large majority of coral rubble in shallow water now being broken down and compacted is elkhorn coral. Staghorn (actually *A. cervicornis*) may put on as much as 6 to 10 inches per year, although the volume increase is relatively small. Fire corals (*Millipora* spp.) spread over new surfaces quite quickly in shallow water, but their upward elaboration is only 1 to 2 inches a year. New techniques of live-staining massive coral heads will soon give precise growth rates for brain and star corals, but as a generalization, these grow very slowly. Brain coral heads of some 2 feet in diameter are probably 50 to 100 years old. Some small star corals (*Siderastrea siderea*) growing on concrete blocks of known age on nearby St. John have spread at the rate of about 0.5 inch per year.

It is apparent that many of the reefs in the Virgin Islands, which are composed of accumulations of coral debris and compacted fragments 20 to 50 feet thick, represent many hundreds of years of growth. However, it is likely that many of the conspicuous individual coral colonies now growing on shallow, hard rock bottom (especially elkhorn) represent only some 40 years of growth, since the last major hurricanes swept the islands in the 1920s and '30s.

Certain environmental processes seem to have widespread effects on coral growth and health. Severe storms and hurricanes exert tremendous wave energies on exposed reef crests, and destruction of elkhorn coral stands in single storms can approach 100 percent. Massive coral heads generally fare better, but those with poorly attached pedestals may be overturned. Coral heads and rubble weighing up to 80 to 120 pounds may be moved 50 to 100 yards across an inner reef flat, crushing delicate finger corals (*Porites porites*) and dislodging sea fans. Temporarily lowered salinity, which results from flooding during severe storms, may set back or kill outright some coral colonies; where turbid water or land slumping on an adjacent shore deposits heavy layers of silt and debris on coral, the colonies may not survive. Sand normally lying adjacent to a reef may be shifted, forming drifts 2 to 3 feet deep over coral heads, abrading the surface and rapidly killing the submerged portion.

To a lesser (but not easily measured) extent, smaller storms, normal heavy winter ground swell, and locally generated wind waves are responsible for similar damage.

Massive coral heads appear less susceptible to physical wave damage than the faster growing shallow-water *Acropora* species. Because massive coral heads are closely attached to the substrate, they may suffer more from direct abrasion and deposition of sediment stirred up from the bottom. They seem also to have relatively efficient mucous-producing abilities that are important in trapping deposited sediment and collecting it. Where coral heads are growing very close to the surface, it is possible that layers of fresh water from flooding or exposure during extraordinary low tides will cause the death of the head's upper surface.

Scrape marks left by feeding fishes (predominantly parrotfishes, Scaridae; and surgeon fishes, Acanthuridae) are fairly common, but usually fill over without successful invasion by algae. Some experts suggest that feeding by these fishes on living corals is much less common than on nonliving algae-infested surfaces. This appears true at least at the Buck Island underwater trail areas, where the incidence of scrape marks on living coral is less than would be expected from the large number of parrotfish and surgeons constantly (and audibly) feeding during daylight hours.

Within the heavy visitor-use area, physical damage occurs when inexperienced snorkelers try to use the coral for handholds or footholds. Wastes discharged in park waters also have presumed adverse impact.

It is important to recognize and distinguish visitor-related damage from natural processes of reef growth. Destruction and fragmentation of individual colonies and subsequent cementation into the advancing reef platform are of course prerequisite to long-term reef growth and are, therefore, natural, dynamic attributes of a healthy, active reef complex.

It is believed that this reef is in essentially pristine condition. Probably the major threats to the resource lie beyond park boundaries. Two sewage outfalls from Christiansted have damaged coral reefs closer to the city, demonstrating the low amplitudes of tolerance that characterize coral. Because of Buck Island's location northeast of St. Croix and favorable easterly tradewinds and currents, the monument is not affected by pollutants discharged from St. Croix. Dredging stirs up the substrate, which in turn can settle out and smother a reef. Though these threats are not presently critical around Buck Island, regional development could bring such factors to the forefront.

The area is presently affected by four avenues of pollution: Oil, sludge, litter, and debris discharged from tankers, cruise ships, and other watercraft, as well as that drifting in from islands further east, deposit pollutants within monument waters. Oil slicks have caused damage at the monument where deposits mix with rock and sand along shores or beaches. Pollutants from watercraft within the monument and air pollutants are not quantified.

1977

A photo study (1971-1975) of coral injury and regrowth was completed by Buck Island ranger Richard Littlefield. The study demonstrated the ability of healthy coral, *Acropora palmata* in this case, to generate new growth at a fairly rapid rate. General observations to date have confirmed the ability of most healthy coral species to repair nonrepetitive visitor-related damage in a minimal length of time (several months to a year). However, two locations within the East End Underwater Trail failed to show significant signs of recovery. These were brain coral formations (*Diploria* spp.) used as resting platforms by snorkelers. Recovery at these locations cannot be expected so long as they continue to be used as resting platforms.

b. Other Reef Organisms

The invertebrate fauna associated with the reef is notably lacking in the gorgonians (sea fans, sea whips, etc.). Fewer than a half dozen species are represented in the area, and these by a few colonies only. Several types of sea anemones (including, *Stoichactes*, *Palythoa*, and *Zoanthus*) are extremely abundant and colorful, sometimes forming extensive soft mats over hard bottom, lending variety to the sessile sea fauna.

The larger invertebrates include the well-known pink or queen conch (*Strombus gigas*), the whelk (*Cittarium pica*), and the spiny lobster (*Panulirus argus*). Crevices of the coral are inhabited by the long-spined sea urchin (*Diadema antillarum*), the smaller black urchin (*Echinometra* lacunata), and a variety of burrowing, boring, and otherwise hidden animals including worms, mollusks, and crustaceans. Many species of algae — red, brown, and green — are conspicuous on dead parts of the reef and form important species groups on deeper sandy flats.

lacunata

The spiny lobster is said to have been noticeably more abundant in years past, but supporting information is not available. The whelk and queen conch are under heavy pressure from fishermen and souvenir hunters and possibly face endangered population levels.

c. Fishes

The fishes of Buck Island are typical of the Lesser Antilles West Indian area, which in general is less diverse and more homogeneous than the varied reef fish fauna of the Indo Pacific region. ~~No fish species is known to be endemic to Buck Island, nor is it likely that any endemic fish exist. From the perspective of the nonspecialist,~~ the reef area contains many of the colorful and conspicuous species that have territories or feed along reefs and allow for close approach by snorkelers. Most conspicuous and numerous are the surgeon fishes (*Acanthus coeruleus* and *Actanthus bahianus*), a variety of parrotfishes (*Scarus* spp.), and porgies (*Sparisoma* spp.), wrasses (*Halichoeres*), blue tangs (*Acanthurus coeruleus*), and demoiselles (*Chromis Eupomacentrus*, *Microsphodon*, and *Abudefduf saxatilis*). Others less conspicuous along the reef are the cardinal fishes (*Apogon*), gobies (*Coryphopterus*), and eels

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(*Gymnothorax*). Large groupers (*Epinephelus*), jacks (particularly *Caranx ruber*), and snappers (especially *Ocyurus chrysurus*) are common about the reef, but these are generally offshore nonterrestrial species that move over large areas. Other open-water populations of sport and food fishes such as snapper, mackerel, and barracuda also are seen in the lagoon and outside the reef edge. Occasionally shark, porpoise, and tarpon are seen in park waters.

d. Turtles

Three species of turtle can be observed within monument waters: The hawksbill (*Eretmochelys imbricata*) and leatherback (*Dermochelys coriacea*) are listed on the federal endangered species list; the green turtle (*Chelonia mydas*) also can be found in the area. Occasionally these turtles are seen swimming within the underwater trail in the early morning and evening hours. More frequently they are observed in waters along the south shore outside the barrier reef.

2. Beaches and Shores

Near the center of the island's south shore is Diedrichs Point, a low-lying sand deposit that bulges seaward from the volcanic hillside. A small rain-fed salt pond is located at the juncture of this deposit with the bedrock hill and, except along the ocean, the point is covered with vegetation unusual for the rest of the island. Another fairly level area of about 10 acres is located on the western tip of the island, and the sandy Turtle Beach extends about 1,000 feet south and east from there back toward Diedrichs Point. A sequence of aerial photographs shows that over the past 15 years sand has been eroding off Buck Island's western tip and accumulating along Turtle Beach, and in general it is obvious that this beach is showing both annual and longer term dynamic changes. This beach is the landing nearest in approach from Christiansted. Off Turtle Beach the sea is free of obstructions, has a sandy bottom, and is suitable for anchoring small boats.

During nesting periods, sea turtles (hawksbill, green, and leatherback, in approximately that order of abundance) crawl onto Turtle Beach at night to lay their eggs, using about the same beach area that is used by visitors during the day. Some 15 nestings occur annually from April through September. From 20 to 50 ping-pong-ball-sized eggs are laid in a hole 18 inches deep, the top egg about 10 inches deep. The eggs require approximately 60 days to hatch. Each female may nest two or three times per season, perhaps even on successive nights. Mating with male turtles in nearshore waters takes place during the same general time period, although it is apparently the eggs of the following year's nesting that are fertilized. The nests are generally placed high on the beach above the area of greatest visitor use. The nest hole is steep-walled and the top opening smaller than the egg depository; the eggs are tough and flexibly shelled — even if the sand over the eggs is stepped on, they are not likely to break. The turtles leave "crawl tracks" in nesting, but they do disguise the actual mouth of the nest hole fairly well. Special early morning patrol efforts are made during

the nesting season, and evidence of the crawl and nest hole is usually further obliterated by ranger staff. Visitors have not had a pattern of interest in searching for nests, although there have been problems with poachers coming just for that purpose. Lights on the beach during nesting attempts would discourage the turtles, but no overnight use is allowed.

The relatively low number of total nestings per season at Buck Island is consistent with the general pattern of isolated individual nesting throughout the northern Caribbean, where no mass nesting beaches are known. In fact, the number of annual nests on the short Turtle Beach may be relatively high compared to nearby beaches on St. Croix, where nest disturbance and egg collection have been more common than at Buck Island since the establishment of ranger patrol.

The ghost crab, (*Ocypode quadrata*) digs his burrow at the edge of the sea, and shorebirds such as the little blue heron (*Florida caerulea*) are seen feeding here. Most species of vertebrates — birds, mammals, reptiles — found in the inland hillside ecosystem are also occasionally found along the beaches.

Other than the beaches already described, the shoreline of Buck Island is gravelly or rocky, the land falling steeply into the sea on the island's eastern two thirds. Seagrape (*Coccoloba uvifera*) and other prostrate plants border much of the beach. Behind this low growth, stands of manchioneel (*Hippomane mancinella*) mixed with coconut palm (*Cocos nucifera*) — planted in the 1950s or taking root after washing ashore in storms — and other trees cover much of the two low benches. The presence of manchioneel with its poisonous sap and fruit places some constraints on the recreational value of the level land on the island. The understory here is thin, however, and it remains a pleasant area in which to watch birds, lizards, and crabs.

This shoreline zone receives a high degree of use within the park at the beach, approximately 500 yards long, and two small picnic areas under the adjacent manchioneel forest. Diedrichs Point picnic area includes rest rooms and rainshelter; most visitors, however, use the picnic area at West End Beach, with its single rest room but no rainshelter. The disturbance created with the ecosystem by these activities at both locations is limited to cleared areas around the 10 picnic tables, changing stalls, 3 outside pit toilets, 10 charcoal grills, and a picnic rainshelter attached to a ranger cabin. Because of thorn shrub and sand burrs, visitors do not move very far from these developments.

3. Land Ecosystem

The upland part of the island is of interest in itself and as a backdrop for the reef and lagoon. Buck Island is 6,000 feet long in an east/west direction, 2,200 feet wide at its widest, and rises in a single east/west ridge to an elevation of 340 feet. The island consists of about 176 acres of mostly steep topography — 90 percent of the

slopes are over a grade of 30 percent. Soils are very thin. Much of the north and east shoreline is backed by rocky cliffs.

There is no known yardstick in adjacent islands to determine vegetative cover for Buck Island prior to disturbance by nonaboriginal man, yet it may be assumed that the present flora differs from pre-Columbian times, as the island undoubtedly was cut over to produce charcoal, to obtain timber, and to provide browse for domestic goats. The island generally exhibits landforms and vegetation commonplace in the Virgin Islands.

The steep slopes of the major portion of the island are covered with a low scrub mixed with cactus and grasses. On the driest rocky slopes, the turkshead cactus (*Cactus intortus*) predominates, tilted in strange growth postures. Further up the dry slopes, a large prickly pear cactus (*Opuntia dillenii*) and tall branched dildo cactus (*Cephalocereus royenii*) grow year round amid low shrubs and grasses. The two most prominent grasses during periods of extended rainfall are tall bunches of the exotic guinea grass (*Panicum maximum*) and the finer-stalked hurricane grass (*Bothriochloa pertusa*). This xerophytic cactus shrub forest also includes an orchid (*Epidendrum bifidum*), a large air plant or bromeliad (*Tillandsia utriculata*), and another air plant known locally as old man's beard (*Tillandsia recurvata*). This shrub forest also includes acacia (*Acacia tortuosa*), tan tan (*Leucanena glauca*), tamarind (*Tamarindus indica*), turpentine (*Bursera simaruba*), milky tree or wild frangipani (*Plumeria alba*), capper tree (*Capparis cynophallophora*), torchwood (*Amyris elemifera*), and fiddlewood (*Citharexylum fruticosum*).

