

information/orientation pavilion and landscaped open space with a picnic area. The visitor parking area would be redesigned. There would be a new administration building and dive locker, employee housing, NPS maintenance dock, and utilities. A new sign would be placed at the entrance. The public boat ramps at Convoy Point would be closed to the public when the new boat ramps are constructed at Homestead Bayfront County Park. (Due to the similarity in development concept plans between alternative 2 and the proposal, no map is presented for alternative 2.)

The Arsenicker Keys would be maintained as a natural area.

Bay. Management of the bay would continue as at present (see alternative 1).

Barrier System. The southern keys and waters (south of Caesar Creek) would remain a natural area, but substantial new development would take place on Adams and Elliott keys. Enlarged docking facilities, an interpretive viewing tower, food vending machines, and additional picnic facilities would be provided on Adams Key. This area would be connected to the Elliott Key Harbor complex via a footbridge and interpretive hiking trail. In addition to existing facilities and services at Elliott Key Harbor (see alternative 1), food vending machines and recreation equipment rentals would be provided. Existing facilities at University Dock would remain, but reservations would be required for public use of the dock. Upon expiration of the special use permit at Tannehill, the structures would be removed.

Sands Key would remain a natural area. The canal at the keyhole would remain open.

Private uses would continue on Boca Chita, the Ragged Keys, and Soldier Key (see alternative 1).

The state leases for the residences at Stiltsville would continue through 1999.

Reef Tract. The reef tract would be managed similarly to the present (see alternative 1), but with the addition of guided public tours.

Alternative 3: Preservation and Minimal Development with Limited Public Transportation

Public Transportation. The current NPS-operated weekend shuttle service between Convoy Point and Elliott Key Harbor would continue indefinitely beyond July 4, 1983. However, a passenger fee would be charged to help defray expenses.

Mainland. The mainland mangrove shoreline would be maintained in a natural state with no development.

New development at Convoy Point would be similar to alternative 2 with the following exceptions. The visitor parking area would be smaller. There would be only minor modifications of the existing boat basin and the addition of a boat lift to handle NPS boats. There would be no new NPS maintenance dock. The public boat ramps at Convoy Point would be closed to the public when the new boat ramps are constructed at Homestead Bayfront County Park. (Due to the similarity in development concept plans between alternative 3 and the proposal, no map is presented for alternative 3.)

The Arsenicker Keys would be maintained as a natural area.

Bay. Existing uses of the bay would continue. Biologically sensitive or hazardous areas would be marked to protect the resources and to provide safety for boaters and their equipment.

Barrier System. Development on the keys would be reduced to the minimum level. The southern keys and waters (south of Caesar Creek) would be strictly managed to preserve natural conditions. Adams Key would continue as a ranger residence with improved docking facilities for private and NPS boats, but no visitor services or new facilities would be provided. Existing historic structures would be maintained, but they would be screened with native plantings. Much of the cleared area would be allowed to revegetate.

The existing facilities and services at Elliott Key Harbor would remain. The visitor pavilion would receive interior redesign to improve its interpretation and information functions. The dock at University Dock would be removed, and anchorage offshore would continue. Upon expiration of the special use permit at Tannehill, the structures would be adapted for use as a ranger station/residence.

The channel in Sands Key would be filled, and the salt pond restored to its original contours. The island would be returned to a natural state.

