

■ ■ ■ *lost your sense of wonder?*



-- Draft Copy --

A PROSPECTUS

FOR THE INTERPRETATION

OF

EVERGLADES NATIONAL PARK

DISCOVER EVERGLADES

A PROSPECTUS
FOR THE INTERPRETATION
OF
EVERGLADES NATIONAL PARK

PRELIMINARY DRAFT

TABLE OF CONTENTS

	<u>Page</u>
<u>PREFACE</u>	11
<u>ABSTRACT</u>	111
<u>INTRODUCTION</u>	1
	Purpose of the Prospectus -- Limiting Factors (Park-wide and by Developed Area)
<u>THE PARK: Its Essence</u>	19
	Significance & Relevance to the Visitor
<u>THE VISITOR</u>	28
	The Nature of the Audience (Origins, Composition, Back- ground, Interests, Attitudes, & Motivations)
<u>THE EXPERIENCE</u>	32
	A Concept of Interpretation/ The Philosophical Context (The Environmental Encounter & Dynamics at the Park/Visitor Interface)
<u>THE OBJECTIVE</u>	36
	Interpretation's Contribution to the Visitor Experience
<u>THE PLAN & Its Execution</u>	41
	Overview
	Interpretive Development Con- cepts (by Developed Areas)
	(1) The Media
	(2) The Methods
	(3) The Staff
<u>THE COST</u>	93
	Estimates for Program Implemen- tation
<u>SUMMARY OF PROPOSALS</u>	94
<u>POSTSCRIPT</u>	

PREFACE

"For his own security, as well as to insure the proper worship of his god, the machine, post-historic man must remove any memory of things that are wild and untameable, pied and dappled, unique and previous; mountains one might be tempted to climb, deserts where one might seek solitude and inner peace, jungles whose living creatures would remind some surviving, unaltered human explorer of habitat and habits of life out of the primeval rock and protoplasm with which she began."

--Lewis Mumford

"There is no grandeur to the Everglades in the sense that one encounters in our mountain national parks. There is little of the intimate charm of the landscapes of northeastern America. The feeling that I associate with this region is more akin to that encountered in the wilder prairies of the west, the great sweeps of grass and sky, here mixed with equally broad horizons of water and endless marches of mangroves....I suspect that some internal receptivity must already exist in the visitor if he is to appreciate this country."

--Raymond F. Dasmann

"A child's world is fresh and new and beautiful, full of wonder and excitement. It is our misfortune that for most of us that clear-eyed vision, that true instinct for what is beautiful and awe-inspiring, is dimmed and even lost before we reach adulthood."

--Rachel Carson

ABSTRACT

This planning report is intended to give some unity and new direction to the program of interpretation and visitor services in Everglades National Park. It reports on the status of existing and programmed facilities, and assesses the role that Everglades can play in terms of a meaningful contemporary visitor experience. It proposes the adoption of an overall environmentally-centered approach to interpretation. It suggests that the significance of the park is as much a function of its proximity to a major metropolitan area, and the consequent urban impacts it receives as to any other factor. The prospectus stresses the importance of developing participatory forms of interpretation designed to involve visitors (many of them young people) with their environment on a simple, sensory level. It suggests that the visitor's attention ought to be directed to the subtle, unspectacular, and often unseen components of this natural world. It also attempts to characterize an ideal, or optimum visitor experience as a fundamentally subjective series of involvements of visitor and environment. And, it recommends an overall concept of interpretation that emphasizes the experiential qualities of wilderness. As a conceptual framework for interpretive development, the prospectus makes no attempt to comprehensively summarize the natural history of the park. It is concerned rather with the reactions of people, and the ways in which their attitudes can be influenced. Many of the approaches to interpretation outlined in this document are purposely of unconventional form and/or content. It is, by intent, concise and non-specific in order to create an atmosphere of creative freedom among media planners and designers.

INTRODUCTION

SCOPE AND CONTENT OF INTERPRETIVE PROSPECTUS

This document is intended as a guide for the orderly interpretive development of Everglades National Park. It is a long-range action plan to which the park is generally committed, but it is, by intent, conceptual and nonspecific in content. This should encourage originality of design and promote a sense of creative freedom among artisans and media representatives involved with the implementation of its proposals. The prospectus is not intended as an inflexible plan. Rather, it is subject to periodic review and revision needed to adapt it to changing conditions. It must be timely and relevant. As it is now constituted, it represents an approach to interpretation considered appropriate to existing conditions and those than can be reasonably foreseen. The proposals made in this prospectus are consistent with the intent and scope of the approved Master Plan and provisions of the Wilderness Proposal. Any constraints imposed by them have been fully considered.

While the prospectus is intended to be an objective evaluation of interpretive development, it will inevitably reflect some of the personal philosophical viewpoints of those involved in its preparation. This should not be considered contrary to the intent of long range planning.

A primary function of the prospectus is to inventory the interpretive resource, identify its major thematic components, and suggest unifying conceptual strands. In addition, it recommends appropriate facilities and services as communications media and outlines critical design parameters. The prospectus provides a philosophical context for interpretive development. The prospectus attempts to characterize both the essential qualities of the Everglades environment and an optimum visitor experience in relation to them.

Many sections of the prospectus are general in scope but for convenience, the discussion of proposed facilities and services is listed by major developed areas. While the access corridor described by the park road passes through two of these areas, it is treated separately. Environmental Education/Interpretation activities will be conducted throughout the park, but they are also covered under a separate heading.

LIMITING FACTORS--GENERAL

A variety of factors--some of park-wide influence and others having only local effect--were considered in the preparation of this document. The following is a resume of the more important ones.

Everglades National Park is a large, geographically diverse, and biologically complex area with limited visitor access and concentrated seasonal use in major developed areas and interconnecting corridors. Its major ecosystems are widespread and often cut across arbitrary administrative boundaries resulting in some overlap in interpretive functions from district to district.

Interpretive development of the Everglades has not kept pace with burgeoning visitation; neither, is it commensurate in scope with the size and world-wide stature of this park. Generally, interpretive facilities are either non-existent or in need of rehabilitation. Often, their design does not reflect the latest developments in media applications.

An analysis of the factors which influence the selection of methods and media brings into sharp focus several basic problems. Visitor "pre-conditioning" is a factor influencing virtually every facet of interpretation. Visitors are generally unprepared to understand and appreciate the fascinating, and often subtle, values of the Everglades. This results from the frequently unseen and intricately structured natural mechanisms operating within the park, the extensive and unrelieved low profile topography, and the virtual absence of any strongly provocative natural scenery. A typical "National Park experience" often includes an emotional response to some superlative natural feature or phenomenon. Much of that appeal is lacking here, and the media and methods of interpretation must in some way compensate for that lack of initial impact.

It is probable that the average visitor arrives with a number of misconceptions about the park and its real values. Many expect to see a dense, forbidding forest of moss-draped cypress trees encircled by quicksand and all manner of vile serpents. Overhead, they may well envision a tropical wealth of parrots, cockatoos, and monkeys. In the absence of the geologic splendor that characterizes many national parks, a sense of disappointment may accompany a visitor on his first trip to the Florida Everglades.

Coincident with the visitor use patterns throughout Southern Florida, but differing from that of most national parks, visitation reaches its highest peak during the period from mid-December to Easter. A slightly lower peak occurs during June to Labor Day period. Records reveal that September and October attract the lowest number of visitors, but visitation begins to climb in November to its mid-winter peak. Thus, public use fluctuates, but the perpetual accessibility of the Everglades requires a continuous, year-round operation.

Heavy rainfall is only one of several limiting climatic factors during the summer period. The rainy season begins in late May and lasts through October, bringing with it hordes of insects and an uncomfortably hot, humid climate. Water levels are highest during these months and wildlife is more dispersed throughout the park, making it difficult to view the large concentrations so typical of the winter months. The motivation of visitors to experience this environment first-hand is slight. Many visitors are willing to bear the discomforts of the summer season for short periods, but generally, they are forced to seek the shelter, and the "sensory deprivation" of the automobile. Summer does have its advantages in the Everglades. Mountainous clouds, lush vegetation, spectacular sunsets, and calm water are typical. It is a time of rebirth and replenishment throughout the Everglades. But, conditions affecting human comfort are generally not conducive to lengthy and in-depth involvement.

The winter climate is very mild. Temperatures are moderate, inclement weather is rare, and bothersome insects are virtually nonexistent. Visitors are more easily persuaded to discover the outdoors for themselves, and all trails and outdoor facilities can be expected to be well used. Infrequent near-freezing temperatures occur, but are of short duration.

Salt-saturated air must be taken into consideration when planning installations, particularly those that will be out of doors. This is especially true at Flamingo, Key Largo, and Everglades City. High humidity, heat, insects, and mildew are important factors to be considered over all parts of the park. Interpretive devices and facilities in exposed areas should be resistant to corrosion and require minimal maintenance. Any material that requires burial in the ground should be salt tolerant. Metals that corrode quickly should be avoided for use for construction where ever possible. Wood, because it weathers rapidly, must be chemically treated to withstand the elements. Electric devices should generally not be used outdoors or in buildings where power for air conditioning is not available.

The unique physiographic characteristics of the Everglades environment often prohibit the use of conventional structures intended to facilitate visitor access. For example, the most feasible way of providing relatively easy and safe access into certain areas is by construction of elevated boardwalks or platforms. Large segments of the park are either totally or partially submerged during much of the year, and may be penetrated only by boat. In each case, the design of interpretive facilities and access routes to them must not compromise the integrity of fragile resources.

The entire area is influenced by swift and natural alterations, often in the form of hurricanes or fire. It is accepted here that this constitutes natural change and interpretation must be flexible enough to opportunistically adapt to those changes. Hurricanes, a potential threat from approximately June through November, can be a major determinant of interpretive development. Interpretive devices located in vulnerable areas must be easily removable in anticipation of impending high winds and water or they must be considered expendable. Strong hurricanes can damage structures severely, and the media in those facilities must be as secure as possible. Nature trails should be designed with the knowledge that hurricanes may alter the natural features along the routes so dramatically that a different interpretive approach or theme must be developed to make the interpretation relevant, or such trails may require relocation.

In general, flexibility and diversity are essential in meeting the interpretive needs of Everglades National Park. This flexibility should be considered from the standpoint of seasonal adaptability, allowing for such factors as concentrations of wildlife, heavy camping, more temperate climate, and older "clientele" during the winter months, and insects, hurricanes, rain, heat, and younger visitors during the summer. Natural alterations caused by high water, fire, and hurricanes may completely disrupt interpretation in any outdoor situation, so alternate sites and media should be available.

The road originating at the main park entrance and terminating in Flamingo is the main artery for visitor circulation within the park. It traverses most of the various natural systems that characterize the park. Along its 38 mile length, the visitor may observe sawgrass marshes, pine forests, ponds and sloughs, hammocks, mangrove forests, portions of the coastal prairie, and the shallow waters of Florida Bay. Unfortunately, its design as a high-speed thoroughfare, and the absence of any visually captivating features (vis-à-vis mountains, canyons, waterfalls) along its route, will make it difficult to slow the automobile-bound visitor sufficiently to engage him in interpretive activities. This situation is further complicated by the fact that a significant percentage of visitors enroute to Flamingo are recreation-oriented boaters. Interpretive development along the Parachute Key-Flamingo corridor must take these factors into consideration. At the present time, there is virtually no interpretive development along the park road, and yet, visitors enroute to Flamingo spend at least one-third of their total length of stay traversing it.

The number of visitors entering the park by boat is also an area that merits special consideration. Everglades is perhaps unique among national parks in that there are virtually unlimited, uncontrolled points

of access by boat. This is particularly true in that portion of the park bordering the Florida Keys and in the Ten Thousand Islands area near Everglades City. Several hundred thousand people are estimated to enter the park in this way each year. Of that number, a very high percentage can be expected to have little or no knowledge of the park. In fact, it is likely that many of them do not know that they are in a national park at all. The difficulty of making any type of meaningful interpretive contact with recreational boaters of this type is obvious, but efforts should be made to develop effective means of communication.

If proximity to massed human population is a defining characteristic, then Everglades can be properly considered an urban park. Well over 2,500,000 people dwell in the four-county area adjacent to the park. More than 60% of that population resides in metropolitan Dade County within 50 miles of park headquarters.

In view of the strong commitment of Everglades National Park to environmental education activities and other outreach programs in the adjacent counties, school children, particularly those in elementary schools, comprise a significant "audience" for environmental education/interpretation programs. At present, there are approximately 130,000 elementary age students enrolled in 172 schools throughout Dade County. In addition, there are another 65,400 students in 111 schools in Monroe, Collier, and Broward Counties. Dade County also has 59 junior and senior high schools with a combined student body of over 111,000, and three colleges and/or universities having a significantly large enrollment. The combined student bodies of the University of Miami, Florida International University, and Miami-Dade Junior College total in excess of 83,000 students.

In reviewing specific local limiting factors (as well as formulating development proposals) the following broad locations should be considered irrespective of administrative boundaries: 1) the glades/pinelands area, 2) the mangrove/coastal prairie/Florida Bay area, 3) the Tamiami/Shark Valley area, 4) the Florida Keys area, and 5) the Gulf Coast area. In addition, the Parachute Key/Flamingo corridor discussed above merits independent consideration. Facilities and services collateral to the environmental education program that may affect interpretive development are discussed under the area in which they are located.