Lizards are the most abundant form of vertebrate wildlife in the interior habitat. The common tree lizard (*Anolis acutus*) can be seen both in the bushes or along the ground. It is a delicate lizard with the ability to change color, in the same scientific genus as the familiar American (false) chameleon.

Next in abundance are the birds, with the two species of dove the first to be noticed because of the noise they make when flushing from the maze of vegetation. The Zenaida dove (*Zenaida aurita*) and the smaller ground dove (*Columbina passerina*) complete the group. The darting emerald-throated hummingbird (*Sericotes holosericeus*) is often seen flitting or perched among the shrubs. As many as 40 other species have been reported seen on the island with the banana quit (*Coereba flaveola*) being the most abundant resident species. The most unusual species to be flushed from the dry hillsides is the chuck-wills-widow (*Caprimulgus carolinensis*) and, near the shoreline, the yellow crowned night heron (*Nyctanassa violacea*).

A bird-nesting rookery is located on the northeastern slope of Buck Island. Of prime importance is the endangered brown pelican (*Pelecanus occidentalis*). As many as 55 nests have been counted in June and July during the peak nesting

season, with an additional 10 to 20 nesting sites outside this compact rookery but in the general area.

The magnificent frigate bird (*Fregata magnificens*), 50 to 75 in number, roosts beside the pelican rookery, although it does not actually nest on Buck Island. Droppings from these birds kill the vegetation under the trees and eventually weaken or kill the trees themselves. Strong winds pile up tangles of fallen trees, and the rookery is apparently shifting in a westward direction along this north slope.

Other wildlife includes the soldier or hermit crab (*Coenobita clypeata*), which vacates one seashell to move to a larger one as it grows, and exhibits an annual egg-depositing migration to the sea from its inland habitat. There are also some larger land crabs (*Cardesoma*) and large millipedes. Exotic rats known locally as the tree or fruit rat (*Rattus rattus*) and introduced mongoose (*Herpessomys javanicus auro-punctatus*) are on the island. The rat is nocturnal but can be flushed from abandoned bird nests and other hiding places in the vegetation. The mongoose is diurnal and subsists on a varied diet of insects, lizards, and even vegetable material. Repeated attempts to eradicate the mongoose have not proved successful, and populations rebuild quite rapidly if trapping pressure is removed.

A major ravine or gut located on the south slope feeds into the brackish-water pond on Diedrichs Point. This gut is crowded with large mature genipe (*Melicoccus bijugatus*), manchioneel, and turpentine or gumbo limbo (*Bursera simaruba*). The species of wildlife remain the same. Here some water collects in the bowels of hollow tree trunks, and the soldier crabs gather en masse, providing a feast for the occasional passing mongoose. The brackish-water pond, with its border of mangrove, is frequented by herons, sandpipers, and stilts.

A large gut on the northwest side contains many large tamarind trees (*Tamarindus indica*), an exotic in the West Indies, probably introduced by early inhabitants for shade and possibly to create a source of honey. On the north slope the dry forest is made up of mature turpentine, tamarind, genipe, and manchioneel. These cover a tangle of thorny shrub, cactus, and air plants. The pelican rookery is located in this type of growth on the northeast side of the island.

Prior to establishment of the national monument in 1961, local permits were issued to graze goats on Buck Island. Quantitative information is not available to determine terrestrial conditions prior to grazing. Because of this, effects of grazing on this resource have not been determined.

4. Endangered or Threatened Species

~~Insufficient research data is in hand to identify and describe all rare, endangered, or threatened species.~~ The spiny lobster is said to have been noticeably

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Buck Island is a nesting site for ^{four} ~~two~~ species of turtle that are listed on the Federal Endangered ^{and Threatened} Species List: the leatherback (*Dermochelys coriacea*) and hawksbill turtle (*Eretmochelys imbricata*) have been listed as endangered since 1970; the green turtle (*Chelonia mydas*) and loggerhead turtle (*Caretta caretta*) were listed as threatened in 1978 (Federal Register, January 17, 1979).

Ameiva The status on Buck Island of the endangered St. Croix ground lizard (*Ameiva* ~~polops~~) is uncertain. Although this species may never have occurred naturally on Buck Island, individuals were introduced in the early 1970's. The action was originally thought successful but recent surveys have been disappointing.

(Federal Register, January 17, 1979). The brown pelican (*Pelecanus* ~~Pelecanus~~ *occidentalis*) is endangered. It resides in a rookery on Buck Island, the only one of its kind in the St. Croix area.

more abundant in years past, but supporting information is not available. The whelk and queen conch are under heavy pressure from fishermen and souvenir hunters and possibly face endangered population levels.

~~Buck Island is a nesting site for two species of turtle that are listed on the Federal Endangered Species List, the leatherback (*Dermochelys coriaca*) and hawksbill turtle (*Eretmochelys imbricata*). The green turtle (*Chelonia mydas*) and loggerhead turtle (*Caretta caretta*) are being considered for addition to the list. The ground lizard (*Amewa poleps*) is extinct on the island. The brown pelican (*Pelicanus occidentalis*) is endangered. It resides in a rookery on Buck Island, the only one of its kind in the St. Croix area.~~

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p. 28 a)

~~Of the plant species located on Buck Island, stinging bush (*Malpighia pallens*) is the only species listed on the "Report of Endangered and Threatened Plant Species of the United States," Smithsonian Institution, Serial No. 94 A, 1975. It is endemic to Buck Island and St. Croix, and is being considered for endangered or threatened status (Bruce McBryde, USF&WS, personal communication, June, 1979).~~

one word

C. Historic and Cultural Resources

The national monument contains three known cultural sites, none of which is listed on the National Register of Historic Places. A March 1976 archaeological survey of Buck Island recommended two sites for nomination to the register — the Diedrich's homestead and the aboriginal west-end site. The three sites (see Cultural Resources map) are described as follows:

1. The Prehistoric Site

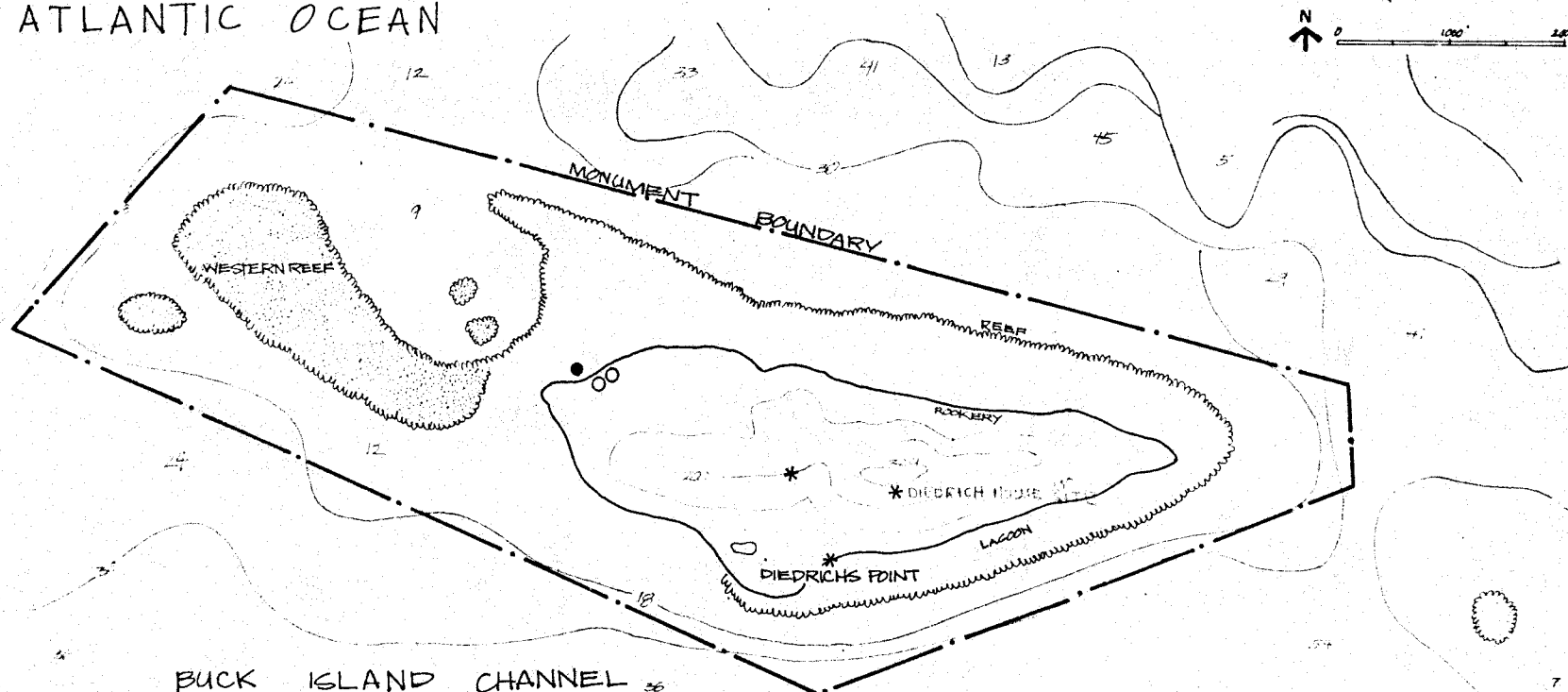
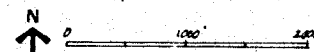
This site is located on the northwest tip of the island and is approximately 0.5 acre in size. There is no observable midden deposit, although a large quantity of ceramics has been collected by park personnel, who periodically remove artifacts exposed at this beachside site by the ocean. Collections indicate the site can be attributed to the Arawak; it may be a fishing site, but its function cannot be delineated without excavation. The ceramic artifacts level lies under 2 feet of sand. A major feature on the surface, and thus younger than the ceramic level, are four piles of coral, apparently man-made. These may have been stockpiled in connection with attempts at production of lime for mortar, in which case this part of the site would be historic instead of prehistoric. Two of the mounds are located on top of the aboriginal site and are being undercut and destroyed by wave action.

2. The Diedrich's Homestead

Located along the ridgeline of the island, this site contains the remains of a house, trash dump, and a possible privy belonging to Mr. Diedrich, who built on Buck Island around 1793. He occupied the location for only 5 years because of the problem of fresh water procurement. (There is a well site at the base of the cliffs, near the eastern edge of Diedrichs Point.) Also observable are the remains of a low stone

ATLANTIC OCEAN

- * Ruin
- Coral Mound
- Aboriginal Site



CULTURAL RESOURCES

BUCK ISLAND REEF NATIONAL MONUMENT
United States Department of the Interior / National Park Service

current date 12/20/77

wall, which may have terraced off the top of the hill on which the house was built. The house remains consist of a stone foundation that supported posts and formed an aboveground cellar. The site is in no danger of further deterioration for the near term.

3. The Shipwreck

This resource, not recommended for nomination to the National Register, lies off the northwest corner of Buck Island in approximately 17 feet of water. A considerable wooden structure still remains. No ballast rock was located; however, large amounts of coal were located with the remains of the hull. Several coal chunks measured 2 feet by 1 foot by 1½ feet, leading to the conclusion that this may have been a mid- or late-19th-century coaling ship bound for St. Croix. The remains did not appear much disturbed by salvage attempts and should be considered for protection. There is a possibility that two other wrecks may be located in monument waters.

All of the above sites have good potential for on-site interpretation.

The island, with the exception of a signal tower at the high point and the dock at the shore, retains the essentially natural character that Columbus quite likely viewed in 1493 as he approached a landing on the nearby north shore of St. Croix.

D. History

The turbulent history of the West Indies has had little visible effect on Buck Island. Arawak and/or Carib Indians appear to have inhabited the island, but little more than broken ceramics mark their presence. The Spanish, after a first sighting of St. Croix by Columbus (and a repulse by the hostile Caribs), paid little attention to any of the Lesser Antilles. Other nations moved in, beginning with the English and Dutch. The French came next, but eventually sold out to the Knights of Malta. Denmark held St. Croix the longest, through nearly 200 years of prosperity and poverty (1733 to 1917), when the Danish Islands (including Buck Island) were purchased by the United States. During the 1920s Buck Island was leased for goat raising. This use, plus occasional visits by fishermen and beach users from mainland St. Croix, was all the attention the island received until swimmers with face masks began to seriously explore the reef and came to appreciate its unique and spectacular nature.