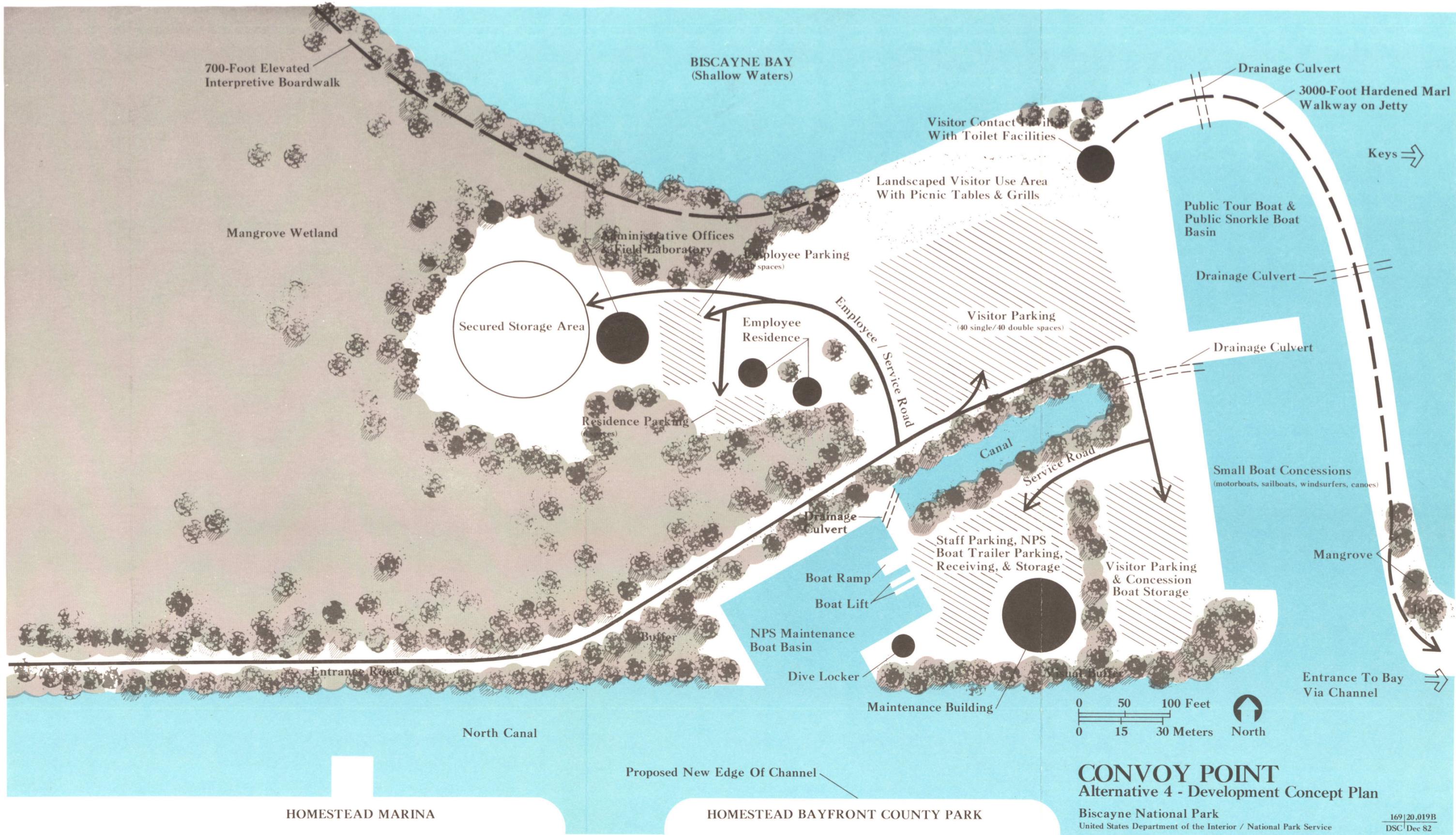
Boca Chita, the Ragged Keys, and Soldier Key would be returned to a natural state.

The Stiltsville development would be removed after expiration of the leases in 1999.

Reef Tract. The reef tract would be managed as at present (see alternative 1), but in addition, selected shipwrecks would be closed to public access.

Alternative 4: Intensive Visitor Use and Expanded Development

Public Transportation. A public passenger ferry system would serve Convoy Point, Elliott Key Harbor, and Adams Key. A glass-bottomed boat would tour the reefs, and guided boat tours would be provided through the constricted waterways of the southern keys.