GLADES/PINELANDS AREA

The Royal Palm Sub-District is probably the most heavily impacted of visitor use areas within the park. This is especially true of the Anhinga

and Gumbo Limbo Trails which have received worldwide notoriety through the mass media. In addition, visitor use in the Royal Palm area differs significantly from other districts in that the majority of organized school groups visiting the park spend their time in and around the Royal Palm/Long Pine Key area. The average visitor probably spends more time in the Royal Palm area than any other location in the park.

The Long Pine Key campground, a popular facility in the Royal Palm area, is filled to capacity from mid-December through mid-April. Campers stay in the park for relatively long periods of time during the cool winter months, and thus provide a sizeable "resident" audience for regularly scheduled activities.

The Royal Palm Sub-District encompasses approximately 379,000 acres, mostly covered by sawgrass marsh. Other vegetative elements include hardwood hammocks or tree islands, sloughs and ponds, and rather extensive relict stands of pine. The entire area is extremely flat, periodically and extensively inundated by fresh and brackish water, and extremely difficult to traverse on foot due to the highly eroded surface of the underlying *oolitic* limestone. Much of the substrate is covered by a thin sheet of soil composed largely of admixtures of peat and marl. Deeper solution holes are often filled with thick deposits of peat, or serve as year-round reservoirs for waters captured on their way to the sea.

In the larger glades/pineland area (encompassing the administrative unit referred to as the Pine Island District) the major drainage patterns are eastward through the Taylor Slough and southwestward from the north into the Shark Valley area. Conditions in the Taylor Slough at Royal Palm have resulted in gradual sedimentation, causing habitat changes unfavorable to many forms of wildlife. It is necessary to periodically remove silt and encroaching semiaquatic vegetation to maintain the area as a prime interpretive facility. In addition, the natural flow of water through Taylor Slough is artificially supplemented by input from a pumped well.

MANGROVE/COASTAL PRAIRIE/FLORIDA BAY AREA

Flamingo, located approximately 50 miles from Homestead, and 38 miles from park headquarters, is at the terminus of the main park road and has the only marina facilities between Key Largo and Everglades City. It therefore becomes a natural focal point for visitation within the park. While overnight accommodations and campsites are available at Flamingo, it is primarily a day-use area with considerable water-oriented activity. Flamingo is a prime point of departure for visitor access into the shallow waters of Florida Bay as well as the serpentine inland waterways.

The large campground and the overnight accommodations operated by the park concessioner provide a large resident "audience" for participation in evening programs and other nocturnal activities. Due to the distances and travel times involved, Flamingo is not likely to become a major focal point for school-oriented activities.

That portion of the mangrove/coastal prairie/Florida Bay area that is referred to as the Cape Sable Sub-District encompasses approximately 381,000 acres, at least 75% of which is under water. More than half of the area, including Whitewater Bay, lies in the mangrove belt, which is accessible only by boat. Blanketing the southwestern tip of the peninsula is the Cape Sable coastal prairie, a point of solid ground built up to an average elevation of $1\frac{1}{2}$ to 2 feet above sea level by hurricane storm tides. Typical of the rest of the park, the dominant landscape features are uniformity and flatness. By most standards the topography would not be classed as spectacular and few would call it inspirational. A major interpretive challenge in the Flamingo area is to nurture a sense of appreciation for the qualities the area does possess.

Three major natural communities meet in the Flamingo area--the mangrove complex, Florida Bay, and the coastal prairie. The sprawling mangrove wilderness, interlaced by navigable waterways, is a tangled and virtually impenetrable mass of vegetation. One of the largest mangrove "jungles" in the world grows on the saline lowlands abutting the gulf coastal waters. Proposed boat and canoe trails will assist visitors through this labyrinthian wilderness.

Coastal prairie, aptly called a "wet desert", is characterized by low-growing, salt-tolerant vegetation. It has a marl substrate and the necessary elevation for trails. However, summer rains make routes across the coastal prairie virtually impassable. In addition, any facilities contemplated in this area must take into consideration its ultimate designation as wilderness. While the abundance of mosquitoes and other bothersome insects is a seasonally limiting factor throughout the park, it is especially pronounced in the Flamingo area. Proposed outdoor interpretive developments must take into consideration the inevitable presence of swarming insects, particularly during the warm, wet summer months.

TAMIAMI/SHARK VALLEY AREA

The Tamiami/Shark Valley area is conveniently accessible from U. S. Highway 41, commonly referred to as the "Tamiami Trail" over which more than 10,000 motorists travel each day during the peak season. It is one of the major interconnecting thoroughfares between the east and

west coasts of Florida, and constitutes a major route into the greater Miami and Florida Keys area. Furthermore, it will probably be four-laned within the next few years. Early in 1972, an alternate transportation system into the Shark Valley area was inaugurated. During the first two full years of operation, in excess of 114,000 visitors entered the park in this way. This represented approximately 18% of the maximum potential annual visitation. It can be anticipated that, when fully developed, the Shark Valley area will become the major focal point of visitor activity within the park, and that the transportation system alone will accommodate an average of 26,500 visitors per month during a 10-month operational season. It should be noted that the above figures are based on the limited statistics available at this time, and that projections for future use are based largely upon maximum loading condition with fourteen tram cycles daily.

Three full years have not yet elapsed in the operation of the alternate transportation system. Therefore, no long-range comparison can be made in an effort to predict visitor use trends. However, in view of the number of visitors entering the area during the first two years with virtually no development and relatively little publicity, it is reasonable to assume an annual increase of at least 12% under existing conditions and as much as 25% as development is completed.

Shark Valley is a biologically rich and diverse area. Natural water levels fluctuate seasonally, but due to the artificial canal, and water-filled borrow pits adjacent to the loop road, wildlife is abundant in the Shark Valley area throughout the year. Of course, seasonal peaks do occur, primarily during the cool winter months. In any case, the Shark Valley Slough is one of the finest areas for viewing and interpreting wildlife in the park.

Presently, the visitor is confined to a very narrow corridor defined by the loop road. With due regard to the fragile nature of the resource, means should be sought to draw the visitor away from the road and into more intimate physical contact with the environment. Additional factors which will influence interpretive development in the Shark Valley area are its relative isolation from population centers, and the fact that no campgrounds or overnight accommodations are available within a reasonable distance. Scheduling of interpretive activities must take into consideration travel times to and from the site, and the lack of participants for regularly scheduled evening activities. It is important to note that this condition may not always exist. The Central and Southern Florida Flood Control District has recently announced plans to develop a recreation complex within five miles of the Shark Valley entrance. It would include overnight facilities.

A visit to Shark Valley is an integral part of a cooperative environmental education program developed by the park and the Dade County Public School System. Approximately 10,000 elementary age school children, largely from inner-city schools, participate in this program during the school year. To date, distance has not been a prohibitive factor. This program has been highly successful, but its continuation may be contingent upon the continued availability of federal and/or county funds to provide bus transportation to the site.

The Tamiami/Shark Valley development is adjacent to tribal lands of the Miccosukee Indians. In view of this, and the role that pre-Colombian man has played in the history of the Florida Everglades, this site would be a logical focal point for interpretation of Indian history, lifestyles, and cultural arts. Media planners must be careful to tastefully and accurately treat these subjects. In addition, active Indian involvement in interpretive programming should be sought.

FLORIDA KEYS AREA

Key Largo, one of the upper Florida Keys, is potentially one of the most important orientation locations in the park because of the great numbers who each year travel to Key West and return with little or no knowledge of their proximity to the park. Many of these people will ultimately find their way into the park by boat, but now there is virtually no way for them to acquire even minimum essential orientation and directional assistance. Their impact on the Keys, and therefore on those portions of the park coterminus with them, will undoubtedly increase. However, the total length of stay at the Key Largo development will always be brief. There are no Park Service campgrounds or concession operated facilities at the Key Largo developed area, but there are ample commercial developments near the site. The limited development envisioned here will be exclusively day-use.

Presently, the Key Largo Ranger Station is located on U.S. Highway 1 between Miami and Key West about 40 miles from the main park entrance. The predominant direction of travel on U.S. 1 will influence the efficiency of this contact point. Most travelers will be heading to Key West and may not be inclined to stop, but upon their return northward, an opportunity exists to make some contact with them.

The Key Largo Sub-District includes approximately 350,000 acres, approximately one-quarter of Everglades National Park, but the present land area on Key Largo totals only 18 acres. It is an isolated administrative unit separated from the park on the west by the Inter-coastal Waterway. In spite of its small size, the Key Largo site includes a beautiful hardwood hammock and an excellent example of the mangrove fringed shoreline of Florida Bay.

increase. However, the total length of stay at the Key Largo development will always be brief. There are no Park Service campgrounds or concession operated facilities at the Key Largo developed area, but there are ample commercial developments near the site. The limited development envisioned here will be exclusively day-use.

Presently, the Key Largo Ranger Station is located on U.S. Highway 1 between Miami and Key West about 40 miles from the main park entrance. The predominant direction of travel on U.S. 1 will influence the efficiency of this contact point. Most travelers will be heading to Key West and may not be inclined to stop, but upon their return northward, an opportunity exists to make some contact with them.

The Key Largo Sub-District includes approximately 350,000 acres, approximately one-quarter of Everglades National Park, but the present land area on Key Largo totals only 18 acres. It is an isolated administrative unit separated from the park on the west by the Inter-coastal Waterway. In spite of its small size, the Key Largo site includes a beautiful hardwood hammock and an excellent example of the mangrove fringed shoreline of Florida Bay.

In view of the proximity of this site to heavy, often tasteless, commercial development, care must be exercised in order that the character of the development will reflect a quality befitting National Park standards. Limited space and the problems attendant to intercepting high speed traffic dictate that this development be modest in scope and designed to provide no more than minimum essential interpretation and visitor services.

GULF COAST AREA

Like the Key Largo site, the Gulf Coast developed area, located at Everglades City, occupies a very small administrative site outside the park boundary. It serves as a focal point for visitor activity in the Ten Thousand Islands/Chokoloskee Bay area, and is referred to as the "Western Water Gateway" to Everglades National Park. Sites or features meriting interpretive development are accessible by boat only, including the Sandfly Island National Environmental Study Area. The Gulf Coast site will be largely a day use area with considerable incidental travel generated by its proximity to U.S. Highway 41. No camping facilities are provided by the National Park Service, but there are trailer park developments and other overnight accommodations nearby. Scheduling of evening activities is, therefore, feasible.

Sandfly Island National Environmental Study Area, located a short distance offshore from the Gulf Coast site, has received relatively little use, but increasing emphasis on environmental education activities in the Collier County area will result in it becoming more popular. Due to its insular location, transportation of school children to the study area will be a factor limiting its use.

Visitation to the Gulf Coast area will continue to be highly seasonal. This is particularly true of retirees who constitute the major portion

of the winter population of Everglades City and Chokoloskee Island. Also, salt-laden air, hot and humid weather, and proliferations of mosquitoes will always constitute seasonal limiting factors in the Gulf Coast area.

THE PARK

Few of the classic elements of a national park are embodied in the Everglades. Instead, it is a land of subtleties. Notably lacking are the impressive geologic features that give relief to eye and landscape, and that so often have dominion over living systems. Here, the earth blends indistinctly with the water and the evanescent sky. Their uniform appearance belies a diversity of life forms characteristic of few other places on this continent.

Unlike most of its counterparts in the National Park System, Everglades is almost exclusively a biological park dedicated to the preservation of a complex and precisely ordered living mechanism. It is a place of common, though often ill-defined, boundaries. It lies at the interface between temperate and subtropical America; between land, sea, and sky; between fresh and brackish water; between shallow terrestrially influenced embayments and deeper gulf coastal waters; between the insidious sprawl of urban development and wilderness; and between pre-Colombian and modern human cultures.

While other landscapes were forged in a crucible of fire and ice, Everglades is the offspring of a primal alliance of earth and the cradling sea. Its subdued topography is indicative of geologic stability. The wealth of plant life it supports provides virtually the only variation in its otherwise broad, featureless surface. From the wave-stroked beaches of Cape Sable to the nearly imperceptible currents sweeping over Shark Valley, the cyclic ebb and flow of water and miniscule variations in the landscape are of signal importance in determining the nature of this park. Ironically, fire, more often than not considered the bane of field and forest, is the third part of this elemental triumvirate.

It would be folly to philosophically argue the value of parks in the absence of people. Man is as much a part of the Everglades and the kinds of places and things that it represents as any other creature. Unfortunately, it is a truth of this century that man seldom walks quietly and unnoticed upon the earth. In his often mutually exclusive role as consumer and conservator, modern man has irrevocably altered the destiny of the Florida Everglades. That Everglades is a "disarticulated" ecosystem is due largely to man and his activities within and beyond the boundaries of the park.

