# EVERGLADES BIKE TRAIL SYSTEM STUDY

EVERGLADES NATIONAL PARK / FLORIDA

Gu

PHASE ONE-CORRIDOR STUDY part one-preliminary alternatives

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#### BACKGROUND

Everglades National Park is located in South Florida, adjacent to an urban area experiencing tremendous population growth. That growth and the accompanying increase in bicycling as a popular form of outdoor recreation are being expressed in public demands for more and better opportunities for riding. In response, Dade County is expanding its recreational programs and now has a full time bicycle coordinator.

Everglades National Park has only one designated bike route within The route is on the 13 mile paved loop road at Shark the park. The loop road is closed to private motor vehicles but Vallev. bicycles must share it with tram tour vehicles. The only other vehicles access corridor within Everglade National Park is along the 38 mile long main park road which connects the park entrance /headquarters to the interpretive facilities and concession complex at Flamingo on Florida Bay. Several shot spur roads connect the main road to interpretive sites and park administrative facilities. All of those roads are narrow (20-24 feet wide) two-lane roads with no paved road shoulder that could accommodate bicycles. Therefore, bicyclers must share the right of way with motor vehicles (i.e., motor coaches, buses, and vehicles towing boats or camping trailers) traveling at speeds up to 55 MPH. For reasons of safety, none of these roads are designated as bike routes, nor does the park encourage bicycling on them.

# STUDY AREA

The study area for this project is confined to the road corridor between the park boundary, east of park headquarters, and Florida Bay at Flamingo. For study purposes the corridor also includes all existing and abandoned roads and trails between the main park road on the north and the old Ingram Highway on the south. The wild interior of the park-principally, the sawgrass everglades and and the coastal mangroves - is largely impenetrable, and will remain roadless wilderness.



# LEGISLATIVE AND ADMINISTRATIVE CONSTRAINTS

Congress established Everglades National Park in 1947 as a permanent wilderness and directed that no plan for visitor use should interfere with the preservation of the unique flora and fauna or the primitive natural conditions. The wilderness designation was given statutory authority with the passage of the Everglades Wilderness Bill (PL 95-625), on November 10, 1978. Federal regulation specifically prohibits "possessing a bicycle in a wilderness area established by Federal statue."

Although most of the road and trails in the study area corridor are excluded from the parks designated wilderness, there are some exceptions. Everglades wilderness includes portions of fire roads in Long Pine Key making them ineligible for bicycle use. New legislation would be required to change their designation to allow bicycling. The act (PL 95-625) also included 10 miles of the old Ingram Highway as a "potential wilderness" addition. When the existing overhead powerline which runs also the edge of the road is placed underground and the road obliterated, the roadway will be automatically within the statutory wilderness area of Everglades National Park. This potential bike route is another segment that would require legislation by Congress deleting it from the park's wilderness prior to its authorized use for bicycling.



#### STUDY METHODOLOGY

This <u>Bike Trail System Feasibility Study</u> is being done in two phases. Phase one is the <u>Bike Trail System Corridor Study</u>. The purpose of which is to identify and evaluate various alternative routes or combinations of route segments within the headquarters to Flamingo corridor. Phase one will conclude with the selection of a proposed bike trail system corridor. That selection will be based on an analysis of the opportunities and limitations inherent in the park environments as represented by the following attributes (to the degree that available data permits):

- Existing visitor support and interpretive facilities
- Existing roads and trails
- Potential origin/destination points
- Natural diversity
- Sensitive resources
- Climatic factors /mosquitos
- Public safety

The analysis also includes consideration of the needs of the different user groups the bike system is intended to serve. Those needs are described in the user group characteristics section.

Phase one will be done in three steps. 1) This <u>Preliminary</u> <u>Alternatives</u> document describing all potential routing options is the first step. 2) After public comments are compiled and analyzed the second step will be to assess the probable environmental consequences of each alternatives and to prepare

preliminary cost estimates. This will allow comparison of the alternatives in both environmental and financial terms. 3) Phase one will conclude with the selection of the proposed bike trail system routes(s). The specific design characteristics of the route (or route segments) will be addressed in phase two the <u>Bike Trail</u> System Plan.

Phase two will include a detailed description of the proposed bike route system. It will likely consist of a section-by-section descriptions of:

- 1) Ride characteristics.
- 2) Interpretive resources.
- 3) Support facilities.
- 4) Design recommendation as to alignments, surface treatments, and trail widths will also be done as part of phase two.