E. Legislation and Constraints

Under the act of Congress of June 22, 1936, (appendix A), Buck Island was placed under control of the Government of the Virgin Islands with legal title remaining in the United States. After some years, local government recognized the island's recreational and natural values and, by ordinance in 1948, established Buck Island Park. Appreciation of the island spread, and Presidential Proclamation No. 3443 dated December 28, 1961 (appendix A), established Buck Island Reef National Monument to

provide that "Buck Island and its adjoining shoals, rocks and undersea coral reef formations" and marine life therein be protected from further despoliation and commercial exploitation since "it is in the public interest to preserve this area of outstanding scientific, aesthetic and educational importance for the benefit and enjoyment of the people." Within the proclamation are included the constraints declared by the Government of the Virgin Islands in Session Laws No. 800, approved December 5, 1961. This provided a specific condition to be met prior to relinquishment of control over Buck Island: The agency having administrative control over Buck Island "shall not adopt or attempt to enforce any rule, regulation or requirement limiting, restricting or reducing the existing fishing (including the landing of boats and the laying of fishpots outside of the marine garden), bathing or recreational privileges by inhabitants of the Virgin Islands, and shall not charge any fees for admission to the area."

Presidential Proclamation No. 4346 dated February 1, 1975 (appendix A), provides that 30 acres of submerged land and water be added at the east end of the monument to ensure proper care and mangement of the marine resource.

The influence of enabling legislation allowing consumptive use is not fully known. The potential for overexploitation exists within the park, in that scarcity of marine life in adjoining waters has been evident for several years.

There are approximately ¹⁸~~10~~ commercial operators, using ⁵⁰~~25~~ boats, providing service to monument visitors. During the winter season, additional operators provide similar services. Commercial operations are ~~not~~ administered under ~~any form of use permit~~.

F. Visitor Use

1. Relation to the Resources

The island receives a growing number of visitors who seek enjoyment of both the underwater experience and sailing and boating. The national monument fills an important recreational role for the St. Croix community and for visitors from outside the region. As the marine and terrestrial environments are increasingly ~~disturbed by unprecedented~~ ^{altered} real estate development along the shores of St. Croix, the significance of Buck Island Reef will grow accordingly.

Tropical waters such as those of Buck Island Reef offer a unique opportunity to humans normally bound to the world of air and dry land. These seas invite the willing guest to sample a new environment in relative comfort and safety. Immersed in ^{warm and sheltered} ~~the temperate~~ waters of this tropical lagoon, and stimulated by light and color, it is easy for people to become attuned to nature.

There are also educational benefits to be gained from viewing the beauties of the coral garden and understanding the relationships of living things with their environment. Additionally, the island's beaches, shady groves, and trails provide places for the simple pleasures of sunbathing, picnicking, and hiking.

These resources and uses have certain characteristics that set the frame for this general management plan:

^{Marine}
~~Sea~~ resources are foremost; land resources secondary.

The average visitor spends only a few midday hours in the park. (Nonlocal visitors average 4.5 hours, local visitors 6 hours.)

Services and supplies are mostly transported from St. Croix for the day. Much of the waste material returns on the same boat; remaining trash (deposited in receptacles) must also be transported to Christiansted.

Appreciation of the underwater resources of the monument requires that visitors ~~actually enter~~ ^{or use a glass bottomed boat} ~~get into the water, or~~ use a viewing device to see beneath the surface.

The offshore reef that creates the attraction places severe restraints on the passage and anchorage of boats.

^{marine}
The ~~sea~~ resources are an attraction to visitors and to those who would consumptively use them, making at least some protective measures a necessity. Protective measures will mainly involve suitable restraints.

The attractiveness of Buck Island relates principally to the ease, dependability, and safety with which a very high-quality example of a Caribbean coral reef can be observed, even by novices. This attractiveness is enhanced by the juxtaposition of the reef with a short but equally high-quality ^{for recreational use} sandy beach where lifeguard and ranger protection is usually available. Further positive considerations include relative closeness to population and tourist-facility centers on St. Croix, protected anchorages, and (for charter or ferry visitors) generally polite, informative, and entertaining treatment by the private sector providing visitor services.

2. Developments

A self-guiding underwater nature trail is currently available on the eastern island tip. Another (not presently in use) had been located off Diedrichs Point, where there is presently a dock. Picnic tables and rest rooms are also provided (see General Development map).

3. Typical Visits

At present a typical visit to Buck Island involves a boat excursion from St. Croix and a brief introduction to the use of snorkel gear in the shallow waters adjoining the sandy beach or near the charter boat; then, moving by boat to the coral reef adjacent to the East End Underwater Trail, swimming over and viewing the trail, returning by boat to West End Beach for swimming and sunbathing, and returning to St. Croix by midafternoon.

Persons without private boats can buy round-trip passage on ~~one of two~~ ^{to \$20} privately operated ferries for less than \$10, or on a number of charter boats for approximately \$15. Boat companies and individual operators provide half- or full-day charter trips to Buck Island year round, with an increase in the fleet during the heavy winter tourist season. The operations represent ^{18 operators} ~~10 independent enterprises~~ ⁵⁸ (17 vessels) whose income, ^(at least in part) is derived from charter trips from Christiansted to Buck Island. In ~~addition, seven other~~ commercial operations ~~(8 vessels)~~ provide charter service on a sporadic basis throughout the year, intensifying in service during the peak tourist season. Prices vary according to nature and length of trip. ~~To date, no attempts have been made to restrict this type of use under permits. The whole trip will take 5 or 6 hours;~~ midday is the ^{best} ~~best~~ time because the high angle of the sun improves underwater visibility.

Some of these

The ~~simplest~~ visit may be accomplished in half a day, ^(5 or 6 hours) ~~midday again being favored.~~ The trip is typically extended in the case of the small charter boat operators by staying at the sandy beach on the south and west shores or by viewing, on foot, the vegetation and birdlife on the island. A trail to the top of the island provides an opportunity to observe wildlife and gives an excellent high-angle view of the reef. Some scuba-diving is done in the area north and east of the island that can be reached by boat by continuing within the lagoon around the eastern tip of the island.

^{A proportion} ~~Another, smaller segment~~ of visitors arrive in private boats, usually stopping over during an extended cruise of the Caribbean. They follow no set pattern but generally spend no more than a day in the monument. Some anchor overnight. They may ~~or may not~~ use the underwater trail; most are interested in enjoying the beach and the solitude. Residents of St. Croix boat to the beach area of Buck Island for recreation because of the limited number of open beaches on the large island. Native Cruzans also fish in park waters, which traditionally includes setting fish traps. Occasionally there is an attempt by local people to camp overnight (not permitted) on the island.

Seashells and drift are allowed to be collected at the beach since this activity has little adverse effect on the ecosystem.

4. Problems

underwater trail

During peak-use periods, 23 boats have ^{as many as} used the 11 moorings ^{been observed using} of the eastern simultaneously, resulting in congestion and safety hazards. ^{Sometimes} As many as three boats have been tied end-to-end on a single mooring, swaying in a wide arc that was dangerously close to boats on other moorings and snorkelers in the water. Under these conditions, access is difficult for snorkelers, who are forced to swim around several boats to arrive at the trail. Additionally, the ability of boats to ^{leave the first row of moorings} is hampered ^{in the mooring area} by the increased congestion. Apart from safety, there is a great potential for damage to corals along the trail with such high concentrations of use.

Overuse of the west end ^{beach} anchorage area is not yet serious, but there is an obvious potential for crowding as use increases. Space exists for additional anchorage farther off the West End Beach area, ^{suggest that caution should be exercised in} but the size and configuration of the lagoon ~~is such that there is little space for~~ spreading use to avoid congestion in the east end reef viewing area. Reefs on the north and west provide opportunity for additional underwater use, but no facilities for boats or swimmers are available at these locations. A significant increase in ^{uncontrolled} boat use of those areas would accelerate destruction of coral formations as a consequence of attempts to anchor over the reef.

5. Protection

Excessive exposure to the sun is a major hazard affecting people using the area. Add to this scratches from coral, wounds from sea urchin spines, and skin irritation resulting from contact with sap of the poisonous manchineel tree. Interpretive signs identify the tree and warn of its potential danger. Park personnel also warn visitors of hazards associated with this tree. Occasionally visitors are still exposed and require first aid or medical attention.

The many potential safety and health hazards require vigilant efforts by park personnel to alert visitors prior to use of the underwater trail and associated marine environments. There is no record of shark attack.

Presently the supervisory ranger for Buck Island is housed approximately 3 miles southwest of the historic site in Christiansted, i.e., in the interior of St. Croix out of sight of the monument. Reports of abnormal occurrences during unpatrolled hours at Buck Island generally are received by telephone from residents living directly across from the island. Response time from the National Park Service housing to Buck Island can take as much as 1½ to 2 hours, depending upon availability of personnel, weather conditions, and time of day. In general, ranger and/or lifeguard service is provided 5 to 7 days a week (consistently on weekends) during favorable weather.

Typically, reflecting the running time and daily boat preparation/maintenance chores, ranger presence at Buck Island is provided only from

9:30 a.m. to 2:30 p.m. unless special visitor activities are anticipated. Most visitors confine their visits to this time frame also. Most commercial fish-trap tending takes place in the early morning hours, before the ranger staff arrives.

6. Trends and Characteristics

The national monument, which has been a unit of the National Park System since 1961, has grown so rapidly in visitor interest that it is now a major attraction in this part of the Caribbean. For the first few years visitation doubled nearly every 2 years. Between 1967 and 1971 the number of visits doubled again, reaching 59,200 in 1971. However, during 1972 the rate slowed so that the number of visits for that year (61,146) was only slightly more than for 1971. Visitation to the Virgin Islands in general and to St. Croix in particular declined dramatically in 1973 and 1974. By 1975 the trend was again upward, and this continued in 1976, ^{has} ~~although~~ ^{and} visitation to Buck Island did not exceed the previous record.

24 stats
for 78 &
179 to date

In the early 1960s visitation was concentrated in winter and early spring with another, smaller peak in summer. In recent years visitation has tended to even out over the year, although December, January, February, and March continue to be the months of heaviest use. A few boats (mostly local) anchor overnight at Buck Island, but their impact on park resources is negligible. The number of people staying overnight on boats within the monument has not been large: 1,400 were recorded for 1972, 900 in 1975, and 800 in 1976.

Prior to 1976 it was uncommon to have more than a few days during the peak visitor season (winter) when the 11 moorings at the underwater trail were utilized to capacity. National Park Service statistics show a 33 percent increase in visitation at Buck Island in 1976 (48,000) over 1975 (36,000). Similar increases in tourism are occurring throughout St. Croix. The increase in use has obviously affected the demand for available moorings and created an increased impact by snorkelers on the underwater trail.

November 1, 1975, through April 30, 1976, showed that there were 79 days in which the capacity of the 11 moorings was exceeded.

[update]

Visitors coming from outside the region are mostly from the northeastern United States. A large proportion of outside visitors are members of groups for whom a visit to Buck Island is but one part of a tour covering a number of stops. Many, however, are couples and families on nonpackage vacations divided between St. John, St. Thomas, and St. Croix. The average time spent in the monument is about 4 hours. Snorkelers are typically the young, although many of the older people easily adapt to the simplified snorkeling instruction available through the charter boats. Some visitors merely go along for the ride or observe the reef resources through a viewing device while remaining in a boat. Options open to those who elect to

use a charter boat are relatively limited: the time schedule is fixed, and the party must generally stay together while in the monument. Ordinarily, tourists visit Buck Island only once during a stay in St. Croix. The people of this ~~outside~~ tourist-visitor segment are from the middle and upper strata of the socioeconomic scale.

7. Local Use

Buck Island's reef and beach are still the most widely known recreational resource available to residents in the St. Croix area, although use of territorially developed parks is increasing. In particular, Buck Island remains a major destination for St. Croix sailing and motor-boating enthusiasts. These people come to snorkel, use the beach, and picnic, mostly on weekends, because of the limited number of publicly accessible, patrolled beaches on the large island. Local fishermen also use the waters west of the island (as provided for in the monument's enabling act) to set fish traps, hand-line fish, and take lobsters. Local people, including clubs and organized groups, are obviously the most likely to make repeated visits to the monument. Almost all such use is confined to daylight hours — typically 10 a.m. to 3 p.m. — since no overnight camping is permitted on the island. Private or privately chartered vessels — sail or motor — are permitted to anchor overnight in monument waters, although this practice is not common.

Buck Island visitors who are St. Croix residents represent mainly the upper and middle portions of the socioeconomic scale since availability of the park is necessarily limited to private boat owners and those who can afford the cost of commercial transportation.

At present there is no private or public access mode whose cost is low enough (apparently) to attract many local St. Croix residents in the lower income brackets. However, data on the extent to which such potential users actually desire to visit the monument are lacking. Characteristics of visitors and visitor-use patterns are not documented by surveys, but are based on oral reports and on observations by park staff over a number of years.

G. Regional Park Resources

1. Natural and Recreational Parks

A territorial park system has been established in the Virgin Islands. In addition, all beaches in the Virgin Islands are considered public up to the permanent vegetation line. Access is gained either by boat or over private property with approval of the owner; practically, however, most beaches are not accessible. Consequently, the government is attempting to obtain easements for access over private land by purchase through coastal-zone management funding.

About half of the land area of the island of St. John is presently devoted to public park purposes (Virgin Islands National Park), as are small areas on St.

Thomas and St. Croix. There are seven recreational beaches in public ownership on St. Thomas, only one of which — Magens Bay — is developed.