700-Foot Elevated Interpretive Boardwalk

BISCAYNE BAY (Shallow Waters)

Drainage Culvert

3000-Foot Hardened Marl Walkway on Jetty

Visitor Contact Pavilion With Toilet Facilities

Keys →

Mangrove Wetland

Landscaped Visitor Use Area With Picnic Tables & Grills

Public Tour Boat & Public Snorkel Boat Basin

Administrative Offices Field Laboratory

Employee Parking (spaces)

Drainage Culvert

Secured Storage Area

Visitor Parking (40 single/40 double spaces)

Drainage Culvert

Employee Residence

Employee / Service Road

Residence Parking (spaces)

Canal

Small Boat Concessions (motorboats, sailboats, windsurfers, canoes)

Drainage Culvert

Staff Parking, NPS Boat Trailer Parking, Receiving, & Storage

Visitor Parking & Concession Boat Storage

Boat Ramp

Boat Lift

NPS Maintenance Boat Basin

Dive Locker

Maintenance Building

Mangrove

Entrance Road

Entrance To Bay Via Channel

North Canal

0 50 100 Feet
0 15 30 Meters
North

Proposed New Edge Of Channel

HOMESTEAD MARINA

HOMESTEAD BAYFRONT COUNTY PARK

CONVOY POINT
Alternative 4 - Development Concept Plan

Biscayne National Park
United States Department of the Interior / National Park Service

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Mainland. The mainland shoreline would be maintained in a natural state. The National Park Service would cooperate with the county to build a self-guided interpretive boardwalk on the canal spoil bank at Black Point. A self-guided canoe trail would skirt the shoreline, and camping platforms, or "chickees," would be provided on Mangrove Point.

At Convoy Point, the public boat ramps would be closed to the public when the new boat ramps are constructed at Homestead Bayfront County Park. In addition to the new facilities described in the proposed development concept plan, there would be concessions for motorboat, sailboat, windsurfer, and canoe rentals. Part of the existing boat harbor would be redesigned for the concession boats. Another new harbor for NPS boats would be dredged and built at a site farther west along the channel that separates the national park from the county park. Thus the site plan would differ substantially from that in the proposal, as shown in the map entitled Convoy Point, Alternative 4--Development Concept Plan.

Although the Arsenicker Keys would remain largely natural, a self-guided canoe trail would circumnavigate the keys, and camping platforms would be provided in environmentally compatible areas.

Bay. Management of the bay would continue as at present (see alternative 1).

Barrier System. As in alternative 2, the barrier system would be further developed for intensive visitor use. Guided interpretive motorboat and canoe and walking tours would be conducted in the southern keys area. Adams Key would become a major developed area as described in alternative 2.

A hiking/biking interpretive trail on Elliott Key would connect to the footbridge from Adams Key. The existing facilities and services at Elliott Key Harbor would be supplemented by food vending machines, equipment rentals, an amphitheater, interior redesign of the visitor pavilion, and guided bay tours on a lighted, glass-bottomed barge.

The dock at University Dock would be retained. An information/interpretation exhibit and new restrooms and picnic tables would be provided. The Tannehill house would be converted to a ranger station/student group interpretation center when the special use permit expires, and an elevated observation/interpretation viewing deck would be added to the existing structure.

Sands Key would remain as is (see alternative 1).

Boca Chita would be adapted as a major day use harbor and recreation area. Development would be the same as that in the proposed plan. The structures on Ragged Key 3 would be adapted to serve a variety of public interests compatible with the park mission, such as school group interpretation or research. The other Ragged Keys and Soldier Key would be returned to their natural appearance.

The National Park Service would manage the nonrenewable state leases for the Stiltsville residences until 1999; adaptive uses would be studied at that time.

Reef Tract. The reef tract would be managed as in alternative 2.