PHASE ONE/CORRIDOR STUDY ..... PRELIMINARY ALTERNATIVES
Project Goals

This project is being done to begin the process of achieving the following goals:

- To make Everglades National Park a safe place to ride a bicycle.

- To expand bicycling opportunities in Everglades National Park to accommodate the growing diversity of bicycle user groups.

- To provide an alternative means of environmentally compatible recreational access for seeing, sensing, and enjoying the park.

# PRIMARY ISSUES

The study will address the following primary issues:

#### Bicycle Safety

Although bicycle use of the Flamingo corridor at Everglades is sporadic in both time and volume of use, there is no question about the hazardous situation that exists when individuals or groups ride along the edge of the narrow, 2-lane, main park road between the entrance and Flamingo.

The narrow roadway (12' lanes) and lack of shoulders make it both difficult and dangerous when large, fast-moving vehicles pass bicycles sharing the roadway. No other paved road links Flamingo

to the park entrance and the surrounding metropolitan region. Weather factors also affect bicycle safety at Everglades. Gusty winds affect bike control for even the most experienced cyclists and wind contributes to rider fatigue, particularly on long open stretches of the 38-mile Flamingo corridor. Rain -- particularly heavy downpours which are typical in south Florida -- affect motorist and biker visibility as well as traction. The combination of heat and high humidities requires facilities for shade and shelter.

Issues of bicycle /pedestrian and bicycle/bicycle conflicts will be addressed for those bike system segments where potential problems exist or could exist depending on alternatives for the study.

Specific design-related issues eg., trail width, surface treatment, etc) will be addressed in the technical sections of the study.

## Bicycle User Diversity/User Needs

Just as it is possible to identify a great diversity of park visitors, it is also possible to identify a wide range of bicycle user groups. Recent advances in technology have produced an amazing assortment of bicycle equipment and a growing interest and participation in the activity of bicycling. Existing and potential bike riders at Everglades may come alone or in large groups (up to 150 at times); they mat be serious racing types doing training rides of long distances and high speeds; they may be retirees, or families on single or 3-speed bikes, or children on BMX-style bikes; they might be a local fisherman from a nearby migrant worker

camp; or they might be mountain bike riders looking for an off-road route for their fat-tired bicycles. No single solution is going to serve the use patterns of all these groups. This study will consider the need for a system of bicycle routes in response to this diversity consistent with park legislation and management goals.

#### Planning Objectives:

This study will identify strategies to achieve the following objectives:

- To extend bicycling opportunities from the (proposed) Dade County trail system to Flamingo in Everglades National Park.
- 2. To separate bicycles from motor vehicles.
- 3. To provide bicycle access from principal in-park origination points to major park visitor use facilities.
- To provide appropriate navigational (way finding) information to bicycle users.
- 5. To identify and locate desirable facilities for visitor comfort and safety along the bike route.
- 6. To provide a variety of appropriate bicycling opportunities and services in response to the needs of different user groups.
- To route bicyclists through a representative variety of park environments.
- 8. To avoid filling wetlands or interrupting natural water flow.
- 9. To prevent disturbances to park wildlife and wildlife habitat.

# RESOURCE OPPORTUNITIES AND LIMITATIONS

The following maps and/or narrative illustrate or describe the environmental attributes that will be used to determine the suitability for bike route status of various road and trail corridor segments within the study area:



The following is a list of existing interpretive developments along the main park road from the entrance station to Flamingo.

Development Site		Mile	Interpretive Content
1	Royal Palm (major interpretive development)	2	Exhibit room Taylor Slough ecology Anhinga Trail Wildlife of Taylor Slough Gumbo Limbo Trail Hardwood hammock vegetation
2	Long Pine Key Campground	4	Campground & picnic area (no interpretation)
3	Road pullout (wayside pullout)	5.4	Remnant forests of South Florida slash pine
4	Pineland Nature Trail	6.5	Fire ecology
5	Road pullout (wayside exhibit)	8.9	Pinnacle rock (Miami Oolite formation)
6)		9.7	Origin of hammocks
7		11.4	Origin of "Rock Reef"
8	• • •	11.4	Dwarf cypress forest
9	Pa-hay-okee	12.5	Water cycle Tree islands Wildfire Seasons of the Everglades
10	Road pullout (wayside exhibit)	18.2	Everglades "contradictions"
11	Mahogany Hammock	19.5	Hammock environments Hammock forests vs. temperate forests
12	Road pullout (wayside pullout)	24.2	Mangrove transition zone
13	Paurotis Pond	24.5	Picnic area (no interpretation)
14)	Nine Mile Pond	26.5	Wildlife
15	West Lake	30.5	Exhibit room Waterfowl of West Lake Mangrove Trail Influence of hurricanes Mangrove zone flora
16)	Mrazek Pond	33.2	Birds of Mrazek Pond
17)	Coot Bay Fond	33.7	Birds of Coot Bay Pond American crocodile
18)	Flamingo (major interpretive development)	38	Exhibit room Coastal prairie and Florida Bay ecolog