St. Croix is 40 miles by sea from St. Thomas/St. John and 90 from Puerto Rico. Because of logistics, few residents of these islands visit Buck Island; they prefer to use local, more accessible recreational facilities. On St. Croix there are four developed recreation areas administered by the Virgin Islands Government: The Stony Ground complex is located near Fredricksted on the western end of St. Croix; the waterfront and beach access is available in Fredricksted; Altona Lagoon facility is within Christiansted Harbor; and Cramer Park is on the east end of St. Croix, across the channel from Buck Island. The St. Croix parks are accessible generally by private vehicle and occasionally by boat.

2. Historic ~~Parks~~ Areas

The National Park Service San Juan National Historic Site, a complex of 16th-century Spanish forts, is located on Puerto Rico. In addition, Fort Christian, the oldest structure in the Virgin Island, has been designated as St. Thomas National Historic ~~Site~~ ^{landmark}. This fort is located in downtown Charlotte Amalie and is under the ownership and ^{administration} ~~control~~ of the Virgin Islands Government; except for small exhibit spaces, it is used for nonpark purposes. On St. Croix there is one historical area of the National Park System — Christiansted National Historic Site. A little-known historic area on the north coast of St. Croix is the Columbus Landing Site. Here in 1493, crew members on the famous navigator's second voyage to the New World came ashore briefly.

3. ^{Natural} National Landmarks

Natural areas in the vicinity that are now listed on the National Registry of Natural Landmarks include Mona and Monito Island, off the western tip of Puerto Rico. A study is underway to locate other areas eligible for national landmark status on all three United States Virgin Islands and Puerto Rico.

One area recommended as a potential natural landmark is Green Cay, a well-preserved, 16-acre island on the normal boat route from St. Croix to Buck Island. This cay is ~~critical~~ ^(some) habitat for the endangered St. Croix ground lizard (*Ameiva polops*), lacks the lizard's mongoose predator, and has ^(some) ~~most~~ of the attractive features of Buck Island. It is in U.S. Fish and Wildlife ^(Service) ~~ownership~~, purchased with funds made available under the Endangered Species Act.

Historical areas in the vicinity that are now listed on the National Register of Historic Places are La Fortelaza National Historic Landmark (a Spanish fort of 1533-1540 vintage on Puerto Rico), the Zona Historica de San Juan (public and private structures including a portion of the original city of San Juan), Santuario de la Monserrate de Hormigueros, Casa de Peregrinos, and Iglesia Parroquial de San Pedro Apostol de Toa Baja, all on Puerto Rico.

H. Socioeconomic Environment

Uninhabited itself, Buck Island Reef National Monument lies in a region of very diverse conditions of population and economy.

The British Virgin Islands and others of the Lesser Antilles lying immediately to the east of the United States Virgin Islands are small, moderately populated, and, except for scenery and climate, essentially deficient in economically exploitable natural resources. Populations have decreased over the past several decades on several of these islands. The British Virgin Islands, for example, supported a population of 10,500 in 1970, down from about three times that number at the beginning of this century when sugar production was still important. The United States Virgin Islands, on the other hand, has doubled its population over the last decade (1970 census — 62,468) even though its natural resource base is as meager as those of the other islands. The island of Puerto Rico comprises a land area of 3,421 square miles, far larger than any of the other Lesser Antilles. Its 1970 population numbered 2.7 million, having grown from less than 1 million in the 75 years of United States affiliation.

Various languages are spoken in the region, reflecting the particular nations wielding power during the colonial period. Today English is spoken by virtually all Virgin Islanders and, uncharacteristically, English was the most common language even when the present United States Islands were Danish possessions. Spanish is the dominant language among the people of Puerto Rico and the islands immediately to the west of the Virgin Islands, although English officially holds joint status on Puerto Rico. Dutch, French, and English are spoken on various islands of the Leeward group east of the British Virgin Islands.

Ethnic classification of peoples in the region also differs markedly. On Puerto Rico about 80 percent of the populace is white. In the United States Virgin Islands, in contrast, 72.5 percent are black, 18.2 percent white, and 9.3 percent "other" (1970 census). The ethnic compositions of the British Virgin Islands and of some other of the Leeward islands are similar to those of the U.S. Virgin Islands.

More than half of the population of the United States Virgin Islands immigrated from other places, attracted by a standard of living (and jobs) substantially higher than any non-United States possession in the Caribbean. This situation is unique in the region in that both Puerto Rico and the British Virgin Islands have experienced emigration rather than immigration. The rapid influx of immigrants, many of whom continue in alien status, is responsible for some substantial and continuing social and economic readjustments within Virgin Islands society. It is possible that this factor has at times negatively influenced tourism.

Agriculture, principally sugar production, which once sustained the economics of much of the West Indies, has declined to the point that on many of the

small islands such activity is nonexistent. Tourism has become the dominant industry, although participation by various islands differs.

Industrial development has been promoted to spread the economic base. The United States Virgin Islands, and especially Puerto Rico, have followed programs of attracting industry. Many of the businesses that moved in are those that process imported materials and then market the finished products externally.

St. Croix is the location of most of the industrial development in the United States Virgin Islands — major firms process petrochemicals and bauxite/aluminum. Artificial harbors for plants of these firms were constructed on the south shore, resulting in radical changes to mangrove and wetland habitat on that shore. Several tourist resorts lie along the north shore of St. Croix, some immediately across the channel from the monument. The principal city of St. Croix — Christiansted — faces Buck Island and is 6 miles distant. St. Croix personal income is relatively high by Caribbean standards: Median family income is \$6,442 and per capita income is \$2,369. Racially, for the United States Virgin Islands as a whole, the median incomes are \$13,373 for white families and \$5,512 for black families. (data from 1970 census)

The British Virgin Islands lack significant industrial development. These islands subsist mainly on tourist trade, livestock raising, and employment in the nearby United States islands.

People of St. Croix participate directly in the visitor attraction Buck Island generates by functioning as charter boat operators and crews and indirectly as hotel and restaurant owners and employees, taxi drivers, shop clerks, and so on. All visitors must come to Buck Island by boat, and at least 30 residents are employed full or part time in providing this transportation.

Regional tourism, after a decade of rapid expansion, has leveled or declined in some recent years. Certain segments of the economy — local airlines, hotels, taxis, and charter boats as examples — have suffered. Very recent trends, however, show signs of renewed growth.

A large proportion of visitors to Buck Island are accommodated on St. Croix, while others take a 20-minute Antilles Airboat or other air taxi from St. Thomas or St. John for a day of exploring.

Rooms available in hotels and guesthouses have declined slightly on St. Croix since 1972, as shown in the Hotel Association table. Construction of new facilities for overnight guests stopped in 1973 as visitation declined. Available rooms will handle the demand until 1972 visitation levels are exceeded. A sizeable number of visitors to the Caribbean are accommodated on their own boats, anchoring at St. Croix and elsewhere.

VIRGIN ISLANDS HOTEL ASSOCIATION (U.S.)
ST. CROIX CHARTER ← CHAPTER

July 1976

	Beach Hotels Group I	Non-Beach Group II	Total
Rooms Available	576	351	927
Available Room Nights	19,034	10,881	29,915
Room Nights Occupied	5,037	3,085	8,722
Percent Rooms Occupied	26.6	31.1	28.9

COMPARISON OF OCCUPANCY
BY YEARS BY PERCENT

	1976	1975	1974	1973	1972	1971	1970	1969
January	55.8	47.7	25.6	42.5	57.5	51.8	61.2	78.0
February	76.3	62.6	38.8	69.6	80.7	73.5	84.8	93.1
March	57.7	56.8	50.0	53.6	72.6	58.8	73.7	82.3
April	44.3	40.4	35.4	43.1	64.1	49.7	44.0	68.1
May	32.4	31.2	29.8	41.2	47.7	37.9	38.6	56.1
June	22.6	35.7	31.6	39.6	43.8	31.1	37.9	53.7
July	28.9	37.0	37.7	54.9	52.1	38.7	49.4	62.2
August		46.0	48.0	47.0	56.2	47.5	39.1	54.3
September		31.5	31.7	16.4	31.2	46.6	30.0	36.8
October		38.2	38.9	13.1	39.9	38.8	28.5	43.6
November		47.7	36.8	18.6	47.4	64.8	42.2	59.9
December		56.5	51.1	22.9	48.9	62.4	56.6	63.4

JULY ANNUAL COMPARISON

	1976	1975	1974	1973	1972
Rooms Available	927	827	863	867	1,107
Available Room Nights	29,915	24,810	27,753	26,371	32,364
Room Nights Occupied	8,722	8,934	10,479	14,489	16,584
Percent Rooms Occupied	28.9	37.0	37.7	54.9	51.2

~~Charter boat passage costs approximately \$15. Year round, 10 boat companies service Buck Island, and 7 others come in during the heavy winter tourist season. Presently, 25 boats are available for commercial transportation.~~

delete
cover the
phase off

I. Probable Future Environment Without the Proposal

The National Park Service will retain administrative responsibility for the reef and island regardless of implementation of the proposal. However, the ~~intent of~~ ^{protection} ~~Presidential Proclamation No. 3443 to protect~~ ^{given} Buck Island and its adjoining shoals, rocks, and undersea coral reef formations ^{and} ~~for the benefit and enjoyment of the people~~ ^{derived by} would ~~not~~ ^{less than the potential levels of protection and use.} be met. Without the proposed actions, the environment would likely deteriorate unless visitation decreased or became less concentrated at peak periods. In the more likely case of continued or increased visitation, there would be increasingly imperfect coordination among the private boat operators and perhaps competition for the moorings at the underwater trail and for passage through the lagoon. Greater overcrowding at the underwater trail would occur, and hazards to swimmers would increase. The visitor experience would degenerate, and the resource itself would deteriorate from visitor impacts at a rate increasingly greater than the rate of regeneration. The national monument would lose some of its appeal to visitors, ultimately reducing the popularity of a visit and the gross revenue of the charter boat industry. Opportunities for alternate activities at other locations (including increased utilization at existing sites) would not be provided, but at the same time impacts associated with these activities and the facilities they require would not occur.

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Buck Island is 6,000 feet long in an east/west direction, 2,200 feet wide at its widest point, and rises in a single east/west ridge to an elevation of 340 feet. It covers a land area of about 176 acres, 90 percent of which are slopes steeper than 30 percent. Near the center of the island's south shore, a sandy bench — Diedrichs Point — extends out from the hillside. A small, rain-fed pond is located in this area. Another fairly level area of about 10 acres is located on the west end of the island, and a sandy beach adjoins the level area on the south of the island's west end.

Buck Island is volcanic in origin, as are St. Croix and most of the other Lesser Antilles islands. The rock formations of Buck Island are classed with the late Cretaceous Mount Eagle Volcanics. These are water-sorted tuffs, dark marine limestones, volcanic breccias, and minor volcanic flows — the bulk of the rocks composed of particles from eroding volcanic rocks and from ash erupted by nearby volcanoes. Strongly folded and steeply inclined rock formations can be observed along the rocky north shore. The beach sands are recent, some still in process of transport and/or deposit.

3. Tides, Currents, and Climate

The tides at Buck Island are chiefly diurnal and are small, the mean range being about 0.5 foot and the diurnal range less than 1.0 foot. In calm weather, tidal currents of about 1 knot set northwestward and southeastward off St. Croix's East Point. The main current in the channel between Buck Island and St. Croix flows westward. Trade winds increase the northwestward flow so that at times currents moving around St. Croix's East Point develop very strong westward flows through Buck Island Channel. Wind blows consistently from an easterly direction, but under rare circumstances, extended westerly winds may reverse the current flow eastward.

A hurricane is potentially the most destructive factor affecting the marine and terrestrial resources at Buck Island. The forces of wind can also destroy physical facilities on the island, particularly the rain shelter and comfort stations. Trees and other vegetation can be uprooted and destroyed. Swells and surging of the ocean's water can undercut and temporarily alter beach dynamics and reef dynamics through breaking of, and deposition of sediment on, fragile coral populations. Heavy rain associated with hurricanes and tropical storms can increase erosion, especially on the terrestrial trail. Also, the availability of large quantities of fresh water can temporarily decrease salinity around the island, thereby influencing reef viability. The hurricane season for this part of the Caribbean runs from August through the first half of October, but no destructive storms have been recorded in the last 30 years. The hurricane warning system is sufficiently developed to prevent serious danger to human users of Buck Island. However, substantial damage and danger to human life could be expected in tourist accommodations on St. Croix and elsewhere in the Virgin Islands.

VI. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The long-term productivity of the Buck Island environment results from the ability of the coral reef, associated marine life, and the terrestrial vegetation and animal life to survive and flourish — in order to continue providing both consumptive uses and enjoyable recreational activities. The proposals of the plan are intended to provide for these kinds of uses in ways compatible with their perpetuation, and set up a monitoring and surveillance program to ensure that long-term productivity is not compromised. There is a potential conflict in existing consumptive use and long-range perpetuation of the resources, in that fishing by Virgin Islanders may be removing more than is being produced. Should such be the case, a discrepancy within the proclamation establishing the monument is apparent — that proclamation allows for the continuation of the fishing but places the monument within the purview of the National Park Service Act of 1916 that requires perpetuation of the resource.