Everglades National Park is more than a place in which to relax and have fun. It is a wellspring of clean air, fresh water, and open space that nourishes a great proliferation of life. It ministers as well, to some of the less tangible human needs by providing man with a sanctuary from the endless noise, the foul air, the burgeoning crowds, and the accelerated pace of modern urban life. It serves as an environmental counterpoint to the largely synthetic, day-to-day world of most of its visitors, and it can be a benchmark against which they can measure the tenor of

their life and times. It can be a pathway to new environmental encounters. Here people can confront, possibly for the first time, a natural world of which they may know very little and which may, at once, seem inviting and alien. It is a place where man and nature can renew a close and timeless relationship--one that man too often chooses to disavow. It is a place where visitors may "acclimatize" by becoming involved with the simple sensory pleasures of seeing and hearing and feeling, and just being alone for awhile with a little bit of the earth and the sky. Most of all, it is a place where, out of that involvement, may come a growing understanding, respect, and concern for the environments of man--the natural one and those of his own design. As an altered natural system, Everglades can serve as an environmental baseline against which other deteriorating ecosystems can be compared. Not unlike the "miner's canary", a healthy, flourishing living system will begin to fail if subjected to inimical and often unseen forces.

There would be little purpose in attempting to comprehensively reconstruct the complex human and natural history of the park in this document. Many others have studied and written prolifically about the Everglades region. The following summary of some of the principal facts is in line with the intent of the prospectus. Media planners requiring more specific information should refer to the publications listed in the bibliography appended to this plan.

The park is actually a shallow basin tilted to the southwest and underlain by extensive deposits of Pleistocene-aged limestone. The Miami limestone consists of an Oolitic and a Bryozoan Facies with the latter predominant in the basement rock of the park. Interestingly, these two components of the geologic foundations of the park are of inorganic and organic origin respectively. Schizoporella floridana, a multi-laminate Bryozoan, is responsible largely for the production of that portion of the Miami limestone underlying the park. While peninsular Florida is geologically young, it is among the more stable portions of the continent, having undergone no significant structural change for many years.

Geographically the Everglades are temperate, but biologically they are strikingly similar to the subtropical West Indies...having attracted hundreds of colonial forms. Many of the plant and animal species found in the park are at the limits of their ranges. The biota has great variety, and an ironic mixture of rare and abundant life forms. Complexity, diversity, high numbers of species, and low entropy, generally indicators of environmental stability and resistance to detrimental factors, further characterize the Everglades. There are, in fact, interesting and significant contrasts between natural diversity within the park, and the tendency to synthetic uniformity in the world that man has built for himself.

Within the park there are five discrete vegetative types. Hammocks are tree islands that are generally composed of mature mixed hardwoods. Bayheads are tree islands generally consisting of isolated stands of

specific species, i.e., cypress or willow. Pinelands, consisting predominantly of south Florida slash pine, occupy elevated outcroppings of the Miami limestone. The coastal mangrove area, composed largely of black, red, or white mangrove or mixtures thereof, is probably the largest mangrove forest in the world. Sawgrass, actually a sedge, covers extensive lowland prairies to the north and east.

Hammocks, bayheads, and pineland areas are generally elevated or otherwise vary sufficiently from the datum plane to be insulated from the effects of flooding and protected from fire. Bayheads, consisting predominantly of one or two species, occupy either slight elevations or depressions (e.g., bay trees generally predominate in elevated deposits of peat and cypress trees in shallow ponds). Mangrove and sawgrass areas are periodically or perennially inundated by shallow water.

The great floral variety of the Everglades is one of the key reasons for the establishment of the park. Among the more prominent and colorful plants are the Bromeliads and epiphytic orchids. As many as 25 orchid varieties are known to occur within the park. There are over 1,000 kinds of seed bearing plants, and more than 120 species of trees, both tropical (palms, gumbo limbo, mangroves) and temperate (ash, mulberry, and oaks). Even plants ordinarily associated with the hot and arid deserts, i.e., cactus, yucca, agave or century plant, thrive in certain parts of the park. Woody and herbaceous vines, including the noxious and cosmopolitan poison ivy, are significant elements in the forest understory.

Several factors are significant determinants of the vegetative composition of the park. Naturally caused fires, or the lack of them, slight elevations or depressions in topography, and water are critical factors. Water is perhaps the most important, in an area which often receives in excess of 60 inches of precipitation annually, and which has from prehistoric time received periodic overflows from Lake Okeechobee and its watershed to the north. The nature of the substrate has, in turn, had important effects on the water regime in the park. The ordinarily highly porous limestone is overlain with variable thicknesses of marl and peat which minimize water loss through seepage. Other elements altering the vegetative composition of the park have and will continue to include inland penetration of sea water as a result of lowered water tables and canalization, hurricanes, and the proliferation of exotic species such as Australian pine and wild tamarind.

In addition to the terrestrial systems, there are at least four distinctively different aquatic community types within the park: the inland fresh water areas consisting of broad, shallow "rivers", small scattered ponds, and alligator holes; the brackish water or estuarine areas where fresh and salt water merge; shallow shoreline and offshore embayments; and, the deeper gulf coastal waters. As might be expected, fresh water and marine fishes and invertebrates abound in these areas. In addition, the area of transition from glade to mangrove--fresh to salt water--is an incredibly rich and productive zone incubating great numbers of life forms.

Florida Bay includes some 800 square miles of very shallow embayment overlaying unconsolidated calcareous sediment on the surface of the colitic facies of the Miami limestone. Its maximum depth varies from 8 to 9 feet and its average depth is 4 to 5 feet. The bottom is irregular consisting of anastomosing mudbanks on some of which mangroves and other brackish water plants have pioneered to form small keys or islands. The waters of the bay are considered one of the most productive natural limestone "factories" in the United States.

Everglades is a haven for over 25 rare and endangered species. There are only about 25 native land mammals, including two marine forms (the manatee and the bottle nosed dolphin) endemic to the park. Of the approximately 60 known species of reptiles and amphibians, 23 snakes including four poisonous varieties, and the American alligator and crocodile occur in the park.

Everglades is probably best-known for its varied and kaleidoscopic seasonal displays of birdlife. Over 300 species of birds, many of which are extremely rare, have been recorded within the park. One of the chief reasons for the establishment of the park was growing concern that rookeries of herons, ibis, and other wading birds be protected from the decimating effects of commercial exploitations, encroaching developments, pollution, and other deleterious human factors. Ironically, thousands of human beings now seek the sanctuary of the park to escape similar problems in the synthetic world they have built. The ultimate significance of Everglades and places like it may be that they are the last refuge, not of eagles and wood storks, but of man himself.

The intermingling of species and the tendency to greater numbers and varieties of life forms at the shared boundaries of coterminous communities--a phenomenon known as the edge effect--is well illustrated in the Everglades. Species that one would ordinarily not expect to find sharing the same habitat are commonly observed together. Oddly, there are also some fascinating analogies between biological phenomena in the Everglades and in the southwestern deserts, the sub-alpine timberline, and the subterranean world. Living conditions in each of those systems frequently require more diverse and often bizarre morphological and physiological adaptations of plant and animal species.

Archeologists are uncertain when the first pre-Columbian men reached Florida, but they were linguistically related to tribes speaking the Muskogean dialect and are referred to generally as "Glades Indians". They are known to have used fire and made clay pottery for use as cooking vessels. They erected mounds of sand and shells as places of worship to their primitive pantheistic deities, to elevate their simple bark shelters above water level, and to honor their dead.

They were independent, territorial, and prone to war with both early Spanish explorers and internally among smaller tribal groups. The two principle sub-groups to which some tribal lineage with the modern Miccosukee group can be traced were the Tequesta and the Calusa. Actually,

the Miccosukee tribe is more closely related to the northern Creek Indians of Georgia and Alabama, and did not reach southern Florida until after the American Revolution. They moved progressively deeper into Florida and eventually conquered or intermarried with the remnants of the earlier Calusa tribe.

The Miccosukee Indians of today are a proud and still fiercely independent people. They shun contact with other Florida Indians, and cling to a life-style not unlike that which enabled their forebears to thrive in an environment considered inhospitable by many standards. Their ability to live with their environment rather than apart from it, and their simple celebration of the earth are qualities too often lacking from our lives.

The human history of the Everglades region is not limited to aboriginal cultures. Among other things it includes settlement and attempts to farm and fish along the Gulf coast, military expeditions during the period of the Seminole wars, visits by distinguished naturalists, periods of wholesale slaughter of birdlife by commercial hunters, and limited but profitable timber harvests.

It is significant to note that visitors may be more captivated by the stark contrasts between the Everglades and other parks within their experience than by any other factor. It is a very different kind of country, and in its lack of sameness lies its real fascination.

THE VISITOR

The more than 1-3/4 million people who annually enter Everglades National Park are not altogether unlike the typical vacationing traveler visiting elsewhere in the National Park System. However, there are a few significant differences that bear on the interpretive proposals in this document.

Total annual visitation has exceeded one million since 1966. During 1972, over one million, seven hundred seventy three thousand visits were recorded, and of that number, a surprising 39% (692,851) entered by boat. Also, a consistent and relatively large percentage of automobile entries are made by individuals with boating interests. As indicated earlier, a very small percentage of these recreational boaters are presently contacted during their visit.

Due to its proximity to urban centers, a significant number of annual visits are from those areas. This is particularly true of the Miami and Miami Beach areas because of their heavy commitment to tourism. In addition, location adjacent to several sizeable communities contributes to a substantial level of return visitation, both by regular groups and students involved in cooperative environmental education activities. During the six month Environmental Education Program of 1973/74, between 13 and 14 thousand participating students will visit the park. With 200 as the average projected number of days per year during which this activity can be conducted under the quinmester system, as many as 24,000 young people will be transported to the park each year.

Another factor which should be considered is the rather distinct difference in age and general makeup between summer and winter visitors. Retirees constitute a major portion of the winter "audience". Their average age levels are considerably higher and they are generally more placidly oriented insofar as involvement in activities is concerned. However, their average length of stay, and therefore the time during which they can be involved, is as much as twice that of the summer visitors. The summer visitor is generally younger, more active, and participant-oriented.

The near uniformity of climate throughout the south Florida region contributes to a year-round pattern of visitation. The seasonal extremes that characterize many of the northern parks do not manifest themselves here; rather, there are only slight variations in temperature and other weather determinates from winter to summer. Travel variations at Everglades are determined more by climatic changes elsewhere in the country than by the subtle ones that take place here. Even so, there are three distinct travel "seasons" signaled by marked increases or decreases in visitation.

The peak season begins on or about December 15 and extends through April 15. This is the period that corresponds with the summer season in many northern parks although it is of obviously longer duration. The summer, or slack season, begins on or about April 30 and extends

through September 1. Travel generally declines during the warmer, mosquito-ridden summer months when the cooler northern parks are more readily accessible. The third distinct season at Everglades coincides approximately with the beginning of the traditional academic year on or about September 15. This period extends through approximately April 30, overlapping with the heavy travel season, although not significantly increasing daily visitor loads.

Park visitors probably conform to typical visitor profiles in that they are generally from urban settings, and with above average educational and income levels. It is likely that a higher percentage of visitors arrive in Everglades with some level of informed interest than in many other National Parks. This is particularly true because of comprehensive nation-wide publicity given to environmental problems exemplified in the Everglades, e.g., the jetport controversy, fire and drought problems, near extinction of species, proposed establishment of a Big Cypress National Fresh Water Preserve, etc. While many visitors may be generally better informed about the park prior to their arrival, that knowledge is likely to be rather superficial and acquired through the mass media. As mentioned earlier, it can be expected that a great many people will be armed with misconceptions about the Florida Everglades.

A significant percentage of visitors to Everglades are of foreign origin. In Dade County alone, approximately 15% of the population is comprised of resident aliens and greater Miami is a bilingual city. Media specialists should give strong consideration to the development of at least some multi-lingual interpretive facilities. Spanish and French are the predominant foreign languages.

Over 35,000 trailers, and other recreational vehicles, entered the park during 1972. While this figure comprises only about 2% of the total visitation, it is further indicative of the recreation orientation of park visitors. Furthermore, the vast majority of this trailer use is concentrated into the five month period of December through April. Many of these trailer campers stay the maximum allowable time (14 days) in park campgrounds and are potential participants in virtually all interpretive activities scheduled during that period. This is especially true of regularly scheduled evening programs, and further emphasizes the desirability of program variety.

THE EXPERIENCE

There are different levels of emotional and intellectual involvement to a visitor/environment encounter in Everglades National Park. One is a subjective and purely sensory response to the visual sweep of the glades and their incredible wealth of life forms. Another involves the acquisition of basic knowledge about the park. The third involves an assessment of values...a thoughtful personal consideration of the meaning of parks and the kinds of places and things they represent in the light of present and future human experience.

At the first level of involvement little or no interpretation is required. It is sufficient that the visitor be provided with suitable and relatively easy access to the best possible vantage points. The perception of beauty is intensely personal, and it would be a presumption to place signs, markers, or other devices between the visitor and the scene. Interpretation should do no more than contribute to a reflective atmosphere or mood. When it is attempted, it should be subdued and unobtrusive. The visitor should be free to respond to what he perceives in his own way...to react, without interference, to the harmonious natural orchestration that is uniquely the Everglades. In many respects this is the key experience in which the visitor is totally enveloped by the sights and sounds, the taste, the aroma, and the feel of the environment. It is an experience that will focus attention on the multitude of small things of which this great park is made. It is at this level that one can recapture, if only for a moment, the excitement, the sensitivity, the simple understanding, and the "sense of wonder" of the child.