.8 1.6 MILES



PHASE ONE BIKE CORRIDOR EVERGLADES NATIONAL PARK / FLORIDA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE 160-40043-DSC-JAN 89







160.40044.DSC.JAN 89



ORIGIN DESTINATION MAIN ROAD SECONDARY ROAD AND TRAIL

#### CLIMATIC FACTORS

Heat, humidity, rain and wind are the climatic factors that most directly effect the potential Everglades bicycler. The subtropical climate of south Florida is characterized by two dominate seasons. The relatively dry season from November through April, and the hot, humid rainy season the remaining six months of the year.

The dry season is the heaviest use season and is more conducive to bicycling. The more comfortable temperature and humidity, and relative absence of insect pests -- particularly mosquitos make this the best time to bike in the Everglades. Wind is a much more pervasive factor that one might expect in this flat-land environment. As one cyclist recently reported "it some how blew-into your face whether you were going or coming... the perfectly flat road begins to feel like a 30 degree hill. A hill with no top to it and therefore no downhill side." (Miami Herald, 27, 1988). The wind is a year-round inhabitant, punctuated by occasional tropical storms and hurricanes. The dry season also results in the concentration of wildlife near water holes, making it easier to see the parks resident and migratory fauna. The rainy season on the other hand is much less pleasant for bicycling. Anyone planning a ride in this season should be prepared for heat and humidity, getting wet, and being attacked by mosquitos any time they stop in any heavily vegetated area. Fire roads and trails are regularly covered by standing water in many areas as well. The provisions of accessible shelter from the hot sun or unexpected downpours at reasonable intervals along a bike route should be considered as a necessity rather than an amenity at Everglades, particularly during summer months.



BUILT UP AND AGRICULTURAL LANDS
MANGROVE
CYPRESS
COASTAL PRAIRIE
FRESH WATER SLOUGH
PINE LANDS
FRESH WATER MARL PRAIRIE
HARDWOOD HAMMOCK
MARINE AND ESTUARINE

1.6 MILES .8 NORTH



PHASE ONE BIKE CORRIDOR EVERGLADES NATIONAL PARK / FLORIDA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE 160.40045.DSC.JAN 89



AREAS OF OCCURRENCE

SENSITIVE RESOURCES	1	2	3	4	5	6	7	8	9
FLORIDA PANTHER		х	x	x	x	x	х	x	х
CAPE SABLE SPARROW				x			х		
ORCHIDS & BROMELIADS		x						x	
CEREUS GRACILUS(COASTAL PRAIRIE (CACTUS) TRAIL AREA)									
WHITE FLOWERED SPYRANTHESIS	X (ROADSIDE ALSO)								
AESCHYNOMENE			х		х		х		
PRAETENSES			х		х		Х		

1 BUILT UP AND AGRICULTURAL LANDS

- MANGROVE
- 3 CYPRESS

2

5

6

8

9

- COASTAL PRAIRIE
- FRESH WATER SLOUGH
- PINE LANDS
- 7 FRESH WATER MARL PRAIRIE
  - HARDWOOD HAMMOCK
  - MARINE AND ESTUARINE





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#### USER GROUP CHARACTERISTICS

Any planning and design project that does not take the future users of that facility into account is doomed to failure. A bike system plan is no exception. Although, no scientific user study is available to provide definitive information about Everglade bicycle users groups, less formal research indicates that the following user groups should be accommodated by the park's bike trail system if at all possible:

#### TOURING BIKERS

- Group Size Ranges from one or two cyclists to club groups of and Skills 100 riders. Wide range of age groups -- from early teens to 50s and 60s. Usually experienced riders in good physical condition.
- Equipment Typically expensive rider owned 10 to 15 speed touring bikes. Riders usually carry raingear, water, maps and a repair kit.
- Ride Relatively long rides (20-100 miles per day) on Preference - paved surface without frequent interruptions. Speed varies from 10 to 20 MPH depending on route and weather conditions. Will normally choose road shoulder over separate bike path if path is crowded with slower riders or pedestrians. The route is normally pre-determined.
- Objectives Strenuous exercise, scenery(macro), and group affiliations are probably the important objectives.