Table 6: Summary of the Proposal and Alternatives

	<u>Proposal:</u> <u>Moderate Development</u>	<u>Alternative 1:</u> <u>No Action</u>	<u>Alternative 2:</u> <u>1978 General Management Plan</u>	<u>Alternative 3:</u> <u>Minimal Requirements</u>	<u>Alternative 4:</u> <u>Expanded Development</u>
Public Transportation	daily tour boat service to Elliott Key, lower keys, and reef	no public transportation after July 1983	daily tour boat service to Elliott Key and reef	weekend tour boat service to Elliott Key	daily tour boat service to Elliott Key, lower keys, and reef
Mainland --Mangrove Shoreline	natural area with canoe trail	natural area	natural area	natural area	natural area with canoe trail, boardwalk at Black Point, and camping platforms at Mangrove Point
--Convoy Point	park entrance for non-boating public with new information center, picnic area, and shoreline interpretive facilities (no public boat ramp)	park entrance for non-boating public with small contact station and small picnic area (no public boat ramp)	park entrance for non-boating public with new information center and picnic area (no public boat ramp)	park entrance for non-boating public with new information center and picnic area (no public boat ramp)	park entrance for non-boating public with new information center, picnic area, shoreline interpretive facilities, and small-boat concession with docking (no public boat ramp)
--Arsenicker Keys	park headquarters with new administrative, docking, and maintenance facilities, and employee housing	park headquarters with temporary administrative and maintenance facilities and employee housing	park headquarters with new administrative and docking facilities and employee housing	park headquarters with new administrative facilities and employee housing	park headquarters with new administrative and maintenance facilities, employee housing, and NPS boat basin
Bay	continued recreational use, commercial fishing, and special uses	continued recreational use, commercial fishing, and special uses	continued recreational use, commercial fishing, and special uses	continued recreational use, commercial fishing, and special uses	continued recreational use, commercial fishing, and special uses
Barrier System --Lower Keys	natural area open for public boating	natural area open for public boating	natural area open for public boating	natural area open for public boating	natural area open for public boating and guided walking tours
--Adams Key	interpretive and day use area with improved exhibits, trail, picnic area, and restrooms	interpretive and day use area	the major park interpretive center with improved exhibits and trail, viewing tower, expanded picnic area, food vending machines and footbridge to Elliott Key	interpretive and day use area	one of two major park interpretive centers with the same facilities as alternative 2
	ranger station/residence	ranger station/residence	ranger station/residence	ranger station/residence	ranger station/residence

--Elliott Key	foot trail, backcountry camping	foot trail, backcountry camping	interpreted foot trail, backcountry camping	interpreted foot trail, backcountry camping	interpreted foot and bicycle trail, backcountry camping
--Elliott Key Harbor	the major park interpretive center with new interpretive media in redesigned pavilion, interpretive trail, designated swimming/snorkeling area, shower and toilet facilities, picnic area, campsites, and boat tours of bay	the major park interpretive center with facilities similar to proposal, but without improved interpretive media	the major park interpretive center with facilities similar to proposal, but without improved interpretive media and with addition of food vending machines and recreational equipment rentals	the major park interpretive center with same facilities as proposal	one of two major park interpretive centers with all facilities included in proposal and the addition of food vending machines, recreational equipment rentals, and an amphitheater
--University Dock	ranger station, maintenance area, and employee housing	ranger station, maintenance area, and employee housing	ranger station, maintenance area, and employee housing	ranger station, maintenance area, and employee housing	ranger station, maintenance area, and employee housing
	day use area with dock, toilet facility, and picnic area	day use area with dock	day use area with dock, reservations required	day use area (dock removed)	day use area with dock, toilet facility, and picnic area
--Tannehill House	ranger station/residence	removed	removed	ranger station/residence	ranger station/group interpretive center
--Sands Key	natural area, backcountry camping (canal closed)	natural area, backcountry camping, canal access to keyhole	natural area, backcountry camping, canal access to keyhole	natural area, backcountry camping (canal closed)	natural area, backcountry camping, canal access to keyhole
--Boca Chita	day use site with picnic area, interpretive exhibits, toilets, shelter, view tower, and reconstructed boat basin	no public access	no public access	natural area accessible to public	day use site with same facilities as proposal
--Ragged Keys and Soldier Key	natural area accessible to public	no public access	no public access	natural area accessible to public	natural area accessible to public with adaptive use of facilities on Ragged 3
--Stiltsville	Structures removed in 1999	Structures removed in 1999	Structures removed in 1999	Structures removed in 1999	Adaptive use of structures considered in 1999
Reef Tract	continued recreational use and improved interpretation	continued recreational use	continued recreational use	continued recreational use	continued recreational use and improved interpretation
Staff (person-years)	41.2	38.2	39.7	40.4	41.2
Gross Initial Costs					
--Development	\$ 7,621,000	\$ 0	\$ 4,124,000	\$ 3,434,000	\$ 9,399,000
--Interpretive Media	852,000	8,000	245,000	621,000	852,000
--Resource Management	588,000	588,000	588,000	588,000	588,000
Total	<u>\$ 9,061,000</u>	<u>\$ 596,000</u>	<u>\$ 4,957,000</u>	<u>\$ 4,643,000</u>	<u>\$ 10,839,000</u>

ENVIRONMENTAL CONSEQUENCES

Anticipated environmental consequences are based on past experience in park management, review of applicable literature, and consultation with recognized experts and regulatory agencies.