**VII. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS THAT
WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE
IMPLEMENTED**

The proposals of the plan commit the resources of the monument to recreational and limited consumptive uses with constraints to ensure perpetuation of the resources. The commitment, however, is not irreversible or irretrievable. An alternate disposition of the island and the reef could be made by appropriate administrative or congressional action at any time.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

1. Description of the Alternative

It is possible to continue use on the present level, with little restriction on visitor activities or charter boat operators.

2. Description of the Environment

Same as for the proposal.

3. Environmental Impacts of the Alternative

At least occasional periods of overcrowding would occur on the existing underwater nature trail; continuing safety hazards and aesthetic impacts would take place in the lagoon, and there would be an increasing risk of degradation to the quality of the underwater garden. Visitors would be restricted to present activities. The local charter boat industry would eventually suffer as quality of the experience deteriorated.

4. Mitigating Measures Included in the Alternative

On-site management would continue, with visitor and resource protection programs directed at minimizing conflicts with other users and the area resources.

5. Adverse Effects of the Alternative

Overcrowding of visitors, degradation of the environment, and limitation of visitors to the present restricted scope of activities would result.

6. Short-Term/Long-Term Relationships of the Alternative

Short-term opportunities for visitor activities would be gratified at the expense of long-term health of the coral reef at the underwater trail.

7. Irreversible/Irretrievable Commitments of Resources by the Alternative

The coral garden at the underwater trail would be impacted for the duration of use thereof, but would heal if the trail were closed.

B. Transfer Dock Off Southern Shore

1. Description of the Alternative

The southwestern shore of Buck Island would be provided with a dock where private commercial boats would deliver visitors for transfer to a government-provided shuttle to the East End Underwater Trail. The system would provide means for controlling the capacity of the underwater trail and would eliminate private motorcraft from the lagoon.

2. Description of the Environment

Same as for the proposal.

3. Environmental Impacts of the Alternative

The alternative would eliminate the charm of the private charter tour as an integral part of the visitor package and would require added government personnel and motorcraft for the shuttle through the lagoon. Revenue loss would occur to the private sector. The transfer dock would intrude on the island's natural setting. Use of the underwater trail would be held to prescribed levels acceptable to both the resource perpetuation and the visitor experience, both improvements from the present impact levels. The dock would affect marine organisms, currents, and the bottom sands in its immediate area, and there would be construction-related impacts. Increased government staff would provide better visitor orientation to proper behavior and hence reduce impacts on natural and historic resources. Some visitors would have to wait to use the underwater trail.

4. Mitigating Measures Included in the Alternative

Design of the dock would minimize the intrusion it would create on both aesthetic quality and natural processes.

5. Adverse Effects of the Alternative

The dock would intrude on Buck Island's setting, and would produce local effects on the marine processes. Some private operators would be out of the Buck Island program. The charm of the local tour boat would be lost. Some visitors would have to wait their turns at the underwater trail.

6. Short-Term/Long-Term Relationships of the Alternative

The underwater trail would no longer be threatened by excessive visitor impact; however, the transfer dock would intrude on the island setting for the dock's duration.

7. Irreversible/Irretrievable Commitments of Resources by the Alternative

Labor and materials used in building the dock would be permanently committed.

C. Provide Government Transportation to Buck Island

1. Description of the Alternative

Access to Buck Island and through the lagoon would be by government boat (without transfer from the ferry to the shuttle).

2. Description of the Environment

Same as for the proposal.

3. Environmental Impacts of the Alternative

Visitor-induced resource damage and congestion impacts on the visitor experience would be reduced from the present state. The charm of the private tour boat would be lost to the visitor experience. The total cost of maintaining the fleet would shift from the private sector, as would any revenues, with a profound impact on this small industry and a significant cost to the general taxpayer. Implementation of such a proposal could be many years off in the competitive world of government financing, and until then existing impacts (see No Action Alternative) would continue. Periods of waiting to use the East End Underwater Trail by visitors would necessarily occur.

4. Mitigating Measures Included in the Alternative

The trained government interpreter would replace the tour boat operator at least in part, providing enhanced information on the resource and orientation to its use. Although present tour boat operators would be out of the program, there would be more federal jobs.

5. Adverse Effects of the Alternative

The charm of the private tour boat would be deleted from the visitor program, and the private operator would be out of the program economically.

6. Short-Term/Long-Term Relationships of the Alternative

Health of the underwater coral garden at the reef would be enhanced for the long term. In the short term there would be a shift in the local economy.

7. Irreversible/Irretrievable Commitments of Resources by the Alternative

Federal labor and the tax dollars to pay for it would be committed continuously for the duration of this alternative.

D. Develop Use Area Off Northwest Island Tip

1. Description of the Alternative

This alternative would provide an underwater trail and associated facilities to accommodate use in excess of capacity that now occurs on the East End Underwater Trail. Access to it would be via the existing boat dock (lengthened) and a new hiking trail.

2. Description of the Environment

Same as for the proposal.

3. Environmental Impacts of the Alternative

Visitor-induced impacts on the present underwater trail, and congestion there, would be reduced. A long walk would be required of visitors to reach the new area, benefiting those interested in an island land experience, but bothering those

wanting to maximize time in and near the sea. The land trail would impact the land and vegetation alongside it, and the new underwater trail would impact an area now undeveloped. Shipwrecks off the northwest island tip would be exposed to increased inspection and potential damage from visitors. Lengthening the existing dock would produce the same impacts as in the proposal. Present boat operators would be subject to a permit system, holding this industry to its present state, as in the proposal. Some visitors would not be able to experience the present underwater trail, at least not without waiting.

4. Mitigating Measures Included in the Alternative

Same as for the proposal, except that impacts are not expected on endangered turtles in this alternative, and therefore, there is no mitigation.

5. Adverse Effects of the Alternative

Visitors would have a long walk to the new area, likely not desirous to some. Waiting would be necessary to explore the present underwater trail at peak use times, as in the proposal. Vegetation and animal behavior along the island trail would be affected. Shipwrecks would be exposed to potential damage by increased visitor access. Lengthening the existing dock would produce the same adverse effects as in the proposal. Boat operators not willing to comply with new procedures would be out of the program, as in the proposal.

6. Short-Term/Long-Term Relationships of the Alternative

Virtually the same as for the proposal.

7. Irreversible/Irretrievable Commitments of Resources by the Alternative

Virtually the same as for the proposal.

E. Develop Visitor-use Area off the Island's Southern Shore
1. Description of the Alternative

A second underwater trail ^{would} ~~will~~ be designated, ~~although support facilities will not be developed until the trail is needed to meet increased demand. This~~ ^{relieving the East End underwater trail of some of its use} ~~in~~ the reef zone immediately south of Diedrichs Point, ~~has long been recognized as a good viewing area; an underwater trail was once in use there, but was abandoned when the East End Underwater Trail became popular. This zone will be carefully scrutinized to identify a site for a new trail.~~ ^{The} ~~at~~ new installation ^{would} ~~at the selected location~~ will consist of a buoyed line stretching from shore to an appropriate point on the reef and anchored securely at both ends. Floating rest platforms ^{would} ~~will~~ be positioned where needed. Underwater interpretation ^{would} ~~will~~ be handled similarly to that on the East End Underwater Trail. A ranger-lifeguard in a small National Park Service boat ^{would} ~~will~~ be in position at the trail each day during the designated (and so signed) times for snorkeling activity.

BIBLIOGRAPHY

AUTHOR UNKNOWN.

- 1968 *St. Croix Guide*. vol. no. 4, St. Croix, Virgin Islands: The Dukane Press.

DOUGLAS S. BURNS-PRODUCTIONS, INC.

- 1971 *The Settler's Handbook*. St. Croix, Virgin Islands.

GLYNN, PETER W.

- 1964 "Common Marine Invertebrate Animals of the shallow waters of Puerto Rico."

PHILIBOSIAN, RICHARD, AND RODOLFO RUIBAL.

- Conservation of the Lizard Ameiva polops in the Virgin Islands*: *Herpetologica* 27(4),
RANDALL, JOHN E. AND SCHROEDER, ROBERT E. P. 450 - 454.

- 1962 "New Underwater Park." *Sea Frontiers Magazine*.

ROBINSON, ALAN H.

- 1973 "Natural vs. Visitor-related damage to shallow water corals; recommendations for visitor management and the design of underwater nature trails in the Virgin Islands."

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

- 1970 *Soil Survey, Virgin Islands of the United States*.

UNITED STATES DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS

- 1971 *Number of Inhabitants, Virgin Islands*. Washington, D.C.: U.S. Government Printing Office.

- 1972 *General Population Characteristics, Virgin Islands*. Washington, D.C.: U.S. Government Printing Office.

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

- 1970 "Climate of Puerto Rico and U.S. Virgin Islands," *Climate of the United States*, no. 60-52, rev. 1970, by Robert J. Calvesbert. Silver Springs, Maryland.

NATIONAL OCEAN SURVEY

- 1967 *United States Coast Pilot 5*. 6th ed., 5th supp., 1972. Washington, D.C.: U.S. Government Printing Office.

UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY

1950 *Geological Survey Water-supply Paper 1067: Geology and Ground-water Resources of St. Croix, Virgin Islands.* Washington, D.C.: U.S. Government Printing Office.

NATIONAL PARK SERVICE

1963 *Master Plan for the Preservation and Use of Buck Island Reef National Monument, Mission 66 Edition.* Philadelphia.

1970 *Resources Management Plan, Buck Island National Monument.* St. John, Virgin Islands.

1972 *Public Uses of the National Parks*, January 1962 through December 1972. Washington, D.C.

1974 Drawing No. 163/20,004, Resources-Landscape components.

1976 "Archaeological survey of Buck Island Reef National Monument, St. Croix, U.S. Virgin Islands," by Wayne A. Prokopetz. Southeast Archeological Center.

1977 "Statement for Management, Buck Island Reef National Monument," Virgin Islands.

1978a "Management Policies", Washington, D.C.

1978b "Planning Process Guideline", Guideline Number NPS-2, Washington, D.C.

255
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Denver Service Center

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David K. Morris
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Joe Miller)

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Superintendent (1979 - present)

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~~The President's Proclamation No. 3443
ESTABLISHING THE BUCK ISLAND REEF NATIONAL MONUMENT IN THE
VIRGIN ISLANDS OF THE UNITED STATES~~

~~By the President of the United States of America.~~

~~Title 3- The President- Proclamation 4346
RESERVING CERTAIN LANDS ADJACENT TO AND ENLARGING THE
BOUNDARIES OF THE BUCK ISLAND REEF NATIONAL MONUMENT IN
THE VIRGIN ISLANDS OF THE UNITED STATES~~

~~By the President of the United States of America.~~

~~Session laws of the Virgin Islands - 1961, No. 800, approved December 5, 1961.~~

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~~THE PRESIDENT'S~~ PROCLAMATION NO. 3443

ESTABLISHING THE BUCK ISLAND REEF NATIONAL
MONUMENT IN THE VIRGIN ISLANDS OF THE UNITED STATES

fc BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS, By Section 2 of an Act of Congress approved June 8, 1906, (34 Stat. 225; 16 U.S.C. 431), the President is authorized "in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected", and

WHEREAS, Buck Island, situated off the northeast coast of St. Croix Island in the Virgin Islands of the United States, was included in the public, government, or crown lands ceded to the United States by Denmark under the convention entered into August 4, 1916 and proclaimed by the President January 25, 1917 (39 Stat. 1706); and

WHEREAS, all property thus acquired by the United States from Denmark, not reserved by the United States for public purposes prior to June 22, 1937, was placed under the control of the Government of the Virgin Islands by the Act of June 22, 1936, (49 Stat. 1807; 48 U.S.C. 1405-1405b), with the legal title remaining in the United States; and

WHEREAS, Buck Island was not reserved by the United States for public purposes prior to June 22, 1937, but has been owned by the United States continuously since the convention with Denmark in 1916; and

WHEREAS, Buck Island and its adjoining shoals, rocks and undersea coral reef formations possess one of the finest marine gardens in the Caribbean Sea; and

WHEREAS, these lands and their related features are of great scientific interest and educational value to students of the sea and to the public; and

WHEREAS, this unique natural area and the rare marine life which are dependent upon it are subject to constant threat of commercial exploitation and destruction; and

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WHEREAS, the Advisory Board on National Parks, Historic Sites, Buildings and Monuments, established pursuant to the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 463), impressed by the caliber and scientific importance of the coral reefs of Buck Island, has urged their prompt protection to prevent further despoliation; and

4 missing

WHEREAS, it is in the public interest to preserve this area of outstanding scientific, aesthetic and educational importance for the benefit and enjoyment of the people;

NOW, THEREFORE, I JOHN F. KENNEDY, PRESIDENT, of the United States of America, under and by virtue of the authority vested in me by Section 2 of the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 431), do proclaim that, subject to valid existing rights, there is hereby reserved and set apart, as the Buck Island Reef National Monument, the area embraced within lines drawn between the coordination of latitude and longitude recited as follows:

Beginning at latitude $17^{\circ}47'58''$ N., longitude $64^{\circ}38'16''$ W.; thence approximately 10,450 feet to latitude $17^{\circ}47'30''$ N., longitude $64^{\circ}36'32''$ W., thence approximately 1,500 feet to latitude $17^{\circ}47'15''$ N., longitude $64^{\circ}36'32''$ W., thence approximately 4,500 feet to latitude $17^{\circ}47'00''$ N., longitude $64^{\circ}37'18''$ W.; thence approximately 8,600 feet to latitude $17^{\circ}47'35''$ N., longitude $64^{\circ}38'37''$ W.; and thence approximately 3,075 feet to latitude $17^{\circ}47'58''$ N., longitude $64^{\circ}38'16''$ W., the place of beginning, embracing an area of approximately 850 acres.