#### RECREATIONAL BIKERS

- Group Size Small groups of unrelated adults or family groups and Skills from 2 to 8 people including children and adults. Range of experience and physical condition is typically mixed.
- Equipment Either owned or rented bikes of all types including one speed childrens BMX style bikes, three or tenspeed touring bikes, and/or fat-tire mountain bikes. Many recreation bicyclers will not be equipped with raingear, water, maps, or repair kits.

- Ride Shorter trips from 5 to 10 miles with intermediate Preference - Stops or destinations are preferred. Separation from motor vehicles and high speed riders is important for both physical safety and psychological comfort. Out and back/rides on the same route may be preferable to loops because they make it easier to adjust the length of the trip. Rides are less likely to be pre-planned.
- Objectives Moderate exercise, scenery enjoyment (at both large and close-up scale), nature study, and socialization are primary objectives.

#### MOUNTAIN BIKERS

- Group Size Usually small groups of 2 to 6 young adults in good and Skills physical condition. Off-road experience probably varies among the group.
- Equipment Expensive (\$300-900) rider owned 12 to 15 speed fattired "city" or mountain bikes. Riders usually carry raingear, water, maps, and repair kits.
- Ride Preference - Mountain bikes are normally more interested in the challenge than the distance of the ride and prefer a variety of terrain. 10 - 20 miles are typical trip lengths depending on the difficulty of the ride. A predetermined destination or loop is usually planned ahead by experienced riders, but spontaneous changes are acceptable.
- Objectives Strenuous exercise and access to more remote locations are frequent objectives of mountain biking participants. Destinations are as often related to the challenge of the terrain as to quality of the scenery, although both are important attributes of the most appealing routes.





Linear with Spur Connectors Alternative

This alternative concentrates use along the main park road. It requires the construction of either extended road shoulders or separate bike paths adjacent to the roadway – preferably one on each side of the road. Approximate length is 36 miles, not including spur roads.



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1.6 MILES

#### Royal Palm/Ingram Loop Alternative

This alternative would create a loop system with an origin point near the Royal Palm developed area. It would require construction of bike lanes or bike paths along an 18-mile segment of the main road, reconstruction of the obliterated .75 mile west end of the Ingram Highway and pavement of an 8'-10' width of the intact portion of Ingram Highway, for the remaining 10 miles.



160-40038-DSC-JAN 89





# 1.6 MILES

Pa Hay Ohee Spur/Long Pine Key Loops Alternative

This alternative is designed to serve bikers originating from the Long Pine Key Campground area and offers a combination of paved and off-road riding. It follows 12 miles of the main road corridor, a portion of the research road to connect the campground with Royal Palm, and 6.4 miles of the Long Pine Key Nature Trail. The short connector trail from the compercured to the research road is presented in the competition with its presented in the second sec from the campground to the research road is currently within the wilderness area. The main road segment would continue as a linear segment to the Pa-Hay-Ohee site.



EVERGLADES NATIONAL PARK / FLORIDA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE 160.40039.DSC.JAN 89





Long Pine Key Loops/Flamingo to Rowdy Bend Alternative

This alternative consists of two disconnected trail systems – one at each end of the main park road. The Long Pine Loop is the same as described under alternative three with the omission of the Pa Hay Ohee Spur. The Flamingo to Rowdy Bend segment is a linear route that would require use of 4 miles of the main road corridor and 3 miles of the Rowdy Bend and Snake Bight trails would be paved to accommodate all types of bicycles.



160.40040.DSC.JAN 89



![](_page_26_Picture_2.jpeg)

.8 1.6 MILES

Disconnected Linear Spurs Alternative

This alternative confines biking to areas away from the main park road. It provides linear routes originating at each of the two park campgrounds. The Long Pine Key route offers an off-road experience from the campground to Pine Glades Lake on the Long Pine Key Trail – a 13-mile round trip. It would also provide a paved path from the campground to the Royal Palm site, a 9-mile round trip. The Club Beach Spur would also be an off-road route using the existing 6.25 mile trail (one way).

![](_page_26_Picture_6.jpeg)

PHASE ONE BIKE CORRIDOR

EVERGLADES NATIONAL PARK / FLORIDA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE 160-40041-DSC-JAN 89

![](_page_27_Figure_0.jpeg)

![](_page_27_Picture_2.jpeg)

Combined Systems Alternative

The sixth alternative essentially combines many of the other alternatives into one comprehensive system. It does not include use of the Ingram Highway. This concept could be implemented in stages to respond to demand and available funding. It would provide a total of 56 miles of bike routes.

