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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
EVERGLADES NATIONAL PARK
P.O. BOX 275
HOMESTEAD, FLORIDA

0.7.

June 4, 1948

MEMORANDUM for the Director:

Herewith are two copies of the report on the Fahkahatchee Slough area in Collier County.

Coordinating Superintendent Vinten is on a field trip to the Fort Jefferson National Monument and is therefore unable to sign the report at present. He has seen and corrected the draft copy of the report, though.

I am sending this report to you direct because your office has indicated that you are anxious to have it as soon as possible.

D. B. Beard

Daniel B. Beard,
Superintendent

cc: Region One
C.R. Vinten

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
EVERGLADES NATIONAL PARK
P.O. BOX 275
HOMESTEAD, FLORIDA

SPECIAL REPORT

ON

THE ROYAL PALM FOREST OF FAHKAHATCHEE SLOUGH
COLLIER COUNTY, FLORIDA

Prepared By
Daniel B. Beard, C.R. Vinten, Earl M. Semingsen

May 28, 1948



Daniel B. Beard, Superintendent,
Everglades National Park

C.R. Vinten, Coordinating Superintendent,
Southeastern National Monuments



Earl M. Semingsen, Chief Ranger,
Everglades National Park

SUMMARY

On May 13, 1948, Superintendent Beard and Chief Ranger Semingsen of Everglades National Park with Coordinating Superintendent Vinten of St. Augustine, inspected Fakahatchee Slough in Collier County, Florida to report on natural values of the area.

Since early in the present century, the Slough has been held by logging companies for future use, but actual work did not begin until 1944. Some attention had been directed to the area by various botanists and two had suggested it be included in Everglades National Park. In the last two years, representatives of the National Geographic Society and National Parks Association were there.

Fakahatchee Slough is a natural drainageway from the northeast, but water moves slowly in the dry season. Recurrent fires have laid waste to much of the surrounding country and done some damage to the Slough itself. The vegetation is varied because of post fire succession. Wildlife characteristic of the Big Cypress Swamp is present, but no bird rookeries are in the Slough to our knowledge.

The Lee Cypress Company has logged off the southern ten miles of the Slough and will probably finish with the area proper in the next six years. Cypress trees are girdled in advance. Then railway lines are built into the area followed by the cutting and skidding crews. Logs are hauled to base camp for transshipment to the mills. One million board feet per week are being taken out. Although it is a large and cumbersome operation, prices are high and a margin of profit is possible. But even with reduced prices, if they should come, we would not expect the operation to close down. Cypress lumber is now reaching its end and is much in demand.

Fakahatchee Slough contains the largest stand of royal palms in the United States and is the only place where mature royals are found in close association with mature cypress. It is estimated roughly that there are over 5,000 royal palms in the Slough whereas not over 150 grow in the other two colonies of southern Florida. About six sections, or 3,720 acres, of land remains to be cut in this cypress-royal palm association. North of these sections the royal palms are not found, but the cypress-hardwood swamp continues.

Logging operations were not found to be as destructive as pictured, nor does it appear that hurricane damage to royals in cut over areas will be as bad as some suspect. Where logging had passed by, the scars quickly healed. A considerable number of other tree types remain standing and surrounding the royals to afford protection from hurricanes. The royals are from 75 to 100 ft. tall and remaining growth averages 50 to 60 ft.

Although it is unfortunate that the cypress is being taken out, it is now too late to save much cypress and questionable if it ever could have been saved anyway. We hope that it may be possible to save one section, as an example of undisturbed virgin cypress and royal palm forest. No comparable exhibit of such variety and size remains in this country. The idea is worth exploring with the owners.

The area has considerable scenic attractiveness of a "Green Hell" type, even after the cypress has been removed. We believe that the mature royal palm forest even without the cypress is worth consideration as a national monument. But there are many practical considerations such as oil leases, acquisition funds, and so forth, which would make such a project difficult.

Originally, royal palms were found in Dade, Collier, and mainland portions of Monroe Counties in Florida. There were several colonies, but they have been reduced within the present century. Cold weather is a limiting factor in their distribution, but site location is not restricted. Forest fires may have been a factor in distribution.

2 copies

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NATIONAL PARK SERVICE

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File:
Big
Cypress

----- NATIONAL PARK

FILE NO. 10.

BIG CYPRESS SWAMP

FLORIDA

(proposed)

Report on

THE ROYAL PALM FOREST OF FAHKAHATCHEE SLOUGH
Collier County, Florida

Prepared By
Daniel B. Beard, C. R. Vinten, Earl M. Semingsen

May 28, 1948

File:
AREA INVESTIGATIONS BRANCH
(L.J.Diederich)

IMPORTANT

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Special Report

on

THE ROYAL PALM FOREST OF FAHKAHATCHEE SLOUGH, COLLIER COUNTY, FLA.