The enabling legislation states that the purpose of the park is "to preserve and protect . . . terrestrial, marine, and amphibious life." Based on this mandate, the proposed and alternative strategies were intentionally designed to have limited impacts on the natural environment. They all contain a comprehensive program of resource management and protection, and they include virtually no development outside of currently disturbed sites.

The major differences among the proposals and alternatives involve six general issues:

Visitor experience. Visitors' satisfaction with their visit to Biscayne National Park will depend directly on available visitor services and facilities, recreational opportunities, interpretive programs, accessibility, and the aesthetic appearance of the park. The proposal and alternative 4 would provide for the best visitor experience based on these factors. The proposal is preferred to avoid the extra cost and environmental consequences of the additional development suggested in alternative 4. Alternative 1 would least satisfy visitors due to the lack of public transportation into the heart of the park, unimproved interpretation and visitor use facilities, and no access to Boca Chita for the boating public. Alternative 3 would be the next least satisfying to visitors due to no development on Boca Chita and a tour boat system that operated on weekends only. Alternative 2 would satisfy the nonboating public with establishment of a tour boat system that operated on a daily basis, but would dissatisfy the boating public with no access to Boca Chita.

Public access. The proposal and alternatives 2 and 4 include a public tour boat system for making the park's various environments accessible to the nonboating public. In alternative 1 there would be no public tour boat system after July 4, 1983, and the park would continue to be used principally by local residents with private boats. Alternative 3 would provide limited public transportation only on weekends.

Development in high-hazard areas. The proposal and all the alternatives retain some development in the designated coastal high-hazard area, where the risk to human safety and property is highest in a major storm. Alternative 1 would perpetuate the highest risk of property damage because of the vulnerability of existing structures to storm damage and the continued existence of structures on the Ragged Keys and Soldier Key. Alternatives 2 and 4 would present the next highest risk, because although many existing structures would be replaced or floodproofed, some development on the Ragged Keys and Soldier Key would remain.

The proposal and alternative 3 would present the least risk of property damage, because in addition to providing for floodproofing of existing and new structures where practicable, all structures would be removed from the Ragged Keys and Soldier Key. Although substantially reduced, the possibility of storm damage to facilities would remain. Risks to human safety under the proposal and each alternative would be mitigated by the provisions of the park's hurricane evacuation plan.

Dredging and filling. Alternative 4 would require dredging and filling of a new boat basin at Convoy Point and would require the removal of some wetland vegetation. Conversely, neither the proposal nor any of the other alternatives would directly or indirectly support occupation or significant modification of wetlands, but rather would enhance wetland values.

Efficiency of operations. Siting and design of new facilities at Convoy Point would contribute to a significant improvement in the efficiency of operations in the proposal and alternative 4, and to a moderate improvement in alternatives 2 and 3. There would be no improvement in alternative 1, due to no change in facilities. Efficiency in response time to emergencies on the reef tract, and in routine patrolling of the reef tract, would improve in the proposal and alternatives 3 and 4 with the adaptation of the Tannehill house for a ranger station.

Degree of development. Alternative 4 would have the most new development, and the proposal somewhat less. Alternatives 2 and 3 would have a moderate amount of new development, and alternative 1 would have the least. However, neither the proposal nor any of the alternatives suggest a high degree of development.

Consequences Common to the Proposal and Alternatives

Impacts on Natural Resources. None of the proposed or alternative actions will significantly affect air quality in the park. Continued NPS participation in reviewing regional air quality permits will assist in preventing deterioration of park air quality from pollution sources outside the park. Monitoring of air quality factors, including background radiation, will enable the National Park Service to detect threats to park resources and act to protect resources and visitor safety.