Having been exposed to the initial sensory impact of the park, most visitors will become inquisitive about the secrets it harbors. It is at this level that interpretation begins to reveal the subtle complexities of its human and natural history. In its conventional role, interpretation provides the visitor at this level of involvement with basic factual information about the park, its plants and animal life, and its history of human habitation and use. It generally does so through a variety of traditional and proven activities and services.

A growing realization of some of the important and fundamental concepts underlying the chronicle of facts signals the attainment of a more abstract level of involvement. At this point the thoughtful person begins to infer relationships between the Everglades story and his own life and times. Interpretation at this level should stimulate the visitor to consider some of the less obvious and intangible values of the park experience. It should not, and need not be contrived. It should serve merely as a catalyst, leading the visitor naturally and logically to a revelation of certain relevant truths.

An ideal experience would be a composite of each of these types of involvement. Every visitor should have the opportunity to physically and emotionally react to the impressive dimensions and beauty of the

Everglades. He should have an opportunity to learn something about what they are, and how they came to be; and, most importantly, he should be encouraged to consider in what ways Everglades National Park is pertinent to our changing times. All interpretive facilities and services will in some way clearly relate to achieving this optimum experience for as many park visitors as possible. There should be a progressively more active, personal involvement as the visitor moves more deeply into the park from various points of access. The experience should be characterized by a general slackening of pace, decreasing emphasis on the automobile as a viewing platform and means of transportation, and a growing sense of personal expectation and discovery.

Among other things, visitors should be encouraged to consider something of the dynamics of change. In the natural order of things, impermanence is a common quality, and the inevitable consequence of natural process. The mechanisms of change are inalterably related, one to another, and there are significant parallels between natural and socio-cultural changes. Geological process, past and present, subtle and catastrophic, is among the most significant determinants of environmental structure.

Man, once merely a witness to change in the Everglades, has become a perpetrator of change...a powerful biogeological force acting on a landscape and biota that have remained relatively stable and unaltered for considerable time. Changes now occur at a much faster rate under the influence of man, and often, they are less than benign.

Among animals, only man may choose to live harmoniously with nature, or to willfully and aggressively manipulate it for his exclusive benefit. Implicit in his decision must be an understanding that there is a critical point beyond which he can no longer profitably alter his surroundings...a point which may, in fact, be a benchmark for his accelerated demise as a successful organism.

Interpretation will be concerned with engendering an understanding of the past and present plant and animal life of the Everglades; changes in the biota induced by and coincident with changes in the landscape; and, plants and animals as agencies of change. It will be generally concerned with the concept of geologic control of the environment, and its corrolary, environmental control of human affairs. It will emphasize the emerging role of man as a potent force capable of greatly accelerating natural rates of change. In addition, it will suggest that unless man learns to understand and wisely use his powers, he may quite suddenly (or slowly and inexorably) be engulfed and destroyed by changes of his own making.

THE OBJECTIVE

The interpretive program should contribute to a visitor experience in three major ways: it should provide essential information and orientation services; facilitate the physical interaction of the visitor with the environment; and foster the intellectual involvement of the visitor through a meaningful revelation of park values.

Major objectives of the program are to:

1. Provide essential recreation-related information necessary for the safe and enjoyable utilization of park resources and visitor use facilities.
2. Interpret the various elements of the story in ways which will emphasize the composite nature of environments and the importance of natural complexity and diversity.
3. Introduce visitors to the concept of nature as a dynamic process producing real and measurable by-products of importance to man, and that man's well-being is inexplicably tied to the health of the environment.
4. Develop imaginative approaches to interpretation that will encourage visitors to spend some time reflecting about meanings, values, and relationships.
5. Build "bridges of understanding" over which visitors--particularly young people--may freely move between the natural environment represented by the park, and the synthetic environment represented by the school, the city, the community, and the home.

Among the things that interpretive facilities and services should be designed to do are the following:

- Introduce visitors to the major ecosystems that comprise the park, and to communicate an understanding of their components and how they function.
- Begin to develop an appreciation for the natural complexity, diversity, and interrelationships that exist within those systems.
- Convey the idea that the real fascination of a place like Everglades often lies concealed in its subtleties, and that it is outside, away from the insulation of the automobile and other human artifacts that a virtually endless array of discoveries can be made.
- Suggest that to more fully experience the Everglades one should try to expand his awareness of the environment by being more openly receptive to the sensory impressions continually emanating from it--the sights, the sounds, the odors, the textures: to try to respond with the uninhibited and sharpened sensitivities of a child.

Ideally, interpretation of essentially intangible concepts should be approached through personal contacts with skilled interpreters in the field. Realistically, this cannot be expected to happen for the large majority of visitors. Interpretive facilities and services should be designed to begin a process of provocation and personal discovery.

Too often, interpretation of natural history relates to the rare and extraordinary, or involves the visitor with esoteric detail not within his personal experience. The visitor's interest may be sparked by the display of things, which in spite of their prevalence, he may have little real opportunity of seeing. Indeed, the inference that he may see the same thing "in-the-wild" may be quite strong. A certain animal or other subject of interest may well be common in the park but, by habit, choice of habitat, or location, it may be infrequently observed even by trained park personnel. Interpretation ought to focus instead on the common-place and unspectacular. Further, it should suggest that there are many other ways to "observe" things than by seeing them. It should do more than identify and instruct. It should encourage reasoned inquiry about fundamental concepts, and foster informed concern about environmental quality.

The effectiveness of the program will, in large measure, be determined by the extent to which it is:

- INTRIGUING --Does it excite interest and curiosity?
--Does it capture the visitor's attention?
- IMAGINATIVE --Does it communicate in innovative ways, and does it stimulate new and different ideas or concepts?
--Does it cause the visitor to look at familiar things in different ways?
- INVOLVING --Does it invite or encourage visitor participation?
--Does it draw the visitor into intimate personal contact with things so that he is more than a spectator?
- INFORMATIVE --Does it convey meaningful information, or new knowledge about the park and the kinds of places and things it represents?
- INFLUENTIAL --Does it effect significant changes in visitor attitudes, or generate new ones?

While the magnitude and primitive character of the country are formidable barriers to the passage of most visitors, it is accessible at the expense of a little time and individual effort. The interpretive program should be designed to moderate the pace of the visitor and to encourage him to get away from roads and cars and into more intimate physical contact with the environment. It should cause the visitor to consider his inalienability from the rhythmic ebb and flow of nature--his relationship to, and dependence on, the complex biogeochemical cycles which comprise the world about him. Above all, it must establish obvious

ties between the park and the life and times of the visitor. A sense of contemporary relevance is an essential ingredient without which his encounter may be fleeting and superficial. Nurturing such an impression is clearly an objective of interpretation. It often will be concerned more with engendering feelings than with the pure transfer of meaning. Interpreters should be like planters of "winter wheat"...sowing seeds of knowledge and experience that will grow and ripen into fuller meaning with the passage of time.

Virtually all of the proposals in this document are based on the assumption that there is no really effective substitute for face-to-face contact between two people. In recognition of that fact, one of the major program objectives will be to emphasize those forms of personalized interpretation which encourage the mutual involvement of visitor and interpreter.

THE PLAN

OVERVIEW -- MEDIA AND METHODS

The resources of the park are diverse and can be interpreted through a range of media. There will be road and trailside exhibits, amphitheater programs, conducted walks and tours, information desk functions, publications, and other conventional forms of interpretation. Frequently, however, they will be characterized by unconventional content. In-depth interpretation, particularly as it relates to the thematic aspects of the story, will be approached primarily through film, personal service, and publications media. The exhibit format is better suited for the presentation of facts about things that can be seen, or touched, or otherwise physically experienced. Exhibits can, however, through the use of carefully written and provocative texts, allude to the broader implications of the story. Whenever possible, label copy as well as tour commentaries, talks, and other presentations should cause the visitor to see relationships of the specific subject matter to the larger and more important concepts.

A spirit of continuous innovation will characterize interpretive programming, particularly in those activities involving personal contact. Many guided activities will not be governed by pre-established routes and destinations. Neither will there be specified durations or other limitations (except in very general terms and with adequate consideration for visitor safety and/or the fragility of the area). This type of flexibility is considered critical to a sense of unencumbered involvement. The visitor and the interpreter might just "wander" for an hour or two in some selected section of the park discovering things together as they go. In this type of activity, the interpreter is less a guide than a participant. Although he knows generally where he is leading the group, the things that will be seen, and what he will talk about, there is an element of mystery, excitement, and spontaneity in this type of opportunistic interpretation.

Early morning and evening activities will be emphasized. Because of the crepuscular habit of many of the park animals, wild life viewing opportunities are especially good at those times. Furthermore, lighting conditions are generally better for photography during the twilight hours. Moonlight walks or hikes can be especially revealing of different moods in the Everglades, and they provide opportunities for directing attention to the impressive evening skies that are so characteristically a part of the Everglades scene. One is likely to have a totally different set of responses in the relative stillness of night. The beauty is unchanged, but the perspective and feeling of scale are altered.

Emphasis will be placed on drawing visitors away from roads and other areas of concentrated human activity and, in a very real sense, into the environment. Immersion, or other sensory involvement activities, are among the most productive of positive visitor response, and add a new dimension to a park visit. Whenever and wherever possible, "off-trail" activities such as "explorer" or "discovery hikes", rambling ecology walks, or "surprise" walks to a favorite spot of the naturalist

provocative, but modest in scope. Its intent should not be to hold visitors inside for any length of time. Rather it should kindle in them a desire to move back out of doors to strike up a more intimate acquaintance with things about them.

Insofar as exhibits are concerned, they should be topical, and not attempt to unfold the continuous or developmental narrative of the park story. Rather, they should reveal the colorful and captivating ways a few interesting, and possibly little known facets of the natural environment, with the aim of piquing interest and encouraging further investigation along the park trails and waterways. The precise form and dimension of interpretation within the existing and proposed visitor facilities will be determined later by media planners from the Harpers Ferry Center. This document will suggest only a few possibilities.

The visitor centers at Parachute Key/Headquarters, at Flamingo, at Tamiami/Shark Valley, and at Everglades City should have auditoriums for the presentation of audio-visual programs. There is a large auditorium (100 seats) and highly sophisticated 35mm. motion picture projection system in the main park visitor center at Parachute Key. Elsewhere, seating capacities need not be as large, nor are complicated sound and visual systems contemplated. In all facilities where exhibitry may involve audio devices or where audio-visual programming will be scheduled, acoustical treatment and carpeting is essential.

A wide variety of experimental facilities, activities, or services will be scheduled from season to season. Among other things they may include: observation of nocturnal wildlife under visible red illumination; use of periscopic underwater viewing devices; recreation demonstrations of activities such as canoeing, fishing, and backpacking; photo and sketch walks; development of "trysting trails", etc. Also, the park will continue its commitment to areas of special program emphasis utilizing volunteer services. Among the more important of those activities will be an artists-in-the-park activity designed to encourage creative expression of painters, writers, musicians, and other artisans. Bicycle oriented activities, and the development of bicycling trails will be emphasized. In addition, there will be continued and expanded use of closed-circuit television and audio (radio) guide systems where appropriate.

Most visitors will have certain common needs for pure information about their visit, i.e., location of facilities and services, schedule of activities, etc. Their information needs must be satisfied before they can be involved with the park on an intellectual/emotional level. In recognition of this, all major visitor centers and/or contact stations will have an information desk or the equivalent thereof.

Specific proposals for interpretive development are outlined on the following pages. They are listed under the heading of developed areas in which they are, or ultimately will be located.

GLADES / PINELANDS AREA

Parachute Key: The Visitor Center near the main park entrance is probably the single most important point of visitor contact. Due to its location, it intercepts a significant percentage of the total number of visitors entering the park by automobile. It is a point at which the first visitor contact with a uniformed representative of the National Park Service may be made. In addition to meeting the visitor's needs for information about facilities and services available to him, the interpretive development of the visitor center should begin to establish the "mood" of the Everglades and the visitor's impending experience.

Within the past two years, the Parachute Key Visitor Center has been totally rehabilitated. Presently it is dominated by the central theme exhibit. It is a simple but massive structure which attempts to illustrate the "bloom of life" which is the essence of the Everglades story. The sculpture is rendered in aluminum and plexiglas depicting a number of common Everglades life forms in silhouette. They emanate from a central axis which implies their dependence on the basic underlying rock (pieces of oolitic limestone). Water is symbolically interwoven by means of blue neon lights illuminating the central axis, and connecting all of the elements.

A large painted mural panoramically depicting the variety of Everglades landscapes occupies one interior wall of the visitor center. It is augmented by hand-held audio devices through which visitors hear a message intended to establish some continuity between the abstraction of the sculpture, and the audio-visual experience they are about to have in the auditorium. The message briefly orients the visitor and explains something of the major community types within the park, i.e., the "true" sawgrass Everglades underlain by massive pock-marked limestone, the jungle-like growth of tropical hardwood hammocks, the diminishing stands of slash pine, the coastal mangrove forest, and the interrelations of all of them to water and fire and elevation.