Warning is expressly given to all unauthorized persons not to appropriate, injure, destroy, deface, or remove any feature of this monument and not to locate or settle upon any of the lands reserved for the monument by this proclamation.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management and control of this monument as provided in the Act of Congress entitled, "An Act to establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1-3), and all acts supplementary thereto and amendatory thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the official seal of the United States of America to be affixed.

by the President Secretary of State	DONE at the City of Washington this twenty-eighth day of December in the year of our Lord nineteen hundred and sixty-one and of the Independence of the United States of America the one hundred and eighty-fifth.
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PROCLAMATION

BUCK ISLAND REEF NATIONAL MONUMENT

No. 3443

January 4, 1962, 27 F.R. 31

ESTABLISHING THE BUCK ISLAND REEF NATIONAL MONUMENT IN THE VIRGIN ISLANDS OF THE UNITED STATES BY THE PRESIDENT OF THE UNITED STATES OF AMERICA A PROCLAMATION

WHEREAS Buck Island, situated off the northeast coast of St. Croix Island in the Virgin Islands of the United States, was included in the public, government, or crown lands ceded to the United States by Denmark under the convention entered into August 4, 1916, and proclaimed by the President January 25, 1917 (39 Stat. 1706); and

WHEREAS all property thus acquired by the United States from Denmark, not reserved by the United States for public purposes prior to June 22, 1937, was placed under the control of the Government of the Virgin Islands by the act of June 22, 1936, 49 Stat. 1807 (48 U.S.C. 1405-1405c),¹ with the legal title remaining in the United States; and

WHEREAS Buck Island was not reserved by the United States for public purposes prior to June 22, 1937, but has been owned by the United States continuously since the convention with Denmark in 1916; and

WHEREAS Buck Island and its adjoining shoals, rocks, and undersea coral reef formations possess one of the finest marine gardens in the Caribbean Sea; and

WHEREAS these lands and their related features are of great scientific interest and educational value to students of the sea and to the public; and

WHEREAS this unique natural area and the rare marine life which are dependent upon it are subject to constant threat of commercial exploitation and destruction; and

WHEREAS the Advisory Board on National Parks, Historic Sites, Buildings and Monuments, established pursuant to the act of August 21, 1935, 49 Stat. 666 (16 U.S.C. 463),² impressed by the caliber and scientific importance of the coral reefs of Buck Island, has urged their prompt protection to prevent further despoliation; and

WHEREAS the Governor of the Virgin Islands, under the authority vested in him by the legislative assembly of the Virgin Islands by an act approved December 5, 1961, has relinquished to the United States, for the purposes of facilitating the establishment and administration of a national monument for the protection of the above-mentioned areas and objects of historic and scientific interest, such control as is vested in the Government of the Virgin Islands by the said act of Congress dated June 22, 1936, over the area hereinafter described; subject, however, to the condition that the United States, including any agency or instrumentality thereof, shall not adopt or attempt to enforce any rule, regulation or requirement limiting, restricting or reducing the existing fishing (including the landing of boats and the laying of fishpots outside of the marine garden), bathing or recreational privileges by inhabitants of the Virgin Islands, and shall not charge any fees for admission to the area.

WHEREAS it is in the public interest to preserve this area of outstanding scientific, aesthetic, and educational importance for the benefit and enjoyment of the people:

1. 48 U.S.C.A. § 1405 et seq.
2. 16 U.S.C.A. § 463.

NOW, THEREFORE, I, JOHN F. KENNEDY, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, 34 Stat. 225 (16 U.S.C. 431),³ do proclaim that, subject to valid existing rights, there is hereby reserved and set apart, as the Buck Island Reef National Monument, the area embraced within lines drawn between the coordinates of latitude and longitude recited as follows:

Beginning at latitude 17°47'58" N., longitude 64°38'16" W.; thence approximately 10,450 feet to latitude 17°47'30" N., longitude 64°36'32" W.; thence approximately 1,500 feet to latitude 17°47'15" N., longitude 64°36'32" W.; thence approximately 4,500 feet to latitude 17°47'00" N., longitude 64°37'16" W.; thence approximately 8,600 feet to latitude 17°47'35" N., longitude 64°38'37" W.; and thence approximately 3,075 feet to latitude 17°47'58" N., longitude 64°38'16" W., the place of beginning, embracing an area of approximately 850 acres.

WARNING is expressly given to all unauthorized persons not to appropriate, injure, destroy, deface, or remove any feature of this monument and not to locate or settle upon any of the lands reserved for the monument by this proclamation.

The Secretary of the Interior shall have the supervision, management, and control of this monument as provided in the act of Congress entitled "An act to establish a National Park Service, and for other purposes," approved August 25, 1916, 39 Stat. 535 (16 U.S.C. 1-3),⁴ and all acts supplementary thereto and amendatory thereof: *Provided*, that neither the Department of the Interior, nor any other agency or instrumentality of the United States, shall adopt or attempt to enforce any rule, regulation or requirement limiting, restricting or reducing the existing fishing (including the landing of boats and the laying of fishpots outside of the marine garden), bathing or recreational privileges by inhabitants of the Virgin Islands, or charge any fees for admission to the area.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this twenty-eighth day of December in the year of our Lord nineteen hundred and sixty-one, and [SEAL] of the Independence of the United States of America the one hundred and eighty-sixth.

JOHN F. KENNEDY

By the President:

DEAN RUSK,

Secretary of State.

3. 16 U.S.C.A. § 431.

4. 16 U.S.C.A. § 1 et seq.

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PROCLAMATION 4346

Reserving Certain Lands Adjacent to and Enlarg-
ing the Boundaries of the Buck Island Reef
National Monument in the Virgin Islands of the
United States

By the President of the United States of America

A Proclamation

The Buck Island Reef National Monument, situated off the northeast coast of Saint Croix Island in the Virgin Islands of the United States, was established by Proclamation No. 3443 of December 28, 1961 (76 Stat. 1441). It now has been determined that approximately thirty acres of submerged land should be added to the monument site in order to insure the proper care and management of the shoals, rocks, undersea coral reef formations and other objects of scientific and historical interest pertaining to this National Monument.

These thirty acres of submerged lands are presently owned in fee by the United States. They will be conveyed to the Government of the Virgin Islands on February 3, 1975, pursuant to Section 1(a) of Public Law 93-435 (88 Stat. 1210), unless the President, under Section 1(b) (vii) of that Act, designates otherwise.

Under Section 2 of the Act of June 8, 1906, 34 Stat. 225 (16 U.S.C. 431), the President is authorized to declare by public Proclamation objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected. The aforementioned thirty acres of submerged lands are contiguous to the site of the Buck Island Reef National Monument, constitute a part of the ecological community of the Buck Island Reef, and will not enlarge the monument boundaries beyond the smallest area compatible with its proper care and management.

NOW, THEREFORE, I, GERALD R. FORD, President of the United States of America, by virtue of the authority vested in me by Section 1(b) (vii) of Public Law 93-435 (88 Stat. 1210), do hereby proclaim that the lands hereinafter described are excepted from the transfer to the Government of the Virgin Islands under Section 1(a) of Public Law 93-435; and, by virtue of the authority vested in me by Section 2 of the Act of June 8, 1906, 34 Stat. 225 (16 U.S.C. 431),

~~round trip boat transportation from Christiansted to~~ the existing dock on Buck Island
the dock will be lengthened about 100 feet and improved to accommodate private and commercial boats.

Snorkelers would have a choice of hiking directly to the new underwater trail, about 0.25 mile, or of first receiving snorkeling instruction near the dock from individual boat captains or a ranger stationed there for information, orientation, first aid, and surveillance purposes.

Routing would be via the beach, with the option of returning on a trail to be constructed across the point. Occasional high water on the beach could be avoided by using the inland trail both ways. During turtle-nesting season the beach route would be closed if necessary.

2. Description of the Environment

Same as for the proposal.

3. Environmental Impacts of the Alternative

New footings for pilings required to lengthen the dock 100 feet would be embedded in the sandy seafloor off West End Beach, providing added habitat for some forms of sea life and perhaps changing some undersea predator-prey relationships in the immediate vicinity. Water currents would be modified slightly, with the chance for minor changes in beach-sand deposition and erosion dynamics. Turbidity would increase locally during installation and until seafloor contours stabilized again. Birds would have more roosting space on the extended decking, and fish in the vicinity would be rendered more vulnerable to birds preying upon them. ^(At the new underwater trail) The two line anchors and the buoyed line between, with floating rest stations and the associated underwater markers, would be an intrusion in an area now in a near-pristine state and would also introduce visitor damage and litter to the coral areas to be served. Visitor-caused damage to corals at the East End Underwater Trail would be reduced because of lessened congestion and, consequently, more room for individual swimmers to maneuver along the trail and around the interpretive signs. Likewise, boat-caused impacts on coral adjacent to the East End Underwater Trail moorings would be reduced.

~~Of the 0.25-mile hiking trail through the forest may be constructed from the existing dock to the beach at the start of the new underwater trail in order to avoid turtle nesting areas, if deemed necessary to protect the endangered species. If built,~~
trail construction impacts would occur along its length. Increased hiking activities would produce associated visitor impacts on the vegetation, litter, etc.

4. Mitigating Measures Included in the Alternative

The impacts ^{would} ~~are~~ limited to the immediate vicinity ^{would} ~~ies~~ of the 100-foot dock extension and ~~will~~ not be mitigated, except that increased use ^{would} ~~will~~ be monitored by expanded staff, and swimmers ^{would} ~~will~~ be instructed in ways to avoid damaging coral.

^{the shoreline between the dock and the new underwater trail would}
Visitor use of ~~Turtle Beach~~ ^{turtles:} will be coordinated with the egg-laying activities of endangered ~~and other species, including the possibility of routing hikers over an~~ ^{would be routing} ~~the~~ inland trail rather than along the beach during nesting seasons, ^{if necessary} ~~such a~~ ^{the} trail would follow the route of an abandoned trail to minimize construction-related impacts.

5. Adverse Effects of the Alternative

Intrusions on the currents, predator-prey relationships, pristine character, and undersea habitats will result from lengthening the existing dock 100 feet.

6. Short-Term/Long-Term Relationships of the Alternative

The ^{East End} underwater trail would no longer be threatened by excessive visitor impact; however, the transfer dock would intrude on the island setting for the dock's duration. Other than this the short-term/long-term relationships would be virtually the same as for the proposal.

7. Irreversible/Irretrievable Commitments of Resources by the Alternative

Labor and materials used in building the dock would be permanently committed, otherwise the commitment of resources would be virtually the same as for the proposal.

F. Establish a Ranger Station on St. Croix opposite Buck Island

1. Description of the Alternative

A ranger station/ranger residence would be established on St. Croix directly across Buck Island Channel. The facility would either be constructed on land purchased by the federal government or an existing building (or space in a larger unit) would be leased. The alternative would include constructing or leasing a nearby dock and storage space.

2. Description of the Environment

The facility would be located on the north shore of St. Croix in an area of ^{low density} mixed development of individual houses, condominiums, and a few large resort hotels.

H. Mitigation of Impacts on Socioeconomic Environment

Preference in providing permits to charter boat operators will be based on satisfactory performance of present operators. Boat captains will presumably reschedule tours to take advantage of times earlier and later in the day when demand for moorings is lighter. The season of use will be extended. In addition, a new business operation will become available in providing transportation to users of the ~~Diedrichs-~~^{north side} Point dock and underwater trail. A separate environmental assessment of the impacts of modifications in the access arrangements is underway, which will help management minimize resulting impacts.

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V. ANY ADVERSE EFFECTS THAT CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

A. Adverse Effects on the Marine Environment

~~Intrusions on the currents, predator-prey relationships, pristine character, and undersea habitats will result from lengthening the existing dock 100 feet.~~

There will be a ^{visual} intrusion on the natural scene and an increase in pollution from boats at the new north side underwater trail.

B. Adverse Effects on the Island Beaches and Shores

There will be ^{new} no adverse effects on the island beaches and shores.

C. Adverse Effects on the Island Land Environment

Extension and construction of trails will convert vegetation and alter animal travel patterns, as well as introduce more visitors in areas now serene, with attendant litter, noise, etc.

D. Adverse Effects on Endangered or Threatened Species

There will be no adverse effects on endangered or threatened species.

The potential for adverse effect upon Brown pelican by visitors using the proposed underwater trail on the north of the island is unknown, otherwise

E. Adverse Effects on Historic and Cultural Resources

Some collecting and visitor wear will occur as visitation increases, in spite of staff efforts to control it.

F. Adverse Effects on Park Management

There will be no adverse effects on park management.