Prepared By

Daniel B. Beard, C.R. Vinten, and Earl M. Semingsen

May 26, 1948

Acting under instructions of Director Newton B. Drury and Regional Director Thomas J. Allen, the writers inspected the Fahkahatchee Slough in Collier County, Florida, on May 13, 1948, to report on the natural values of the area from the Service viewpoint.

We covered approximately twenty miles singly or as a group by logging railway and on foot with Mr. J.R. Terrel, logging superintendent of the Lee Tidewater Cypress Company by arrangements made through Mr. Miles Collier of the Collier Corporation. All current logging operations were checked and several areas where logging had been completed were noted. The only sections that we were unable to reach were those now grown up in the extreme southern part of the Slough and some of the uncut portions in the northern tip.

Location of the Area

The spelling of Fahkahatchee that we have used is from the 1947 Collier Corporation map of Collier County prepared and copyrighted by Mr. D. Graham Copeland. It is called "Fahkahatchee Strand", but the word "slough" is in more common usage. The name has been variously spelled -- "Fakahatchee", "Fikahatchee" and "Fathahatchee". It is from the Seminole (probably the Miccosukee branch) and is presumed to mean "Forked River".

Fahkahatchee Slough is located in Collier County north of the Tamiami Trail and west of the State road #164 extending north from the Trail to Imokalee and Lake Okeechobee region. It is within Townships 49 to 52 S. and Range 29 E. It is roughly 25 square miles in size.

The nearest towns are Everglades to the south, Copeland to the east, and Imokalee to the north.

History of the Slough

Mr. Miles Collier told us previous to the visit that the Lee Tidewater Cypress Company purchased the lands in 1906 for future use. Mr. Terrel said that they had owned it since 1913 or thereabouts. It is possible that the corporation changed then. We do know that it has been held in private ownership over a considerable period of years because of cypress timber values. Actual logging operations on a big scale started

as a war measure in 1944 and have continued to date.

Various botanists have mentioned this slough in the past, but it did not receive much publicity until the owners of Hialeah Race Track in Miami obtained some royal palms for transplanting at the track about twenty years ago.

About 1941, Dr. John H. Davis of the University of Florida met Beard and Vinten in the field during the course of his botanical studies of southern Florida. At that time, he mentioned to them that western boundaries of the proposed Everglades National Park should include part of the Fakahatchee as well as more of the Ten Thousand Islands. Dr. Buswell, of the University of Miami, made a similar suggestion. In 1947, Messrs. Culver and Brown of the National Geographic Society came to the area and a picture and description of the area appeared in the February 1948 edition of the magazine.

During the winter of 1948, Mr. Deveroux Butcher of the National Parks Association was in southern Florida, and the Fakahatchee Slough was included in his itinerary. As a result of his trip, Mr. Butcher prepared an article entitled "Going, Going, -----" in the April-June, 1948 edition of National Parks Magazine. He stressed the unique features of the virgin cypress-royal palm forest and urged early action to preserve it with other associated flora.

Description of Fakahatchee Slough

Fakahatchee Slough is the southwest branch of Okaloacoochee Slough which is the natural drainageway of the sandy flatlands below the Caloosahatchee River west of the Everglades country. The rock formation is Tamiami of the Pliocene and consists of calcareous sandstones, sandy and fossiliferous limestones, with an occasional deposit of quartz sand.

Drainage is southward and sluggish except in the rainy season. There has been very little change in the drainage by man (unlike Everglades conditions). It is retarded by rank vegetative growth and by an accumulation of organic peat and muck. The underlying Tamiami rocks seem, in this locality, to be relatively impermeable. During the dry season, water stands in swampy puddles and small lakes.

The ground is flat and no perceptible change is noticeable although it is assumed that the slough is lower than the surrounding terrain. Several kitchen middens, presumably Caloosa, have caused small, high ground area. Caloosa and Seminole Indians once had a canoe route into the area from the Ten Thousand Islands to the south.

Recurrent fires have burned off all the country noted to the east and west of Fakahatchee Slough leaving those areas desolate expanses of pine and cypress stubs where cabbage palms continue to grow above an impenetrable undergrowth of willows. Within the Slough itself there are indications everywhere of numerous fires, but it has not burned to the same extent as the higher, drier ground outside. Willows again have taken over, but the various stages of post fire succession are apparent in many places.

It is therefore difficult to give a very accurate, concise description of the flora.