Along the interior walls of the auditorium are located several unique aluminum and plexiglas exhibit cases that vertically display the colorful variety of tree snails (Liguus sp.) that exemplify the fascinating diversity of smaller life forms in the park. They are unidentified by label copy, and are intended to serve only as colorful intermediaries between the visitor and the larger implications of the park story. The cases in which they are housed serve both as exhibit structures and as room lights which are automatically dimmed and brightened before and after the motion picture.

The visitor center also includes a new information/sales desk from which information is dispensed and interpretive publications are sold by personnel representing the National Park Service, the Everglades Natural History Association, and/or the park concessioner. The desk includes an integral publications display and adjacent to it are two free-standing display racks. Above the desk are located large scale maps depicting

points at which concentrations of wildlife may be expected and facilities available to the park visitor. A similar facilities map is located outside for the use of visitors arriving after hours.

A complete closed-circuit television system, with color video tape recording and play back capability is installed in the visitor center. To date, it has not been extensively used, and additional applications are recommended. A series of brief (less than five minutes) video tapes depicting a variety of interpretive activities available in the park should be prepared to assist personnel at the information desk in answering visitor questions. In addition, the TV system might well be used to provide a continuous scan of the winter and summer schedule of interpretive activities in the manner that aircraft arrival and departures are screened in air terminals. The television system can also be used to replay tapes of brief, largely non-verbal films on environmental issues, i.e., "For Your Pleasure", the environmental awareness fingerpainting film, etc. At present, 21-inch monitors are mounted flush with the walls on either side of the entrance to the auditorium. They are too high to be clearly seen and should be moved to a better location which would enable a larger number of people waiting to see the film in the auditorium to view them.

A wide variety of interpretive publications and theme-related items will be made available for sale to interested visitors. Publications will cover general areas of interest in natural history, the history of human use and habitation, and various other environmental issues. Interpretive personnel, and other specialists, will continually review publications for quality, technical accuracy, and to assess their potential as meaningful adjuncts to interpretation. Publications will generally appeal to a broad segment of the public, but occasionally titles of a more technical nature will be offered for the benefit of specialists or the serious amateur. Posters, decals, shoulder patches, and other graphic material will be sold when appropriate.

A unique, multi-screened motion picture is intended to serve as the primary interpretive vehicle in the Parachute Key Visitor Center. The film was originally conceived as an ultra-wide screen, three-image 35mm. film with a stereophonic sound track. As an interim measure, due to delays in acquisition of projection equipment, the film was converted to 16mm. and is being projected at lower than acceptable quality standards at this time. Commercial 35mm. projection equipment will be installed at the earliest possible date. In addition, it is critically important that the auditorium be acoustically treated by the application of carpeting or other materials to the rear walls, including the face of the projection booth. Better light and sound baffles are also required at the entrance to the auditorium. Projection equipment of the type planned will require the services of a full-time, professionally trained projectionist (A/V Technician). This position has been requested in a 10-237 submission.

The intent of the motion picture is to begin to generate a "feeling" for the Everglades; to communicate an understanding of the roles of water, fire, elevation, and climate in its composition and welfare; and to dispel the prevalent misconception that parks are unaffected by the activities of man, especially those occurring beyond their boundaries.

While the auditorium will be used primarily for screening the above film, the projection booth must also be equipped for conventional 35mm. slide and 16mm. film projection systems. Also, the auditorium will occasionally be used for "live" programs, teacher workshops, in-service training activities, etc. Because the closed circuit television system may have applications to those activities, the projection booth and the stage area should be appropriately wired and an additional camera and monitor system acquired for portable use. A wireless microphone system is recommended for installation in the Visitor Center and at Park Headquarters.

An audio tour of the main park road (described in greater detail under the Parachute Key/Flamingo corridor) is available for rental at a nominal fee at the Parachute Key Visitor Center. A taped tour will be continued pending successful trial installation of a limited range AM radio transmission system (Parachute Key/Flamingo corridor). Information about the operation of the radio guide system will first be made available to the visitor at the information desk. In addition, it may be necessary to install a sign or signs in the parking lot to further alert motorists to turn their radios to the proper frequency.

Information relative to the alternate transportation system--its arrival and departure times, destination, and capacity--will be made available to the visitor at the information desk. This system (electric trams) is discussed in greater detail in another section.

Royal Palm: The Royal Palm area is probably one of the best-known and heavily visited sites within the park. Peak loads during the season may exceed 5,000 visits daily with hourly peaks of 1,200 to 1,500 visitors. The famous Anhinga Trail offers unexcelled opportunities to view, at close range, a microcosm of the Everglades system. At few other locations in the park is there such a concentrated and varied "living exhibit" of so many ecological mechanisms. As the Anhinga Trail and the Taylor Slough exemplify the aquatic systems in the park, so the Gumbo Limbo Trail illustrates the nature and composition of the multitude of tree islands. A small and inadequate visitor contact station, a few wayside exhibit panels, and a series of substandard metal photo labels are all that now interpret this important area.

A complete rehabilitation of the Royal Palm facility is in progress. Interior exhibitry, rendered in the unusual and highly stylized art of Mr. Charles Harper, will depict areas typified by the Taylor Slough as they appear at different seasons. One exhibit unit will be devoted to hardwood hammocks of the type through which the Gumbo Limbo Trail passes. In each case, the panels will depict a vertical cross-section of both the aquatic and the terrestrial habitats, and will be accompanied by overhead panels suggesting what one might see looking upward through the surface of the water or the canopy of trees. Visitors will pass through the interior of the building on a slightly elevated wooden boardwalk. Brief and carefully written interpretive labels accompanying each exhibit panel will be mounted on the railing of the boardwalk. They may utilize the silhouette technique to identify various species depicted in the panels.

The existing plan for the Royal Palm facility fails to provide even a modest information/sales desk. While Royal Palm will continue to be a fixed-station assignment for interpretive personnel, there is a need for that type of facility. Only a limited number of interpretive publications and a selection of film will be offered as a public service. Some modification of the existing information desk area, perhaps with sliding windows opening outward onto the patio, should be considered. The patio area, and the terrace around the pond will continue to be used for regularly scheduled and impromptu talks by interpretive personnel.

A guide booklet (or booklets) should be prepared for use on the Anhinga and Gumbo Limbo trails. The text should be thematic and deal with concepts that are well illustrated in the Royal Palm area, e.g., food chains, pyramids of numbers, the ecological niche, etc. It need not be keyed to specific features at the trailside. The text should be professionally authored. It is suggested that Mr. Charles Harper be commissioned to illustrate the booklet.

At suitable locations along each of the trails, especially on the Gumbo Limbo Trail, benches should be provided so that visitors may just sit and listen for a few minutes. At one location on the Anhinga Trail (dead end at water gauge), an overhead shelter and built-in benches along the boardwalk railings are recommended to provide a shaded and comfortable "listening point" for visitors--on their own or in conducted groups. A wayside exhibit plan for the entire park, and including these two important trails, is called for in the development program. Existing large panels in trailside shelters are adequate for the interim and metal photo labels elsewhere along trails can be prepared and installed locally.

Interpretation along the trail should be more strongly environmentally oriented. Themes to be developed include, but are not limited to, water relationships, plant succession, food chains, seasonal cycles of wildlife abundance, and other things introduced in the interior exhibitory. A trail head interpretive shelter will introduce visitors to the area and continue an aerial view of the Taylor Slough and exhibits on some of the more important aspects of slough ecology. Because the Anhinga Trail will be used for "night prowls", the possibility of including in this shelter an audio device that would introduce visitors to some of the more commonly heard nocturnal sounds should be considered. Plans for this shelter and all existing shelters along the boardwalk should take into consideration the problems of reflective glare from plexiglas.

Guided walks will be regularly scheduled on both the Anhinga and the Gumbo Limbo Trails during the heavy visitation season. In addition, at other times of the year, roving interpreters will be assigned to the terrace area and the boardwalk.

Activities such as "night prowls" on the Anhinga Trail are specially effective in sharpening the sensitivities of visitors to the welter of sounds emanating from the slough. They will be continued, and other nocturnal activities such as "star watches" should be regularly attempted. The fascination of night prowls on the Anhinga Trail can be significantly

increased by the installation of visible-red lighting devices (at or near the exhibit shelter) that would softly illuminate the slough without disturbing the wildlife there.

Royal Palm will serve as a staging area for a variety of personally conducted activities including discovery hikes, "slough slogs", "swamp tromps", etc. Other activities may include reptile and amphibian demonstrations on the terrace, and microscopic examination of plant and animal life dip-netted from the pond.

At suitable locations along the boardwalk on the Anhinga Trail periscopic underwater viewing devices should be installed to enable visitors to more fully experience the great wealth of life forms abounding in the Taylor Slough. Such a device, carefully positioned to provide a split-level view of the surface and sub-surface would provide the visitor with a unique "gator's eye view". Viewing devices should be designed with a wide field of vision enabling several visitors to look through them at the same time. Because of changing water levels they must be easily lowered or raised. They should also be easily removed for periodic cleaning and repair.

Long Pine Key: The existing amphitheater is a temporary facility on a temporary site. An unsatisfactory front-throw projection system is in use, and the screen is sub-standard. The seating is poorly arranged, uncomfortable, and of limited capacity. The continued presentation of traditional illustrated evening programs requires that an attractive, well-designed, and substantially built and equipped facility be developed here. A major amphitheater, fully equipped for rear screen projection, lighting and sound amplification, is needed. It should have an initial seating capacity of 350 with the capability of expansion to 500. Water and electrical extensions are required to the site and landscaping and site development should include walkways and aisle lighting. A traditional campfire circle should be provided in front and to the side of the projection screen. The possibility of including identical fireplaces on either side of the screen to accommodate changes in wind direction should be considered. The area behind the projection screen should include adequate and secure storage for audio visual equipment and should be provided with dehumidifier and/or air conditioner. The location for the amphitheater should be selected with due regard to esthetic blending of the facility with the surroundings, ease of access, etc. Because program audiences will be drawn primarily from the campground, a major parking facility will not be required. However, parking space should be provided for ten to fifteen cars.

In addition to the major amphitheater development, one or more small, informal campfire circles are proposed for location in or near the campground. These facilities will be used for regularly scheduled, and impromptu programs with smaller groups of people. They will also serve as locations for campers to get-together to sing, to share stores and experiences, or just to join in the fellowship of the fire. Such an informal facility will also be ideal for regularly scheduled painting, sketching, and wood carving demonstrations by volunteer artisans.

The National Environmental Study Area located at Long Pine Key is extensively used by teachers and students participating in the cooperative environmental education program sponsored by the park. Unfortunately, the imaginative design of the signs depicting strand concepts was not well executed by the fabricator. Specialists from the Harpers Ferry Center should, in the preparation of wayside exhibit proposals, plan for the replacement of these signs with more durable and attractive materials. This trail is also ideally suited for the development of a sensory involvement trail for sighted, as well as visually handicapped visitors. An unobtrusive guide rope and appropriate interpretive labels printed in Braille will be installed for that purpose. One or two small benches placed at appropriate spots would contribute to an atmosphere of quiet contemplation.

The Pinelands Motor Nature Trail, located near the entrance to the campground, will no longer be used by motorists in consonance with the provisions of the Wilderness Proposal. It should be developed as a hiking/biking trail. No in-place interpretive devices are recommended, but the route would be ideally suited for guided bike trips during which the history of early timber harvest activities and the role of fire in pineland ecology could be effectively interpreted.

Pinelands Trail: The Pineland Trail is a one-third mile walk over an asphalt surfaced path through a typical Caribbean Pine forest. The character of the area is not at all like a pine forest in other parts of North America. The understory, the geology and soils, and the origin and ultimate destiny of this typical Everglades vegetative type are significant and interesting parts of the total park story. It is here that the role of fire is a natural mechanism in the maintenance of vegetation and can best be interpreted. To a lesser degree, the role of elevation is well illustrated in this area since this pineland stand grows on the slightly elevated Atlantic Coastal Ridge, a subtle but important geologic feature in south Florida. The Pinelands Trail will be developed as a "fire ecology" trail with the purpose of interpreting fire as a healthy natural control in living systems. The area through which the trail passes will be managed by prescribed burning so that the visitor will have an opportunity to personally observe unburned areas and compare them with sections that have been burned at various intervals. Interpretation will stress the origin of the higher ground as a prerequisite to forest growth, and why repeated fires are necessary to maintain it. It will be accomplished by way of theme panels in the trailhead exhibit shelter, and a series of smaller wayside signs and/or exhibits (no more than 25). Panels in the trail head shelter were recently rehabilitated by the Harpers Ferry Center, but there are no trailside interpretive devices. The exhibit planning team will include this trail in its proposals.

Pa-Hay-Okee: The short boardwalk trail leading to an elevated viewing platform at Pa-Hay-Okee is ideally suited for the purpose of interpreting the "true" Everglades as exemplified by the vast sweep of the Shark Valley slough visible to the north and northeast. The elevated platform provides visitors with a horizon-wide view into the heart of the sawgrass prairie.