G. Adverse Effects on Visitors

Some will not be able to enjoy the East End Underwater Trail when they prefer. Some will dislike the increased visitor levels in now-isolated areas. ~~Noise and visual intrusions during construction, and visual intrusions following construction to the extent facilities are not hidden, will occur.~~

H. Adverse Effects on Socioeconomic Environment

Tour boat operators unwilling or unable to adapt to the new access capacities and systems will be out of the Buck Island program.

3. Environmental Impact of the Alternative

The resources of Buck Island Reef would receive greater protection than under the existing arrangement (Ranger housed inland on St. Croix with patrol boat docked at Christianssted).

Currently no park personnel are at the park after 4:00 or 4:30 PM each day or before 9:00 AM.

Only rarely are observations ~~from~~ ^{by park personnel on} St. Croix made of the island after 4:30 PM. Eggs of endangered sea turtles have been taken during periods the island is not under watch. Under the alternative the island would receive surveillance more of the time.

The distance from the docking point on St. Croix would be reduced from the present 6 miles overwater distance to about 2 miles, providing a faster response to calls for assistance or to prevent unauthorized removal of ~~land or marine~~ resources.

The alternative would either take $\frac{1}{4}$ to $\frac{1}{2}$ acre of vacant land on St. Croix or would require purchase or leasing of space in an existing building; in either case use of the land or space for other uses would be prevented.

- ### 4. Mitigating Measures Included in the Alternative
- Establishment of the new facility would release space at the Christianssted dock and existing housing on St. Croix for expansion of other programs or for reduction of Park Service presence at those places.

- ### 5. Adverse Effects, Short-Term/Long-Term Relationships, and Irreversible/Irretrievable Commitments of Resources.

No major effects, relationships, or commitments have been identified.

5 miles from
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IX. CONSULTATION AND COORDINATION WITH OTHERS

The following agencies and individuals were consulted (in October 1972) during the development of the proposal and in the preparation of the draft environmental statement. All were met with in October 1972 while planning for Buck Island was being undertaken concurrently with that for Virgin Islands National Park and Christiansted National Historic Site.

Government of the Virgin Islands, Department of Conservation and Cultural Affairs (Commissioner Hortense Rowe), and Virgin Islands Planning Board (Mark Isaacs).

Chamber of Commerce of Virgin Islands (President Alfred B. Hayes).

St. Croix Landmark Society (Alfred B. Hayes and Harry Neuman).

West Indies Laboratory, Fairleigh Dickenson University (Drs. Lee Gearhart and John Ogden).

St. Croix Skin Divers Association (John Williams and Dick Malpass).

St. Croix Commercial Boatmen's Association (Richard Olney).

United States Coast Guard.

Mr. Peter Thurland, 80-year resident of Christiansted.

APPENDIX

A: PROCLAMATIONS ~~AND~~ LEGISLATION, AND REGULATIONS

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- Presidential Proclamation 3443 Establishing the Buck Island Reef National Monument
 - Presidential Proclamation 4346 Reserving Certain Lands Adjacent to and Enlarging the Boundaries of the Buck Island Reef National Monument
 - Presidential Proclamation 4359 Amending Proclamation 4346 Relating to the Enlargement of the Buck Island Reef National Monument
 - Laws of the Government of the Virgin Islands Act No. 800 Authorizing the Governor to Transfer Control of Buck Island and Adjacent Submerged Lands and Waters to the National Park Service for Administration as a National Monument

CODE OF FEDERAL REGULATIONS Title 36, Chapter 1,
Paragraph 7.73

on the north side of the island

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Pollution from boats in lagoon area ~~would~~ increase slightly with additional use. An intrusion into the new trail area will result from additional moorings, underwater markers and visitor use. Intrusion should be small because of location of mooring in sandy area and limited use of area.

III. THE ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

A. Impacts on the Marine Environment

Pollution from boats within the lagoon would be held to roughly present levels, whereas there would be an increase in pollutants in the waters off West End Beach, and in the channel between Buck Island and St. Croix, because the expanding use would be shifted into these areas. ~~New footings for pilings required to lengthen the dock 100 feet would be embedded in the sandy seafloor off West End Beach, providing added habitat for some forms of sea life and perhaps changing some undersea predator-prey relationships in the immediate vicinity. Water currents would be modified slightly, with the chance for minor changes in beach sand deposition and erosion dynamics. Turbidity would increase locally during installation and until seafloor contours stabilized again. Birds would have more roosting space on the extended decking, and fish in the vicinity would be rendered more vulnerable to birds preying upon them. The two line anchors and the buoy ^{line} between, with floating rest stations and the associated underwater markers, ^{installed at the proposed northeast underwater trail} would be an intrusion in an area now in a near-pristine state and would also introduce visitor damage and litter to the coral areas to be served. Visitor-caused damage to corals at the East End Underwater Trail would be reduced because of lessened congestion and, consequently, more room for individual swimmers to maneuver along the trail and around the interpretive signs. Likewise, boat-caused impacts on coral adjacent to the East End Underwater Trail moorings would be reduced.~~

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B. Impacts on the Island Beaches and Shores

~~North Increased use of Turtle Beach will pose a threat to turtles. Expanded beach use will reduce present serenity and result in more shoreline collecting.~~

C. Impacts on the Island Land Environment

~~A 0.25-mile hiking trail through the forest may be constructed from the existing dock to the beach at the start of the new underwater trail in order to avoid turtle nesting areas, if deemed necessary to protect the endangered species. If built, trail construction impacts would occur along its length. Increased hiking activities will ~~would~~ produce associated visitor impacts on the vegetation, litter, etc. Other new trails (400-foot extension of summit trail and addition of a 0.50-mile branch trail from it westward) ~~would~~ ^{will} convert the vegetation under the treads and modify both that and animal habitats or species compositions along the corridors. Increased runoff ~~would~~ ^{will} occur along the trails. Views of bird areas ~~would~~ ^{will} be opened that would help protect the birds from visitors who might otherwise disturb them. Picnicking sites and benches for rest stops ~~would~~ ^{will} concentrate use and produce local impacts on vegetation, litter, etc.~~

Rainshelters and operations buildings would also convert vegetation and compact soil under them, causing changes in microhabitats in their immediate vicinities and might affect the adjacent vegetation as well as the behavior of nearby animals.

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The increased activity of the new underwater trail area will take place in the water about 1000 feet from the rookery of the endangered brown pelican on the north slope of the island. The impact of the increased human activity on the brown pelican is unknown, although in the past, the passage of small boats and the occasional use of the area by snorkelers and scuba divers has had no noticeable effect.

D. Impacts on Endangered or Threatened Species

Increased use of Turtle Beach poses a threat to leatherback and hawksbill turtles. No other impact will occur to endangered or threatened species because of implementation of the proposal.

E. Impacts on Historic and Cultural Resources

The generally pristine character of the island, presumed to be a reasonable portrayal of a view Columbus might have seen, will be impacted by the 100 foot lengthening of the existing dock. The remains of the Diedrich occupation will be subject to some visitor wear when made available for interpretation. Increased use of the island may expose the aboriginal site and nearby coral piles and, perhaps, shipwrecks to unauthorized collecting.

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F. Impacts on Park Management

Locating quarters for the Buck Island ranger on the northeast shore of St. Croix will increase National Park Service ability to observe and manage Buck Island, protect its resources, and to respond to emergencies. Added visitor activities will require additional staffing and equipment.

G. Impacts on Visitors

Additional visitors will be provided with an additional, lower cost mode of access to the island and reef, and added or improved activities such as hiking, birdwatching, and viewing historical remains, and exploring a new underwater trail. At peak demand times, some visitors would likely not be able to experience the popular East End Underwater Trail or would have to wait for the opportunity, yet those still able to experience this trail will do so with less interference from other swimmers and boats. During construction, noise and visual effects will temporarily disturb the area's aesthetic appeal. On the island, added facilities and increased use would generate litter, noise, and man made visual distractions to the natural scene. Boat traffic in the channel between St. Croix and Buck Island would be increased by the ferry service.

H. Impacts on Socioeconomic Environment

Limiting the number of boats able to enter the southern lagoon and moor at the East End Underwater Trail will allow a net increase in that segment of the boating industry serving this activity, to about its present level. Addition of ferry service to the lengthened dock will allow local operators a new opportunity for income. The overall effect on the local tourist and boating industries will be to generate increased potential for revenue and employment, while assuring a continuing existence of Buck Island tourism by providing for a satisfactory standard of visits. Materials and labor for lengthening the existing dock by 100 feet, improving and constructing land and undersea trails, building housing and operational facilities on St. Croix, and expanding the staff will tend to generate local economic activity of that scale.

combined with opening a new area
to be served by charter boats

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

A. Mitigation of Impacts on the Marine Environment

~~The impacts are limited to the immediate vicinity of the 100-foot dock extension and will not be mitigated, except that increased use will be monitored by expanded staff, and swimmers will be instructed in ways to avoid damaging coral. Litter will be picked up and vandalism corrected.~~

B. Mitigation of Impacts on the Island Beaches and Shores

Visitor use of Turtle Beach will be coordinated with the egg-laying activities of endangered and other species, ~~including the possibility of routing hikers over an inland trail rather than along the beach during nesting seasons; such a trail would follow the route of an abandoned trail to minimize construction-related impacts.~~ Litter will be picked up and vandalism corrected.

C. Mitigation of Impacts on the Island Land Environment

Area occupied by ~~constructed~~ facilities will be held to a minimum, and site adjustments will be made as necessary to assure preservation of special features. Design of ~~dock, trails, moorings, and buildings~~ will be planned with environmental and aesthetic sensitivity so as to minimize intrusion on the natural scene. ~~Light construction methods will be utilized to minimize impacts of machines and materials. Any housing constructed on St. Croix will be in an area already committed to development.~~

New trails on the island will be located away from the habitat of stingingbush (*Malpighia palleis*), a plant species being considered for endangered or threatened status.

Hikers will be instructed to avoid damaging or collecting the vegetation, rock, and animals, and not to litter. Litter will be picked up and vandalism corrected.

D. Mitigation of Impacts on Endangered and Threatened Species

Visitors will not be allowed to disturb beached turtles during nesting seasons (See IV.B., above).

E. Mitigation of Impacts on Historic and Cultural Resources

Increasing numbers of Buck Island visitors will be advised to observe but not disturb or collect historic remains. Man-made intrusions on the historical/natural island appearance will be sited and screened and designed to blend with the landscape. ~~Prior to any construction~~ ^{archaeological surveys of specific sites will be conducted to insure that no archaeological resources are adversely affected.}

F. Mitigation of Impacts on Park Management

Impacts are favorable.

G. Mitigation of Impacts on Visitors

The restriction of use at East End Beach will be compensated for by improved activities off Turtle Beach, on the beach, and on the island.

(new opportunities for underwater viewing on the north side and by

Arriving at the new underwater trail "jump-in point," all swimmers, regardless of previous snorkeling experience, would be able to enjoy at least a "taste" of the reef. Each would be totally free to return to shore at any time. The ranger in position on his boat would provide constant lifeguard service during the hours of heaviest use.

Signing at the shore and on the platforms would inform swimmers — particularly novice snorkelers — of the wisdom of restricting their activity to the hours a ranger-guard is on duty and visible to all swimmers.

The new underwater trail system would be designed to best interpret the existing coral structures, utilizing a system similar to that presently available at the East End Underwater Trail.

delete

c. Transportation from St. Croix

Except for the establishment of a boat-capacity figure for the ~~east end and~~ ^{new underwater trail on the north side} dock, commercial boat transportation from St. Croix will be controlled only by the laws of supply and demand. Presently, most visitors who have a choice prefer to travel by sailboat or small powercraft under control of a local captain who offers various services in addition to basic transportation. If, however, demand should develop for a pure shuttle service (basic transportation only), the National Park Service will consider opportunities for private enterprise to provide it. Such a service would logically be offered at a lower fee, enabling a greater range of economic classes to utilize Buck Island Reef National Monument.

d. Encourage Other Activities

Recognizing the fact that some visitors to Buck Island will not care to use the reef or may wish to do other things in addition to snorkeling, the following activities will be encouraged, and facilities for such use will be installed where needed.

Swimming, sunbathing, etc., at West End Beach: ~~Implement-~~ ^{for picnicking, swimming, and sunbathing is expected to increase.} ~~ation of the second part of this plan will have the effect of increasing the casual use of West End Beach, since some boat passengers will undoubtedly choose to simply walk to the best beach area and spend the day.~~ This activity ^{does} ~~will~~ not interfere with the present procedure ~~that~~ of private and charter boats anchoring off the beach while passengers enjoy the sun and water. Boaters should be encouraged to anchor further off the beach to reduce the number of boats in the swimming area. When boat congestion near the beach *demands* restrictive action, it will be a relatively simple matter to establish a designated swimming area marked by buoys and prohibited to boats. Under this system, boat captains would have the choice of either anchoring outside the swim zone (with passengers swimming in) or discharging passengers at the existing dock. If the latter action was chosen, the boat would then anchor further out until an appointed time to pick up the passengers for return to St. Croix.

~~THE PRESIDENT~~

do hereby proclaim that, subject to valid existing rights, the lands hereinafter described are hereby added to and made a part of the Buck Island Reef National Monument, and Proclamation No. 3443 of December 28, 1961, establishing the Buck Island Reef National Monument is amended accordingly.