![](_page_27_Picture_5.jpeg)

EVERGLADES NATIONAL PARK / FLORIDA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE 160-40042-DSC-JAN 89

#### PARTICIPANTS/PHASE ONE - PRELIMINARY ALTERNATIVES

#### Denver Service Center

Dennis Piper, Team Captain, Planner/Landscape Architect, DSC Mike Bilecki, Natural Resource Specialist, DSC Anne Shewell, Visual Information Specialist, DSC Tom Murphy, Landscape Architect

# Harpers Ferry Center

Larry Tillman, Interpretive Planner, HFC

### Everglades National Park Participants

Michael Finley, Superintendent Rob Arnberger, Assistant Superintendent Keith Whisenaut, Resource Management Coordinator George Frederick, Concessions Management Specialist Dan Hand, Glades District Interpreter Skip Snow, Backcountry Management Specialist Bob Doren, Vegetation Management Specialist

# Consultant

Jeffrey Hunter, Dade County Bicycle Coordinator

![](_page_29_Picture_0.jpeg)

# United States Department of the Interior

NATIONAL PARK SERVICE

DENVER SERVICE CENTER 12795 W. Alameda Parkway P.O. Box 25287 Denver, Colorado 80225-0287

![](_page_29_Picture_4.jpeg)

IN REPLY REFER TO:

D18 (DSC-TEA)

JUN 2 4 1988

Jeffrey Hunter Dade County Bicycle Coordinator 111 NW First Street, #910 Miami, Florida 33128

Reference: Everglades National Park, Package 111, Project Type 15, Bike Trail Safety Study

Subject: Project Coordinator, July 18-22, 1988 Field Trip

Dear Mr. Hunter

Thank you for assisting Landscape Architect Mark Pritchett of our office regarding bicycling in Dade County and Everglades National Park. Mark, Natural Resources Specialist Mike Bilecki, and Team Captain Dennis Piper plan to visit Everglades National Park during the week of July 18th to begin work on our a bicycle feasibility study from the park entrance to Flamingo.

They would like to meet with you at your convenience to coordinate our study with the county's plans and to discuss bicycling needs and bike trail design in this unique environment.

As soon as an itinerary is firm, Mark or Dennis will contact you to coordinate the schedule. Our team looks forward to meeting and working with you. If you have any questions please contact Mark or Dennis at (303) 969-2410 or FTS 327-2410.

Frederick Babby for

Donald A. Falvey

cc: Reg. Dir., Southeast Region Supt., Everglades

![](_page_30_Picture_0.jpeg)

IN REPLY REFER TO:

# United States Department of the Interior

NATIONAL PARK SERVICE

EVERGLADES NATIONAL PARK AND FORT JEFFERSON NATIONAL MONUMENT P.O. BOX 279 HOMESTEAD, FLORIDA 33030

June 12, 1989

Jeff Hunter Dade County Bicycle-Pedestrian Coordinator 111 Northwest 1st Street Miami, Florida 33118

Dear Mr. Hunter:

We appreciate your recent contact regarding the possible development of a bike trail leading from Florida City and Homestead to Everglades National Park along State highway 9336. As you are aware, the South Dade Land Corporation has erected a fence paralleling the highway near the entrance to the park, and the National Park Service has objected to the location of the fence due to aesthetic and safety concerns.

Should a bike lane be constructed along this route with the requisite widening of the road and relocation of the fence, many of our concerns would be greatly diminished. We feel a bike lane would be required on both sides of the highway. As well, sufficient highway easement would be required to relocate the fence to assure necessary room for vehicles to pull-off when requiring emergency repairs, etc. Similarly, we feel that aesthetics of the fence should be adequately provided for through vegetative landscaping. This highway is the primary entrance into the park and should provide a safe and attractive entryway for the visitors arriving to tour the area.

As you are aware, we are involved in a planning effort at this time to evaluate the possibilities of an extensive bike trail system within the park. Hopefully, the outgrowth of this study will result in a bicycle trail connection between Everglades National Park and the rest of Dade County and broaden the recreational opportunities available in the area.

We are supportive of your endeavors and view your suggestions as a potentially viable and constructive solution of the issues in question.

Sincerely,

linberg.

(R Michael V. Finley) Superintendent

MPO SECRETADIAN MECTA 200 1 4 1985