At this location the visitor will learn something of the origin of the "river of grass" and its myriad tree islands, why it is enormously productive, and be further impressed with the critical interplay between cyclic waterflow, elevation, fire, and climate as the perennial masters of the Everglades landscape. Existing exhibit panels in the elevated shelter should be replaced with ones (4-6) that better describe the area in these terms, and several trailside signs and/or exhibits (10) should be installed on the boardwalk leading to and from the platform. A plan for this area is also part of the proposed wayside exhibit plan.

The development of a cypress head trail is proposed in the vicinity of Pa-Hay-Okee. The trail will loop from a small parking facility approximately $1\frac{1}{2}$ miles into a typical cypress head near Rock Reef. Cypress heads are normally flooded and the trail through the head will have to be on an elevated boardwalk similar to others in the park. The approach trail will be along the rock reef or from the Pa-Hay-Okee parking area. A trail head interpretive shelter, located near the cypress head, will contain exhibits designed to introduce the cypress head and its relationship to the surrounding area. An introductory sign will be necessary at the trail head near the parking area. Unlike other tree islands in the glades, cypress heads ordinarily occupy slight depressions in the landscape. The bases of the bald cypress typically growing there are below water level even in the relatively rainless winter months when sawgrass surrounding the tree islands becomes tinder dry. Cypress heads are virtually pure stands with other trees playing strictly secondary roles. Moss-draped cypress trees are one of the common elements in the preconceived notions of the Everglades held by many visitors.

Panel exhibits (4-6) in a trail head shelter and trailside signs and/or exhibits (10-15) will interpret cypress and other "heads" and their relationship to other vegetative elements, characteristics of growth, life cycles, distribution of cypress, and other plant life typically found in cypress heads, i.e., airplants and other epiphytes.

Depending upon the location of the cypress head and the route selected, a parking facility capable of accommodating at least 15 cars and two tour buses may be required. If it is determined that a suitable cypress head and associated features is easily accessible from the existing Pa-Hay-Okee parking area, no additional parking will be required. Trailside interpretation may be supplemented by a brief, carefully written and illustrated guide book keyed to numbered markers along the trail and available at the trailhead. This trail ought to be similar, in many respects, to the one at Corkscrew Swamp.

Mahogany Hammock: At this location a boardwalk (1/3 mile) penetrates a dense tropical hammock. It is one of the most popular nature trails in the park. The hammock is among the larger and more typical mixed-hardwood tree islands in the park. It is an ideal location in which to interpret the ecological role of hammocks with respect to other elements of the Everglades environment. Exhibit panels presently housed in a trailhead shelter should be replaced with newer and more durable ones, and a series of 15 to 20 trailside interpretive signs and/or exhibits should be installed along the route. Among other things, they should interpret:

hammock formation; the physical characteristics that define them; their relationships to other glades communities; factors influencing their development (elevation, water, and climate); prominent plants and typical plant successions; the role of tree snails, spiders, birds, etc., in community dynamics; food chains, etc. The existing parking lot is considered adequate.

The Mahogany Hammock Trail is ideally suited for "contemplative" type interpretation in which one is free to sit quietly in relative isolation from others, and consider the process of nature and its benefits to man. Appropriately, several built-in seating areas should be provided along the Mahogany Hammock loop.

As is true of all elevated boardwalks in the park, the Mahogany Hammock Trail must be regularly maintained, and any additions thereto must be of treated materials. The effect of brackish water and salt-laden air is noticeable at Mahogany Hammock, and becomes more pronounced as the road nears Flamingo.

Paurotis Pond: No wayside exhibits are proposed for the Paurotis Pond area, but it will be used as a staging area for regularly scheduled guided activities such as "slough sloga", "swamp tromps", etc. Paurotis Pond is a pleasant area for picnicking and the possibility of providing additional tables and trash facilities should be considered.

Nine-Mile Pond: While no major wayside development exists at Nine-Mile Pond, it is a popular way-point for motorists in route to and from Flamingo. It is a point at which alligators are frequently observed and there are rather extensive seasonal displays of bird life. A small exhibit shelter is proposed to house one or two descriptive exhibits to aid in wildlife identification. In addition, since Nine-Mile Pond lies at the intersection between the sawgrass prairie and the mangrove forest, an exhibit is proposed to interpret the incredible fecundity of this zone.

Hell's Bay/Noble Hammock Canoe Trails: A short distance beyond Nine-Mile Pond, enroute to Flamingo, lie the trailheads for two of the better-known and established canoe routes into the Wilderness Waterways of the park. At each of these trailheads a small shelter will be erected to house a device combining a canoeist register and float plan with a dispenser for canoe trail maps and interpretive guides. Canoeing is becoming an increasingly popular activity, and Everglades National Park is ideally suited for its pursuit. Because these trails are among the more frequently used, it is recommended that small parking facilities (1 to 5 car) be developed adjacent to the trail heads. An interpretive guide to one or both of these trails will be developed. It will be printed on plasticized or other treated material to render it waterproof or water resistant, and will include an illustrated text to interpret the estuarine ecology so well illustrated at the edge of the mangroves. The interpretive text will be keyed to small numbered marker buoys or other suitable station markers.

West Lake: The West Lake area is the first major interpretive development area encountered by motorists beyond Mahogany Hammock. At present the

facilities there include an unmanned exhibit room, a launch ramp and dock for small powered craft and canoes, and a boardwalk extending through a dense growth of mangroves to the edge of West Lake. The development of interpretation in the West Lake area should relate to the theme of natural change, particularly those induced in the coastal mangrove area by storms of hurricane force. Exhibits within the shelters should also begin to disclose something of the intermingling of fresh and salt water life forms in this brackish water area, and to discuss the role of rookeries--which few visitors have the opportunity to personally see--in the avian life of the park.

The existing boardwalk trail at West Lake is ideally suited for the "close-up" interpretation of mangrove ecology. Especially good examples of the often violent physical and biological effects of hurricanes on vegetative communities are clearly visible along its route. Presently, interpretation is accomplished by way of an attractive, well-illustrated booklet published locally by the Everglades Natural History Association. Difficulty has been experienced in providing a secure and effective device for distributing these leaflets on a pay-as-you-go basis. The exhibit planning team should consider providing a suitable distribution device as part of the overall exhibit plan.

Exhibits presently in the building at West Lake are out of date and badly in need of replacement. A plan recently developed by the Harpers Ferry Center was generally satisfactory except that it made provision for a manned information sales and concession representative desk which is no longer considered necessary. That plan should be reviewed on-site by personnel from Harpers Ferry Center in light of recommendations in this prospectus. Regularly scheduled interpretive activities such as canoeing demonstrations, guided walks (part of experimental transportation system mentioned elsewhere), and on-site and roving assignments will be conducted at West Lake.

The limited range AM radio transmitter presently installed at West Lake will be supplanted eventually by the installation of the continuous broadcast system proposed elsewhere in this document. In the interim, that transmitter will continue to broadcast a brief (three minute) introductory message about the West Lake and Flamingo area to visitors parked in or passing through the parking lot. The unit now in use is subject to severe corrosion and has been only marginally successful as an interpretive/informational device. Pending the installation of the larger system, it is recommended that a transmitter capable of intercepting visitors at greater distance as they approach West Lake area from either direction be installed. Signs alerting motorists to the broadcast unit will be installed at appropriate locations, and its availability will be indicated in the park mini-folder and other publications.

Mrazek Pond/Coot Bay Pond: These two areas, particularly Mrazek Pond, are frequented by an incredible number and diversity of migratory and resident birds during several mid-winter weeks each year. Mrazek Pond is the site of perhaps the greatest single concentration of bird life

readily visible to virtually every park visitor. A suitably unobtrusive wayside exhibit that will assist in identification of birds and depict the seasonal changes at Mrazek Pond as a "barometer" or indicator of general changes in the moisture regime throughout the park should be installed here with a companion exhibit on the north side of the road at Coot Bay Pond. The exhibit at Coot Bay should further allude to the subtle changes that have taken place there as a result of man's intervention through the construction of the Buttonwood Canal. At each location parking areas that will accommodate at least 10 cars per unit time must be developed. South of Coot Bay Pond the visible aftermath of Hurricane Donna is presently interpreted by a wayside sign. It should be retained until the proposed exhibit plan is developed, at which time an exhibit format in keeping with the remainder of the park should be used to replace it.

Flamingo: Flamingo is the destination of a vast majority of park visitors. It is the terminal point on the 38 mile highway corridor; it is the only major marina facility for boat oriented visitors in a larger Florida Bay area; and it commands the entrance to the Buttonwood Canal (sole southern access to Whitewater Bay). Flamingo is a major visitor use development area including; overnight accommodations, restaurant, and other concession operated facilities; a major National Park Service administrative operation including a visitor center, campgrounds, etc.; and, a variety of other facilities such as trails, canoe routes, etc.

The existing visitor center is too small for extensive interpretive development, but a major rehabilitation designed to better utilize the available space both within the exhibit room and on the adjoining breezeway is proposed. That rehabilitation may involve limited structural modifications within the exhibit room. Completely new exhibitry and audio visual programming will be developed to interpret the structure and interrelationships of the Florida Bay/Coastal Prairie/Mangrove communities, the role of man and his activities in altering them, something of the historic and prehistoric human habitation of the Flamingo area, and the human values associated with wilderness.

The interior treatment should motivate people to seek further involvement with the park and its resources on their own along its trails and waterways. Among other things, interpretation should deal briefly with the geographic relationship of the communities that comprise the tip of peninsular Florida, their size and general appearance, and their evolution and physical characteristics. Typical plant associations including succession patterns, notable adaptations to these environments, and environmental factors that influence and restrict plant occurrence will be interpreted. Dominant wildlife relationships, including descriptions of life cycles, representative food chains, unique or unusual environmental adaptations, and the concept of the ecological niche as it is illustrated here will be highlighted. In addition, the visitor's attention will be drawn to distinctive or rare and endangered animals associated with specific habitats such as the Loggerhead Turtle, the Manatee, the Crocodile, and the Wood Stork.

Because the coastal area is subject to periodic and violent modification by climate and weather, and because those effects are so readily visible in and near the Flamingo area, the dynamics of natural change are especially appropriate subjects for interpretation here. Man has also been a major perpetrator of change. His history from the earliest times to the present is inseparably a part of the Everglades story. In the ancient scattered remnants of an earlier people, in the wholesale slaughter of birdlife to appease the vanity of man, and in the ultimate establishment of a national park and wilderness complex lies the fascinating story of changing human attitudes about the environment. This, too, is a subject to be interpreted in the Flamingo visitor center.

The interior of the exhibit room might well be divided into a series of alcoves each devoted to a specific subject area. Compartmentalization of this type would facilitate the development of brief, visitor-actuated audiovisual presentations if they are required. For example, in treating the Florida Bay area, underwater motion picture footage might be imaginatively used as a medium for the interpretation of variations in marine habitats and inhabitants from Key Largo to Cape Sable. Elsewhere, it may be desirable to use other visual materials or audio devices requiring some acoustical insulation from other simultaneous presentations.

Whenever possible, material that can be physically experienced by touch, or other sensory mechanisms, should be used in exhibits. For example, in discussing the Coastal Prairie area, a small "sand table" enabling visitors to physically examine the material comprising the Cape Sable beaches could help them to appreciate the pristine quality of that coastal feature. Similarly, sections of the intertwined root systems of mangroves built into an exhibit could effectively convey a feeling for the virtually impenetrable nature of the coastal forest.

Outdoors, along the breezeway interconnecting the concession facility with the visitor center, large binocular telescopes are mounted to provide visitors with a close-up view of birds frequenting the mud flats just offshore. These devices could be improved to eliminate distortion and to otherwise facilitate their use. They should be accompanied by durable, corrosion-resistant plaques mounted on the railing identifying several of the more common species by color, size, and silhouette. The possibility of monitoring bird actions by remote, closed-circuit television should also be considered by planners.

An information/sales desk will be located in the lobby and should include built-in storage for limited sales items. Because the lobby is open-air, design must take into consideration the effects of moisture laden air.

Because much of the Flamingo area is accessible only by boat, it would be extremely helpful to have as an orientation device the Florida equivalent of the relief models used for that purpose in some of the western parks. It should depict those portions of the park lying offshore in the Florida Bay, Whitewater Bay, and the coastal tributaries. The model should be sufficiently enlarged to show in some detail the major keys, bays, inlets, rivers, and other significant features. The model should be free standing,

enabling visitors and interpreters to move freely about it. From time to time it will be used as a reference point in interpretive talks.

The existing amphitheater at Flamingo is totally inadequate. It will be replaced by a major amphitheater, fully equipped for rear screen projection, lighting, and sound amplification. The amphitheater should have an initial seating capacity of 350, with the capability of expansion to 500 at some later date. Water and electrical extensions are required to the site and landscaping and site development should include walkways, aisle lighting, and appropriate directional signing. A traditional campfire circle should be provided on either side of the projection screen to accommodate changes in wind direction. The area behind the projection screen should include adequate and secure storage for audiovisual equipment and should be provided with a dehumidifier and/or air conditioner. The latter is especially important in the Flamingo location due to proximity to corrosive salt-laden air. The existing location, while somewhat distant from the campground, is considered adequate. It is midway between the concession overnight facilities and the campground, and easily accessible from both. Limited parking is now available, but the area should be expanded to accommodate at least 15 cars.