Beginning at latitude 17°47'30" N, longitude 64°36'32" W; thence approximately 1000 feet to latitude 17°47'27" N, longitude 64°36'22" W; thence approximately 900 feet to latitude 17°47'18" N, longitude 64°36'22" W; thence approximately 1000 feet to latitude 17°47'15" N, longitude 64°36'22" W; thence approximately 1500 feet to latitude 17°47'30" N, longitude 64°36'32" W, the place of beginning, embracing an area of approximately 30 acres.

IN WITNESS WHEREOF, I have hereunto set my hand this first day of February, in the year of our Lord nineteen hundred seventy-five, and of the Independence of the United States of America the one hundred and ninety-ninth.

Gerald R. Ford

[FR Doc. 75-3356 Filed 2-3-75; 10:11 am]

FEDERAL REGISTER, VOL. 40, NO. 24—TUESDAY, FEBRUARY 4, 1975

Buck Island Reef National Monument, U.S. Virgin Islands

Proclamation 4359. March 28, 1975

AMENDING PROCLAMATION NO. 4346 RELATING TO THE ENLARGEMENT OF THE BUCK ISLAND REEF NATIONAL MONUMENT

*By the President of the United States of America
a Proclamation*

The boundaries of the Buck Island Reef National Monument were enlarged by Proclamation No. 4346 of February 1, 1975. The description of those lands contained a typographical error.

NOW, THEREFORE, I, GERALD R. FORD, President of the United States of America, by virtue of the authority vested in me by Section 1(b)(vii) of Public Law 93-435 (88 Stat. 1210), and by virtue of the authority vested in me by Section 2 of the Act of June 8, 1906, 34 Stat. 225 (16 U.S.C. 431), and in order to correct a typographical error, do hereby amend the description of the lands described in Proclamation No. 4346 to read as follows:

Beginning at latitude 17° 47' 30" N, longitude 64° 36' 32" W; thence approximately 1000 feet to latitude 17° 47' 27" N, longitude 64° 36' 22" W; thence approximately 900 feet to latitude 17° 47' 18" N, longitude 64° 36' 22" W; thence approximately 1000 feet to latitude 17° 47' 15" N, longitude 64° 36' 32" W; thence approximately 1500 feet to latitude 17° 47' 30" N, longitude 64° 36' 32" W, the place of beginning, embracing an area of approximately 30 acres.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of March, in the year of our Lord nineteen hundred seventy-five, and of the Independence of the United States of America the one hundred ninety-ninth.

GERALD R. FORD

[Filed with the Office of the Federal Register, 5:08 p.m.,
March 28, 1975]

LAWS OF THE GOVERNMENT OF THE VIRGIN ISLANDS

No. 800..

(Approved December 5, 1961)

To Authorize the Governor to Transfer Control of Buck Island and Adjacent Submerged Lands and Waters to the National Park Service for Administration as a National Monument.

WHEREAS Buck Island, situated near the northeast coast of St. Croix Island in the Virgin Islands of the United States, and its adjoining shoals, rocks and underseas coral reef formations constitute one of the finest marine gardens in the Caribbean Sea and these lands, submerged land and their related features are of great scientific interest and educational value; and

WHEREAS said Buck Island and certain of its adjoining shoals, rocks, reefs and waters are proposed for establishment by the President of the United States of America as a national monument under authority contained in the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 431); and

WHEREAS the Government of the Virgin Islands is desirous that such establishment of a monument be made, consistent with the preservation and continuance of certain existing fishing, bathing and recreational uses of the area by inhabitants of the Virgin Islands; Now, Therefore,

Be it enacted by the Legislature of the Virgin Islands:

Section 1. For the purpose of facilitating the establishment and administration of Buck Island and certain adjoining shoals, rocks, coral reefs and waters as a national monument under the jurisdiction of the Secretary of the Interior, the Governor of the Virgin Islands is hereby authorized, for and on behalf of the Government of the Virgin Islands, to relinquish to the United States such control as is vested in the Government of the Virgin Islands under the Virgin Islands Organic Act of June 22, 1936, as revised and amended (49 Stat. 1808; 48 U.S.C. 1405c), the property described as follows:

Beginning at latitude 17° 47' 58" N., longitude 64° 38' 16" W., thence approximately 10,450 feet to latitude 17° 47' 30" N., longitude 64° 36' 32" W.; thence approximately 1,500 feet to latitude 17° 47' 15" N., longitude 64° 36' 32" W.; thence approximately 4,500 feet to latitude 17° 47' 00" N., longitude 64° 37' 16" W.; thence approximately 8,600 feet to latitude 17° 47' 35" N., longitude 64° 38' 37" W.; and thence approximately 3,075 feet to latitude 17° 47' 58" N., longitude 64° 38' 16" W., the place of beginning, embracing an area of approximately 850 acres.

Section 2. The Government of the Virgin Islands hereby expressly declares that it is a condition of its relinquishment of control over Buck Island, and the adjoining shoals, rocks, coral reefs, and waters embraced in the description set forth in section 1 of this Act, and a condition to the continued exercise of control over such property by the National Park Service, or any other department, agency or instrumentality of the United States in which administrative control is vested pursuant to the provisions of this Act, that such department, agency or instrumentality shall not adopt or attempt to enforce any rule, regulation or requirement limiting, restricting or reducing the existing fishing (including the landing of boats and the laying of fishpots outside of the marine garden), bathing or recreational privileges by inhabitants of the Virgin Islands, and shall not charge any fees for admission to the area. The faithful performance of the foregoing conditions shall be deemed to be a condition subsequent to the control by any such department, agency or instrumentality over the aforesaid area.

Approved December 5, 1961.

EDITOR: use original for making camera-ready page

this is a xerox copy of original in folder in terms file

CODE OF FEDERAL REGULATIONS
July 1, 1978

Title 36—Parks, Forests, and Public Property
Chapter I—National Park Service, Dept. Interior

§ 7.73 Buck Island Reef National Monument.

(a) *Submerged features.* (1) No person shall cut, carve, injure, mutilate, remove, displace or break off any underwater growth or formation. Nor shall any person dig in the bottom, or in any other way injure or impair the natural beauty of the underwater scene. No rope, wire or other contrivance whether such contrivance is temporary or permanent in character or use shall be attached to any coral, rock or other underwater formation.

(2) No person shall destroy, mark, deface, displace, remove or tamper with any underwater sign, notice, float, placard or underwater device.

(b) *Marine operations.* No dredging, excavating or filling operations of any kind are permitted, and no equipment, structures, byproducts or excavated materials associated with such operations may be deposited in or on the waters or ashore within the boundaries of the Monument.

(c) *Wrecks.* No person shall destroy, molest, remove, deface, displace or tamper with wrecked or abandoned waterborne craft of any type or condition, or any cargo pertaining thereto, unless permitted in writing by an authorized official of the National Park Service.

(d) *Boats.* (1) No watercraft shall be operated in such a manner, nor shall anchors or any other mooring device be cast or dragged or placed, so as to strike or otherwise cause damage to any underwater features.

(2) Anchoring or maneuvering watercraft within the waters that contain underwater marked swimming trails and interpretive signs is prohibited.

(3) All watercraft, carrying passengers for hire, shall comply with applicable regulations and laws of the U.S. Coast Guard and Territory of the Virgin Islands.

(e) *Fishing.* (1) Taking of fishes or any other marine life in any way except with rod or line, the rod or line being held in the hand, is prohibited: *Provided*, That fish may be taken by pots or traps of conventional Virgin Islands design and not larger than five feet at the greatest dimension, and bait fish may be taken by nets of no greater overall length than 20 feet and of mesh not larger than 1 inch stretched: *Provided further*, That paragraphs (e) (3), (4), and (5) of this section shall apply.

(2) The use or possession of any type of spearfishing equipment within the boundaries of the Monument is prohibited.

(3) The species of crustaceans known as Florida Spiny Lobster (*Panulirus argus*) may be taken by hand or hand-held hook or snare. No person shall take female lobsters with eggs; or take more than two lobsters per person per day; or have in possession more than two days' limit: *Provided*, That paragraph (e)(5) of this section shall apply.

(4) Species of mollusks commonly known as whelks and conchs may be taken by hand. No person shall take more than two conchs or one gallon of whelks, or both, per day, or have in possession more than two days' limit; *Provided*, That paragraph (e) (5) of this section shall apply.

(5) All known means of taking fish, crustaceans, mollusks, turtles, or other marine life are prohibited between the outer fringes of the barrier reef and the shore line of Buck Island eastward of the recognizable extremities of the sand beach on the north and south sides of the island.

(29 FR 17091, Dec. 15, 1964)

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NOTE: (This is a copy of the draft MO. Minor changes have been made to agree with approved version of 1/23/77) 3-1179

B. MANAGEMENT OBJECTIVES

Management objectives were prepared by the Superintendent, Virgin Islands National Park, as part of the statement for Management for Buck Island Reef National Monument, approved by the Regional Director on October 3, 1977.

LSS
5/2/77

Conservation of Natural Resources

To assure long-term perpetuation of the barrier reef and its associated biota, as well as the native vegetation, wildlife, and other natural resources of Buck Island itself, and to minimize the adverse effects of human activities on these resources.

To maintain the highest possible habitat quality for the park's endangered and rare species,

such as the brown pelican (endangered), hawksbill and leatherback turtles (endangered), green turtle (rare), Ameiva ground lizard (endangered), and stinging bush (endangered and endemic to Buck Island and St. Croix). (The current status of these species is presented in Section II.B.4.)

delete
obsolete
1/23 5/14

To reduce the adverse effects of trailside erosion on vegetation and soils along the island's hiking trail.

delete
not in app.
copy 1/23 5/14

To reduce the adverse impact of exotic species, such as the mongoose and tree rat, on populations of native flora and fauna.

To ensure that the aesthetic quality of the barrier reef and the island itself is not impaired by structures and other visual intrusions.

To ensure that the recreational taking of conch, whelk, lobster, fish, and other marine life do not adversely effect the ecological balance of the barrier reef.

Preservation of Cultural Resources

To identify, evaluate, preserve, and protect the park's cultural resources in a manner consistent with executive and legislative requirements and the Service's historic preservation policies.

Acquisition of Information

To secure adequate information, through research, monitoring, or other means, to enable efficient and effective management of the park's natural resources.

To evaluate the effects of subsistence fishing and shellfishing in the western part of the park on the ecological communities of the barrier reef and adjacent waters.

To locate and evaluate sources of pollution that may be having adverse effects on the condition of the park's marine ecosystems.

To evaluate the ecological importance of fire in determining the structure of the park's vegetation.

Visitor Use

To make available opportunities for day use recreational activities, such as picnicking, hiking, fishing, shellfishing, swimming, and snorkeling, at levels and in locations where they are compatible with long-term perpetuation of the park's terrestrial and marine resources.

Visitor Safety

To promote public awareness of potential hazards associated with boating, snorkeling, hiking, and other activities and thereby to help ensure a safe, enjoyable park experience for all visitors.

To minimize congestion, promote sound seamanship practices, and ensure public safety at the mooring area in the underwater trail area.

To ensure that visitors are well informed on the poisonous characteristics of the manchineel tree and that appropriate warnings are provided in public use areas where the species occurs.

Interpretation

To promote public understanding and appreciation of the ecology of the barrier reef and the sensitivity of this fragile ecosystem to the adverse effects of human activities.

To ensure that the techniques used for underwater interpretation are effective, provide the visitor with high quality experiences, and do not adversely affect the barrier reef environment.

To foster awareness of the native terrestrial flora and fauna, as well as other natural resources, of the Virgin Islands, the processes responsible for their continuing evolution, and the influences which may adversely affect them, as well as the progressively increasing importance of the park in conserving these resources as other areas of the Virgin Islands are developed.

Operations

To improve the efficiency of ranger monitoring of environmental conditions and public use of the park.

C: Development Costs

F. General Development Plan

All needed facilities were described in the preceding visitor use plan. The General Development map shows facility locations on the island. Scenic aspects of Buck Island will be protected by building very little beyond the existing, small, inconspicuous structures. In addition, a ranger station and residence are proposed to be located on the adjacent shore of St. Croix.

Costs of the proposed development are estimated to be:

~~Extended dock (10 feet wide)~~	~~\$ 80,000~~
~~100 linear feet~~	
Construct ~~two~~ new island trails	18,000
0.6 ~~7~~ mile	~~30,000~~
Improve existing trails	
400 linear feet	3,000
~~Construct St. Croix ranger station/~~	
~~residence/storage 2,000 sq. ft.~~	~~140,000~~
Construct underwater trail	
0.25 mile — with signing, interpretation, rest buoys, and buoyed line from shore to reef	20,000
Construct interpretive markers on Buck Island	5,000
Construction Cost	~~\$278,000~~
	~~186,000~~ \$ 46,000
Gross Cost ~~\$278,000~~ (construction cost plus 46% ; includes project planning, project supervision and contingencies)	~~\$406,000*~~
	~~272,000~~ \$ 67,000

delete →
*Includes 15% — Project planning
15 % — Project supervision
16 % — Contingencies