Royal palms and cypress seem to be the dominant trees in the climax growth. Associated with these are red maple, Florida willow (Salix amphibia Small), Florida ash, cabbage palm, wax myrtle, Wright palm (Paurotis Wrightii) and such hammock growth as live oak, gumbo limbo, and strangler fig. There are large numbers of air plants, epiphytic orchids, but a surprising lack of Oncidium and Cyrtopodium. Various fresh water marsh plants are plentiful. There is a fairly dense tropical undergrowth of coffee bushes, marlberry, and lancewood.

Generally speaking, the forests are extremely dense, but not very high except in the royal palm-cypress mature areas.

All forms of wildlife are characteristic in species and abundance to the Big Cypress Swamp country. The density of mammalian life is apparently greater than in the Everglades National Park. Mammals include the Florida black bear, otter, raccoon, bobcat, cougar, mangrove fox squirrel and white-tailed deer. We found more pileated woodpeckers than occur in similar areas of the park. Wood ducks and reptiles including alligators are relatively common. The egrets, herons, and ibises are not as common as in open lands of the Everglades country. The only rookeries that we know of in this general area are the Corkscrew white ibis rookeries about twelve miles north-west of where logging is now taking place and six miles west of Lake Trafford. They are not endangered by the logging operations.

The impenetrable nature of the swamp, in past years, has been favorable to the protection of all species; but the situation in the future will be different unless protection is available. The network of old logging railroad grades has opened up all the inaccessible places and the advancing draglines and skidders are opening new country.

Logging Operations

The Lee Tidewater Cypress Company has logged off the southern ten miles of the Slough. At the time that we were there, they were working in Sections 2 and 3 of T. 51 S., R. 29 E. and should be in T. 50 S. sometime within the next six months. While Fakahatchee Slough proper ends in the southern part of T. 49 S, the company expects to go beyond and estimates they will be working for the next sixteen years. We are not certain, however, whether they mean at this locality or in their other, extensive holdings in Florida. We suspect that Fakahatchee Slough will be completely logged off six years from now.

The first operation is timber cruising. Cypress is all they are looking for and the only timber taken out. In the area where work is going on at present, there are estimated to be about 500,000 board feet per forty acres.

Groovers come in next. These are usually Seminole Indians. Their job is to girdle the trees forty days in advance of cutting.

The next group to come in are the dragline operators. They scoop out muck and marl for a railway bed. The main line is continued through the approximate center of the Slough. Each 1,600 feet a spur is run to the left and right. Steel gangs and tie gangs move in laying 50 rails per day. Old steel is moved to new locations and set in place even before the road bed has dried out.

Next come the skidder and sawyer crews. There are two types of skidders: the overhead and the spar, both mounted on railway trucks. Overhead skidders are utilized when cypresses are scattered throughout the woods, spar skidders are used where cypress stands are relatively dense.

The overhead skidder has an 800 foot cable system (reaching half way to the adjacent spur railway line). When a tree is felled and trimmed, it is attached to the cable by a pair of tongs. The log is then dragged down a lane through the woods with one end high and the other end often bumping through the undergrowth. It is dropped beside the track to form a loading pile.

Spar skidders work on the same principle, but logs are skidded out from 360 degrees to form a loading pile at the track. Spar skidders are much more destructive to the forest than the overhead skidders. Five skidders are at work, two of them spar and three of them overhead.

Logs are placed on flat cars and hauled out to the base camp twice each day. On the day we were there, the noon train consisted of thirteen loaded flat cars. Mr. Terrel told us that one million board feet are removed each week.

Upon reaching the base camp, the logs are stock piled for trans-shipment by rail to the Lee Tidewater Cypress Company mills at Perry, Florida, not far from Tallahassee, way at the other end of the state.

The costs of this operation are very high. Sawyers working on a piece basis get as much as \$800 a month. There are many types of workmen: groovers, sawyers, dragline operators, skidder operators, railway engineers and train crews, mechanics, and so forth. Approximately 200 men are now employed. Residences for whites and negroes are located at the base camp as well as the offices, power plant, railway shop, and other facilities necessary for such an operation.

Finished cypress of good quality is now sold by the Lee Tidewater Cypress Company at \$350 per thousand board feet. Pecky cypress, used extensively for interior panel work, sells at \$250 per thousand board feet. The poorest grade of cypress runs \$75 per thousand board feet.

The logging operation was originally started to produce lumber for wartime needs and the base camp was built by the government (of California redwood, by the way). It is apparent that this logging operation could start only when prices were high because it is a very costly and somewhat

cumbersome operation. The trees themselves are often hollow with a considerable amount of the "pecky" wood around the hollow core. After cutting some trees are wholly discarded due to the tree being entirely center rotted. Before the war (1938) a similar project in the maximum boundaries of Everglades National Park was abandoned because of the quality of the wood. However, the demand for cypress is expected to hold because this wood is much desired and is now getting very scarce. If prices should happen to drop, a commensurate drop in labor costs would be expected (especially for this type of labor) and this already subsidized operation is far enough advanced so that economies could be reasonably expected that would permit continuance of the work.