In addition to the major amphitheater development, one or more small, informal campfire circles of the type recommended for the Long Pine Key campground are also proposed in the Flamingo area. They will be used for the same purpose. In order to facilitate continuation of evening programs during the warm summer months when mosquitoes become a major problem, the possibility of screening-in one of the smaller campfire circles, or of developing an independent facility somewhat like the employee "chickee", should be seriously considered. In the meantime, the breezeway area adjacent to the exhibit room will accommodate that activity.

A recently initiated demonstration of native reptiles and amphibians which has proven highly popular will be continued. It may also be augmented by other "living" exhibits such as incubating sea turtle eggs. As in the case with all exhibitions of live specimens, special precautions must be taken to insure that they are well cared for and released to their native environment on a timely basis. All cages, aquaria, and other holding or display structures must be carefully and meticulously cleaned on a regularly scheduled basis.

A wide variety of regularly scheduled, personally conducted activities will be scheduled throughout the year, and especially during the winter season. Activities will include: discovery and "serendipity" hikes, "slough slogs", "swamp tromps", bird walks, and roving and on-site assignments at Mrazek Pond, Coot Bay Pond, and at West Lake. Recreation demonstrations of canoeing and small boat handling will be scheduled both at Flamingo proper and at West Lake. Canoe adventures into the inland waterways and overnight trips to the Cape Sable area will be scheduled, but because of logistical problems the groups will be limited in size by pre-registration. An intriguing possibility for overnight backpacking trips exists in the Flamingo area, and a number of these activities should be scheduled on a trial basis.

Because of Flamingo's role as a turn-of-the-century fishing village and witness to much of the early history of the Everglades area, a major living history demonstration involving the reconstruction of a sailing craft is recommended. A full-scale and operational sailing craft of a type that might have plied the waters of Florida Bay at the turn-of-the-century should be constructed and moored near the site of the old village of Flamingo. It should be manned by a boat captain/interpreter who would conduct regularly scheduled excursions into the bay with limited numbers of visitors aboard in an effort to recapture something of the flavor of the early 1900's when fishermen, plume hunters, and pleasure boaters frequented the coastal waters in the pursuit of fish, fowl, or fun. During such cruises, visitors would learn, through actual demonstrations by the captain/interpreter, about the use of early fishing and hunting paraphernalia, and the art of shallow draft sailing. During the period when the craft is moored at Flamingo, it would serve as a "walk aboard" exhibit complete with a period-costumed interpreter (the boat captain).

A combination hiking and biking trail extending from Flamingo through the Coastal Prairie to the Cape Sable beaches is proposed. This trail will be uninterpreted by wayside devices, but it will serve as a route over which regularly scheduled all-day interpretive trips will be conducted. Much of the Cape Sable trail will pass through designated wilderness, and care must be exercised lest the character of the area be compromised. At present, very few visitors have the opportunity of visiting the magnificent Cape Sable beaches. This trail is not intended to greatly increase the impact of visitors in that area, but to make it possible for those who are willing to make a 10-mile one-way hike (or bike trip) to reach the southernmost tip of the continental United States. This trail will significantly increase the opportunities for planning and conducting backpacking trips to the Cape Sable area where a number of on-site interpretive activities related to this significant feature can be conducted.

A growing number of local elementary schools are becoming involved in experimental NEED program activities conducted cooperatively by the National Park Service and the Dade County Public School System. These activities involve overnight experiences of from one to five days for 25 to 30 elementary school children from the larger metropolitan Dade County area. This activity is considered a significant part of the total environmental education program, and to foster its continuation, the development of limited accommodations in the Flamingo area is recommended. Specifically, five elevated wooden tent frames complete with hardware cloth screening, canvas wall tents, and flies should be located at "C" Loop in the Flamingo campground. No comfort station or water facilities are required due to proximity to existing facilities. These units are intended to provide shelter only, and to be used by teachers, counselors, and students involved in this program through prior arrangement and coordination with the Environmental Education group. Each tent unit should be equipped with a picnic table and fireplace. The development of these temporary facilities will minimize the costly recurring expenditure for canvas tents and other equipment presently provided by the National Park Service.

The concession operation at Flamingo will continue to provide guided boat cruises to one or more locations. Traditionally, the concessioner has

employed either a boat captain/interpreter or an interpreter to accompany the boat trips. The National Park Service will continue to work closely with the concessioner to provide the best quality interpretive service on these popular trips. In addition, the National Park Service will seek the involvement of concession representatives in annual seasonal interpretive training programs.

Generally speaking, because of the rather severe environmental conditions existing in the Flamingo area, relatively few outdoor exhibits are proposed. Instead, greater emphasis will be placed on personally conducted activities along existing trails, roads, and waterways.

Wildlife distribution, particularly bird life, is determined largely by feeding conditions. Most of the consistently rich feeding grounds, and hence the best bird concentrations, are inaccessible to the average visitor. Since wildlife is a principle park feature that draws many visitors to the Everglades, the recently constructed artificial sewage lagoon that will be opportunistically used as an interpretive site. The pond, located adjacent to the park road as it approaches the campground, will be regularly visited on birdwalks originating at Flamingo. It may be necessary to build a small parking area and construct a low profile elevated platform to facilitate observation.

Tamiami/Shark Valley: The Shark Valley area is destined to become one of the most heavily visited areas in the park. A significant, though carefully designed and developed, visitor use complex is proposed near the existing entrance to the Shark Valley loop road. It will include a visitor reception/staging area intended to intercept and adequately serve the large number of motorists traveling east or west from the Tamiami Trail. Interpretation will stress man's relationship to the Everglades from aboriginal times to the present. It will remind man of his inseparable ties with the natural environment, and that as his pursuit of higher levels of sophistication and technological achievement consign wild areas to development at an ever accelerated rate, places like the Everglades become even more precious. The reception area should include exhibitry of native arts and crafts (possibly incorporating actual demonstrations), highlight the early history of the Everglades region including visitation by naturalists, explorers, and military expeditions; attempts at exploitation by developers; and its enjoyment by millions of vacationing Americans. Design of structures should be open and airy, perhaps in the style of Indian "chickees".

The existing LP gas-driven tractor-trailer units will ultimately be supplanted by a more efficient mass transportation system with an embarkation/disembarkation area designed as an integral part of the center complex. Major design parameters of that system would include relatively quiet, non-polluting mechanism, continuous operation drive rail, variable speed capability, and the feeling of openness and unobstructed view.

That system would ultimately include a series of interpretive way-points consisting of elevated platforms and walkways providing access to features near the loop. The visitors should be free to disembark at any of these points with the knowledge that other transportation units will pass at

regular intervals thus enabling him to spend as much time at any given point as he wishes. Enroute interpretation will be provided by an interpreter, or by the operator of the unit. At selected way-points, on-site interpreters will greet visitors disembarking from the system and will periodically conduct guided activities originating from those staging points. The prime destination of the transportation system will continue to be the observation tower from which visitors will have a commanding view into the heart of the Shark Valley slough. Interpreters will also be scheduled for on-site and roving assignments at the tower.

These peripheral way-points will make it possible for the Shark Valley area to absorb a greater number of people per unit time through dispersal around the loop. At the same time, it should contribute to a greater sense of intimacy.

At a point about midway between the tower and visitor center on the return loop, a disembarkation point with an elevated boardwalk extending outward to a large hammock will enable passengers to visit a major cultural arts demonstration area. As presently conceived, the relatively open central area of the hammock would be occupied by a series of small "chickees", each sheltering an Indian demonstrating one or more native arts and crafts. Among the possibilities for demonstrations are: manufacture of dug-out canoes, colorful patchwork clothing, palmetto dolls, wood carvings, beadwork, and fry bread which could be freely sampled by visitors. The demonstrations would in no way be intended to compete with the Indian economy which relies so heavily on the sale of these items. Rather, it would serve as an added enticement to visit Indian villages along the Tamiami Trail after leaving the Shark Valley area. The chickees must be designed to provide adequate protection from inclement weather during the rainy season, and they should include interpretive labels or explanatory signs to serve in the absence of the demonstrator. At least five native craftsmen and one coordinator/supervisor will be required to staff this operation.

The visitor reception area should include a spacious open area accommodating as many as 200 people with a combination information/sales desk to accommodate interpretive personnel and representatives of the Miccosukee tribe. A complete selection of interpretive sales materials and theme-related items will be displayed, and there should be a changing selection of craft items.

Complete site development, including extension of utility systems, 150 car parking lot, and restroom facilities to accommodate 10 or more people per unit time, should be planned. Public address system and other appurtenant facilities and services must be provided. This area will also serve as the sub-district headquarters for interpretive, protection, and maintenance personnel.

While visitors now pay an entrance fee to Shark Valley and ride the transportation system free of charge, it is recommended that when the new system is completed, a nominal user fee be adopted in lieu of the entrance fee. The sale of tickets for the transportation system is a function that should be incorporated into the reception facility, perhaps at the information desk.

Adequate housing for at least three permanent full-time employees and a seasonal staff of at least 15 will be required to insure the full time operation, maintenance, and security of this facility. In addition, a modest but well-equipped maintenance facility and storage area will be required. Prior to any of the above development, it is critically important that a study be conducted to determine the feasibility of the transportation system, and that a complete, carefully executed, and sensitive developed area plan or concept be prepared. Even though this proposal will result in additional asphalt and concrete, it is considered the minimum acceptable level of development necessary to adequately accommodate the established pattern of visitation.

For the foreseeable future, the alternate transportation system will be shut down for at least two months during the summer season. It is economically unsound to operate expensive equipment with as few visitors as can be expected at that time. In addition, while the tram operation is terminated, major maintenance can be accomplished on both the roadway and equipment. During the time when the system is not in operation, the area will be staffed by interpretive personnel and emphasis will be placed on walking and bicycling trips along part or all of the loop road. As an interim measure, until a concession operation is developed in the Shark Valley area, the Division of Interpretation will purchase and provide bicycles for that purpose. A wide variety of guided activities will be conducted throughout the year at Shark Valley including "slough slogs", and experimental backpacking trips. The latter are envisioned as activities in which experienced National Park Service personnel can share, with select groups of visitors, some of their wildland skills through preparatory half-day seminars followed by practical overnight exercises, after which participants would be awarded appropriate shoulder patches and/or certificates. Generally, personally conducted activities will be of the "immersion" type in which participants will be physically involved to the extent that they may get wet, dirty, and possibly quite tired.

An all-day visit to Shark Valley has been a traditional part of the environmental education program since its inception. That activity, which results in approximately sixty elementary age urban school children each day having a positive environmental experience, will be continued. It is purposely relatively unstructured. For many of the children it is the first time away from the influence of the city--the first opportunity to see an alligator at close range, to touch a snake, to feel the cutting edge of a blade of sawgrass and to taste its tender roots, or to listen very intently and not hear the sound of cars and airplanes and hundreds of other people. School children and their teachers and chaperones will be transported to the Shark Valley area under a cooperative busing agreement with the Dade County Public School system. At Shark Valley they will be met by uniformed interpreters who will be with them for the remainder of their visit. All interpretive personnel stationed at Shark Valley will actively participate in this program.

Florida Keys: No major interpretive development is proposed at Key Largo, but there is a need for a modest information/orientation facility to serve those visitors traveling north and south on US #1 who may require information

about the Florida Bay area. In addition, a base of operations is required for personnel assigned to this satellite area, particularly interpreters who will become more actively involved with cooperative environmental education programs in the extreme South Dade and Monroe County area. The Key Largo facility will require no auditorium and exhibifry will be limited to decorative graphic materials depicting some of the more colorful and interesting features in Florida Bay, and visitors involved in boat-oriented recreational activities. An information/sales counter will be the central feature of the facility and it will be supplemented by a random access slide projection system which will be used as an information recovery device. Maps and other information about the park and areas such as John Pennekamp Coral Reef State Park, Bahia Honda State Park, Key Deer National Wildlife Refuge, and Biscayne and Fort Jefferson National Monuments will be freely available. A large map depicting Key Largo and its relationship to the remainder of the park should be provided. A "boater's corner" may assist visitors with boats in finding launching ramps, supplies, and other facilities in the area. The Natural History Association will operate a sales outlet in the Key Largo facility. Among other things, nautical charts and materials related to boating activities will be offered for sale.

The development of this facility will require that adequate approach signing be developed along US #1 to inform visitors that they are nearing a National Park Service facility. A parking area to accommodate 15 to 20 cars per unit time will be required, and comfort station facilities are necessary. The design of this entire facility must take into consideration the intense visual competition from commercial developments surrounding this site. During a significant portion of the year an environmental education specialist will coordinate environmental education activities in schools from Key Largo to Key West, and housing will be required.