Construction of new facilities and park operations are expected to have little impact on water quality. NPS dredge, fill, and dock construction will comply with the requirements of section 404 of the Federal Water Pollution Control Act, section 10 of the Rivers and Harbors Act, chapters 17-3 and 17-4 of the Florida Administrative Code, and other applicable regulations. Turbidity during construction will be limited by silt screens or other methods and will cause, at worst, only temporary localized siltation. Dredge spoil materials will be disposed of in appropriately contained upland sites in accordance with federal and state permit requirements.

Operation of NPS sewage treatment and solid waste disposal systems will comply with federal and state regulations and will not pollute adjacent surface or ground waters. The NPS boat basin and maintenance area at Convoy Point will be designed to minimize contamination of waters in the bay. Some release of petroleum products associated with normal boat use and maintenance will be unavoidable but is not expected to significantly affect park resources. Water quality impacts of the pest control program will be minimal.

Most pollutants affecting the quality of waters in the park will continue to come from sources outside the park beyond NPS control. NPS cooperation with regulatory agencies may reduce outside pollution threats, although increasing urban and industrial growth in Dade County will tend to increase the amount of contaminants entering the bay. The adverse effects of sudden freshwater discharges into the bay from drainage canals should be reduced through a cooperative agreement with the South Florida Water Management District.

Regulatory control over commercial and sport fishing in response to periodic monitoring and specific fisheries research will sustain fish populations. Boater education, closure of sensitive benthic areas, and marking of selected coral reefs for interpretation will limit recreational and boating impacts on benthic resources.

There will be no effect from the proposal or alternatives on prime or unique farmland soils, as none exist in the park.

The National Park Service has reviewed Florida's coastal management program and has informally consulted with the Florida Department of Environmental Regulation concerning coastal zone management and management of Biscayne National Park. Based on this contact, the National Park Service believes that the proposal and all alternatives except alternative 4 are in full conformance with Florida's coastal management program. The alternative 4 development concept for Convoy Point calls for removal of approximately 0.3 acre of mangrove vegetation. This action is discouraged by Florida's coastal management program and prohibited by Executive Order 11990 ("Protection of Wetlands") unless no practicable alternative exists. The National Park Service will review the final proposal for management of Biscayne National Park for consistency with Florida's coastal management program and will submit to the state of Florida a formal consistency determination in accordance with the 1972 Coastal Zone Management Act, as amended, and its implementing regulations (15 CFR 930).

None of the other proposed or alternative actions are expected to result in significant long- or short-term adverse effects associated with occupancy or modification of floodplains or wetlands. Rather, floodplain and wetland values will be enhanced by cooperative efforts with other agencies and landowners to protect the mainland salt marshes and mangroves, by interpretive programs (e.g., boardwalks) and recreational activities (e.g., canoe trail) to further the public's appreciation of floodplains and wetlands, and by continued ecological research in wetland processes.

In accordance with the Endangered Species Act, endangered and threatened species will continue to be protected within all areas under NPS jurisdiction. The proposals and alternatives are designed to avoid adverse impacts on listed species and to maintain their habitats within the park. The National Park Service has informally consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service and will continue to consult with them on the management of listed species. The Park Service has prepared a biological assessment (see appendix F) in accordance with section 7 of the Endangered Species Act and has concluded that there will be no new effect on endangered or threatened species or critical habitat from either the proposal or the alternatives considered. The U.S. Fish and Wildlife Service has reviewed the biological assessment and concurs with the Park Service's determination of "no effect" (see U.S. Fish and Wildlife Service memorandum of November 15, 1982, in appendix F).

Impacts on Cultural Resources. Neither the proposal nor any of the alternatives would result in significant impacts on cultural resources.

Impacts on Visitors. The proposed and alternative actions are designed to ensure accessibility for physically disabled visitors to public transportation and visitor facilities, in accordance with the Act of August 12, 1968, as amended.

Visitor safety will be ensured by maintaining preparedness for emergency evacuation in the event of a hurricane or nuclear accident.

Consequences Specific to the Proposal and Each Alternative

Those consequences that are specific to the proposal and each alternative are described in table 7.