Gulf Coast: The small developed area at Everglades City is technically not within the administrative boundary of the park. It is primarily a staging area for boat-oriented activities scheduled by the park concessioner. The existing park service facility is poorly located with respect to the concession operation; it is small, and totally lacking in interpretation save for a periodically manned information desk. Within the constraints of the limiting factors mentioned earlier for Everglades City, there is considerable room for improvement at this location. A modest visitor center, including offices, site development, and utilities systems, plus parking and other pertinent facilities is proposed. It would include exhibits and/or exhibit groups interpreting the history of the Ten Thousand Island area, the fiercely independent lifestyle evolved by early residents, something of the role that pioneer communities like Chokoloskee Island played in the early development of the park, and the rich sport and commercial fisheries resource of the Gulf Coastal Area. In addition, the fact that Everglades City was the site of the dedication of Everglades National Park by President Truman and that it served as the early headquarters of the park should be highlighted. Wherever possible, historic and prehistoric artifacts, fishing paraphernalia, and other exhibitable material should be used in the development of interpretation.

The center should include a combination information sales facility with a built-in or free-standing interpretive publications display. The lobby/information/exhibit area should be designed to accommodate at least 100 people per unit time, and an auditorium with a seating capacity of 75 to 100 should be incorporated into the design. A brief motion picture intended to interpret the Everglades from a historical point of view--perhaps through the eyes of an "old timer" witnessing changes that have taken place during the past 100 years--will be shown regularly in the auditorium. The auditorium should be acoustically treated and equipped with the necessary projection and sound amplification facilities. Restroom facilities to accommodate 10 people per unit time, and a parking facility for at least 50 cars are required.

The Everglades City area will be staffed by a permanent district naturalist and seasonal personnel who will offer a variety of personally conducted interpretive activities to the visiting public. Connected with, or adjacent to, the visitor center should be an outdoor "chickee" type area in which regularly scheduled demonstrations of a variety of fishing paraphernalia such as crab traps, lobster pots, nets, and other fishing techniques will be demonstrated. The same area could be used for the presentation of evening programs as well, and should include a fire circle and seating for that purpose. Interpretive personnel stationed at Everglades City will coordinate their activities with those of the park concessioner, providing interpretive training to boat captains, and possibly accompanying boat tours. In addition, the possibility of developing cooperative agreements for transporting visitors to an offshore beach area (e.g., Kingston Key) or moonlight programs or other activities designed to reflect the changing moods of the area will be pursued.

The Everglades City site will act as the staging area for trips to the Turner River Mounds where a small dock capable of accommodating two or three boats and a one-half mile elevated trail will provide access to this important archeological site. Prehistoric areas within the park are presently uninterpreted. The aboriginal prehistory and early history, particularly of the Calusa culture, are significant interpretive resources. The Turner River Mounds are one of the largest and most easily accessible archeological sites in the park and are relatively near the Everglades City area. This development will provide an additional option for trips scheduled cooperatively by the interpretive staff and the park concessioner. At a suitable point near the Mounds an exhibit shelter and one or more exhibit panels explaining the early occupation of these coastal areas by mound builders, and something of their lifestyle, beliefs, etc., will be erected. The dock and boardwalk must be constructed of pressure treated wood, and exhibits must be of highly corrosion resistant materials.

Offshore from the Everglades City site lies the Sandfly Island National Environmental Study area. It is a site which ideally characterizes the features of an environmental study area having a long history of human habitation and use, the evidence of which is in various stages of natural reclamation. The environmental education group and personnel stationed

at Everglades City will aggressively pursue a cooperative program of environmental education with the Collier County School system, and Sandfly Island will become a focal point for that activity. It is essential that cooperative agreements with the park concessioner be developed which will enable groups of 30 to 60 elementary school children, their teachers, and chaperones to be transported to the island daily throughout the school year.

As the Everglades City site becomes more fully developed, it can be expected that more visitors will spend longer amounts of time there and will thus be available for participation in a greater variety of activities. However, for the ensuing few years, relatively little development is foreseen.

Parachute Key--Flamingo: Other than the existing tape tour, there is virtually no roadside interpretation between Parachute Key and Flamingo. This road is the only major access into or through the park and a large percentage of park visitors traverse this route without benefit of interpretive guidance. A low frequency AM radio transmission system designed to broadcast interpretive messages over automobile radios will be installed between Parachute Key and Flamingo. This system should include the capability of both zone and fixed location transmissions. The intent of the system will be to interpret the changing landscape one encounters as he traverses the road, and to alert visitors to features of interest or facilities as they are approached. Symbols on the roadside will appropriately identify broadcast location, and visitors entering the park will be informed of the proper frequency at the Visitor Center and Entrance Station. The system should also be designed with the capability of transmitting special announcements, weather alerts, notification of accidents, etc.

The substance of interpretation for the radio system should be very similar to that now included in the tape tour. Each of the designated areas should have adequate temporary parking for at least five cars. Before this system can be developed, a feasibility study must be conducted. It is recommended that a trial installation of a transmitting system be installed between Park Headquarters and Royal Palm to test the system's capabilities. Until that time, or in the event the proposed system fails to work satisfactorily, the tape cassette tour will be continued.

To accommodate the growing number of bicyclists in South Florida, and to encourage more non-automobile oriented use of the park, a combination hiking/bicycling trail with one or two intermediate rest areas including comfort station, drinking water, picnic tables, bike racks, and some shelter is recommended. The trail would be approximately 40 miles in total length and wide enough for two-way passage. It would follow the route of the Old Ingraham Highway as far as possible, and then parallel the main park road for the remainder of the distance. No fixed interpretive developments are proposed along this route, but it will be extensively used for guided hiker/biker interpretive activities during the visitor season, and may ultimately be supplemented by an attractive guide booklet.

Staff: Existing and required (current year plus 5) permanent and seasonal staffing levels necessary for the full implementation of this plan are

RECOMMENDED PERSONNEL & MAINTENANCE TO SERVICE

indicated by title, series, and grade on the following chart. Total permanent staffing levels may at first appear to be excessive; however, in view of the complexity of the interpretive program, the year-round visitation, the magnitude of the annual budget, and other factors, the size of the permanent staff is well within acceptable levels. In addition, Departmental and Service imperatives for field involvement with cooperative environmental education activities, and the extent of Everglades' existing commitment to that program, clearly justify a full-time environmental education group. The rather large number of personnel assigned to the Tamiami/Shark Valley area is required for the year-round operation of a major alternate public transportation system and interpretive facilities and services appurtenant thereto. As is true in virtually all other parks, a major part of the interpretive workload will always be carried by seasonal personnel.

Incumbents in existing and proposed positions should, of course, have the knowledge, enthusiasm, and skill necessary to build a strong and viable program. They should, whenever possible, have considerable field experience in the day-to-day operation and/or management of moderately to highly complex interpretive programs in similar areas within the system. Insofar as permanent managerial and supervisory personnel are concerned, they should have basic skills in organization, planning, and implementation of all phases of the program including seasonal training, scheduling, auditing of programs, management of funds, etc. Permanent personnel will also be expected to assume active roles as interpreters in order to maintain professional competency. They should not only have the necessary supervisory and managerial skills, but must be knowledgeable and skilled practitioners of the art.

Grade	Position	Number
1	Supv. Park Ranger (Interp. Spec.), GS-013-5	1
0.8	Supv. Park Technician, GS-012-4 (Temp)	1
0.8	Park Technician, GS-012-3 (Temp)	1
0.8	Park Technician, GS-012-3 (Temp)	1
0.8	Park Technician, GS-012-3 (Temp)	1
0.8	Park Aid, GS-012-2 (Temp)	1
0.8	Park Tech. (Interp. Spec.), GS-012-3 (Temp)	1
0.8	Park Tech. (Interp. Spec.), GS-012-3 (Temp)	1
0.8	Park Aid (Interp. Spec.), GS-012-2 (Temp)	1
<u>Flamingo District</u>		
1	Supv. Park Ranger, GS-013-5	1
0.8	Park Technician, GS-012-3 (One FY 75)	1
0.8	Park Ranger (Interp. Spec.), GS-012-3	1
0.8	Supv. Park Technician, GS-012-4 (Temp)	1
0.8	Park Technician, GS-012-3 (Temp)	1
0.8	Park Technician, GS-012-3 (Temp)	1
<u>Everglades City District</u>		
1	Park Ranger (Interp. Spec.), GS-013-5	1
0.8	Park Technician, GS-012-3 (Temp)	1
0.8	Park Aid, GS-012-2 (Temp)	1
<u>Total</u>		

DIVISION OF INTERPRETATION & VISITOR SERVICES

<u>TITLE, SERIES & GRADE</u>	<u>Existing</u> <u>Perms./M.Y. Other</u>	<u>Deficiency</u> <u>Perms./M.Y. Other</u>
<u>Headquarters</u>		
Supv. Park Ranger, GS-025-13	1	
Supv. Park Ranger, GS-025-12	1	
Clerk-DMT, GS-316-5	1	
Park Technician, GS-026-4	1	
<u>Environmental Education Group</u>		
Park Ranger (Env.Spec.), GS-025-9	1	
Park Ranger (Interp.), GS-025-7	1	
Park Tech. (Env.Ed.Spec.), GS-025-5 (Temp)		0.8
Clerk-Typist, GS-322-3 (Temp)	0.8	
<u>Pine Island District</u>		
Supv. Park Ranger, GS-025-11	1	
<u>Royal Palm Sub-District</u>		
Supv. Park Ranger (Interp.Spec.), GS-025-9	1	
Park Technician, GS-026-5	1	
Park Ranger (Interp.Spec.), GS-025-5		1
Park Technician (A/V Spec.), GS-026-4		1
Park Technician, GS-026-5	3.0	0.5
Park Technician, GS-026-4	0.6	
<u>Tamiami/Shark Valley Sub-District</u>		
Supv. Park Ranger (Interp.Spec.), GS-025-9	1	
Supv. Park Technician, GS-026-6 (Temp)	0.6	
Park Technician, GS-026-5 (Temp)	5.0	
Park Technician, GS-026-4 (Temp)	1.5	
Park Aid, GS-026-3 (Temp)	2.0	
Park Tech.(Env. Ed. Spec.), GS-026-5 (Temp)		0.8
Park Tech.(Demo. Coord.), GS-026-5 (Temp)		0.6
Park Aid (Craft Demo.), GS-026-2 (Temp)		2.5
<u>Flamingo District</u>		
Supv. Park Ranger, GS-025-9	1	
Park Technician, GS-026-5 (New FY 75)	1	
Park Ranger (Interp. Spec.), GS-025-5		1
Supv. Park Technician, GS-026-6 (Temp)	0.6	
Park Technician, GS-026-5 (Temp)	3.0	
Park Technician, GS-026-4 (Temp)	0.6	
<u>Everglades City District</u>		
Park Ranger (Interp.Spec.), GS-025-9	1	
Park Technician, GS-026-5 (Temp)	0.5	
Park Aid, GS-026-2 (Temp)	1.0	
 Total	<hr/> 32.2	<hr/> 8.2

THE COST

NOTE: Estimates for program implementation will be supplied by respective media representatives, and by Denver Service Center personnel. Estimates will indicate both planning and production costs, and will represent current rates only. An annual increment of at least ten percent must be added to all exhibit and audio-visual estimates to compensate for rising costs of planning production, and materials.

SUMMARY OF PROJECT PROPOSALS

DIVISION OF AUDIOVISUAL ARTS

(To be completed later)

DIVISION OF MUSEUMS

Interior Exhibits

Exterior Exhibits

DIVISION OF PUBLICATIONS

BIBLIOGRAPHY

- Amos, William H., The Life of the Pond. McGraw-Hill, New York, 1967.
- Amos, William H., The Life of the Seashore. McGraw-Hill, New York, 1966.
- Caulfield, Patricia, Everglades. Ballantine Books/Sierra Club, 1971.
- Craighead, Frank C., Orchids and Other Air Plants of the Everglades National Park. University of Florida, Gainesville, 1955.
- Craighead, Frank C., The Role of the Alligator in Shaping Plant Communities and Maintaining Wildlife in the Southern Everglades. Florida Audubon Society, Maitland.
- Craighead, Frank C., Trees of South Florida (Vol. I). University of Miami Press, 1971.
- Dasman, Raymond F., No Further Retreat. Macmillan Co., New York, 1971.
- Douglas, Marjory Stoneman, The Everglades: River of Grass. Hurricane House Tropic Isle, Coral Gables, Florida.
- Gantz, Charlotte O., A Naturalist in Southern Florida. University of Miami Press, Coral Gables, Florida, 1971.
- George, Jean Craighead, Everglades Wildguide. U. S. Government Printing Office, Washington, 1972.
- Hawkes, Alex D., Guide to Plants of the Everglades National Park. Tropic Isle, Coral Gables, Florida, 1965.
- Hoffmeister, John E., Land from the Sea. University of Miami Press, Coral Gables, 1974.
- Koschmann, Gale, Turtle-Lore from Everglades National Park and Southern Florida. Everglades Natural History Association, Homestead, Florida, 1965.
- McCluney, William R., The Environmental Destruction of South Florida, University of Miami Press, 1971.
- Niering, W. A., Life of the Marsh, McGraw-Hill Book Co., 1966.
- Ogden, John, Checklist of Birds. University of Miami Press, 1970.
- Robertson, William B., Jr., Everglades--The Park Story. University of Miami, 1959.
- Stevenson, George B., Trees of Everglades National Park and the Florida Keys. Everglades Natural History Association, Homestead, Florida, 1969.