Scenic and Scientific Values

Fahkahatchee Slough contains the largest stand of royal palms in the United States. It is the only place where a mature royal palm forest is found in association with a mature cypress forest. This type of forest is entirely unique in this country. The importance of the royal palm stand is in the abundance of large trees growing in a limited area. To appreciate this point one has only to compare it with Paradise Key and Royal Palm Hammock (Collier County) -- the only other mature royal palm colonies left. There are not over 150 mature trees in these two places combined. At Fahkahatchee Slough there are probably more than 5,000!

No mature cypress forests exist within the present limits of the Everglades National Park; but examples of such will be included if present Congressional legislation is approved permitting the park to be expanded north and northwest. This will not be a cypress-royal palm forest though.

We believe that there are now only about six sections of good royal palm-cypress area left uncut. This is north of present lumbering operations.

It is our opinion that logging operations have not been as destructive to royal palms as previously indicated by other observers. Relatively few of the trees have been cut down or knocked over. The danger from future hurricanes in logged over areas is not considered as great as pictured either.

Logging operations have left raw scars, especially along right of ways. But, in this extremely fertile country, the scars heal quickly. In places where logging took place four years ago they are scarcely discernable and the average observer would not even know that cypress had been cut out.

Admittedly, it is unfortunate that logging is taking one of the last stands of cypress left in the United States - perhaps the last really big stand; but it may be too late to save it and questionable if any extensive part of it ever could have been saved. If it took eighteen years for the Everglades National Park to become a reality with all the support that the project had, what chance would there have been to acquire the

Fahkahatchee Slough with its high valuation per acre? It is even questionable whether the Service could, if it had owned the Slough, prevented logging of cypress as an emergency, wartime measure when the actual need for cypress lumber was so great.

If a way can be found to save a single unlogged section of this Slough, it should be worth while. More than a section may be impossible at this stage.

There is considerable beauty to Fahkahatchee Slough -- a wild, humid, "Green Hell" type of beauty. The royal palm clusters or colonies throughout the Slough area are magnificent. The cypress does not have the same aspect as that which grows at Highlands Hammock State Park or Cypress Gardens. It does not have the hanging Spanish moss, or as much water at its feet. The cypress grows among many types of other trees and lacks, shall we say, the picturesqueness often associated with this species of tree.

We are frank to admit that the scenic value of the area, to our eyes, was not seriously impaired by the removal of the cypress. We are in full agreement that the royal palm forest without the mature cypress trees is well worth saving. Disregarding entirely all considerations of acquisition difficulties, political implications in relation to Everglades National Park, administrative problems, oil leases on the entire area, or development questions we would say that, standing alone, a considerable portion of Fahkahatchee Slough -- cut and uncut alike -- is worthy of consideration for national monument status. We believe that it would be a serious mistake to consider as valuable only the uncut portions of Fahkahatchee Slough. The feature to be stressed is the royal palm forest. However, by-passing a representative cypress and royal palm "exhibit" unspoiled by destructive logging operations, would be a "double-barrelled" conservation move of greater public interest than an exhibit of royal palms in the midst of a cut over forest. This idea seems worth exploring with the owners regardless of the agency that might ultimately administer it.

The Royal Palm

The first scientific description of the royal palm was made in 1815 from some specimens collected near Havana, Cuba. It was first called Oreodoxa, but the name was later changed by Gen. Roy Stone to Roystonea regia. Although we have not seen any scientific paper on the subject, it is accepted among south Florida botanists that the native royals of the United States are a different variety of palm from those found in Cuba. Most of the planted royals in south Florida cities are from Cuban or other West Indian stock.

Except for an unusual discovery by William Bartram in 1774, the known range of royal palms has been within Dade, Collier, and the mainland sections of Monroe Counties of Florida. Bartram described seeing what must have been a royal near Lake Dexter on the St. Johns River.

From various sources, and park records, we can deduce that the original range of the royal palm in southern Florida was about as follows; Miami rockland hammocks from Biscayne Bay southward and southwestward into the Everglades; occasionally in hammocks bordering Florida Bay on the south shore of the mainland; interior hammocks of the Seven Palms Lake country; hammocks of Cape Sable; hammocks north of Whitewater Bay to the Miami rockland keys; occasional shell mounds along the west coast rivers; Royal Palm Hammock and nearby hammocks in Collier County; Fahkahatchee Slough and hammocks nearby but none on the Florida Keys.

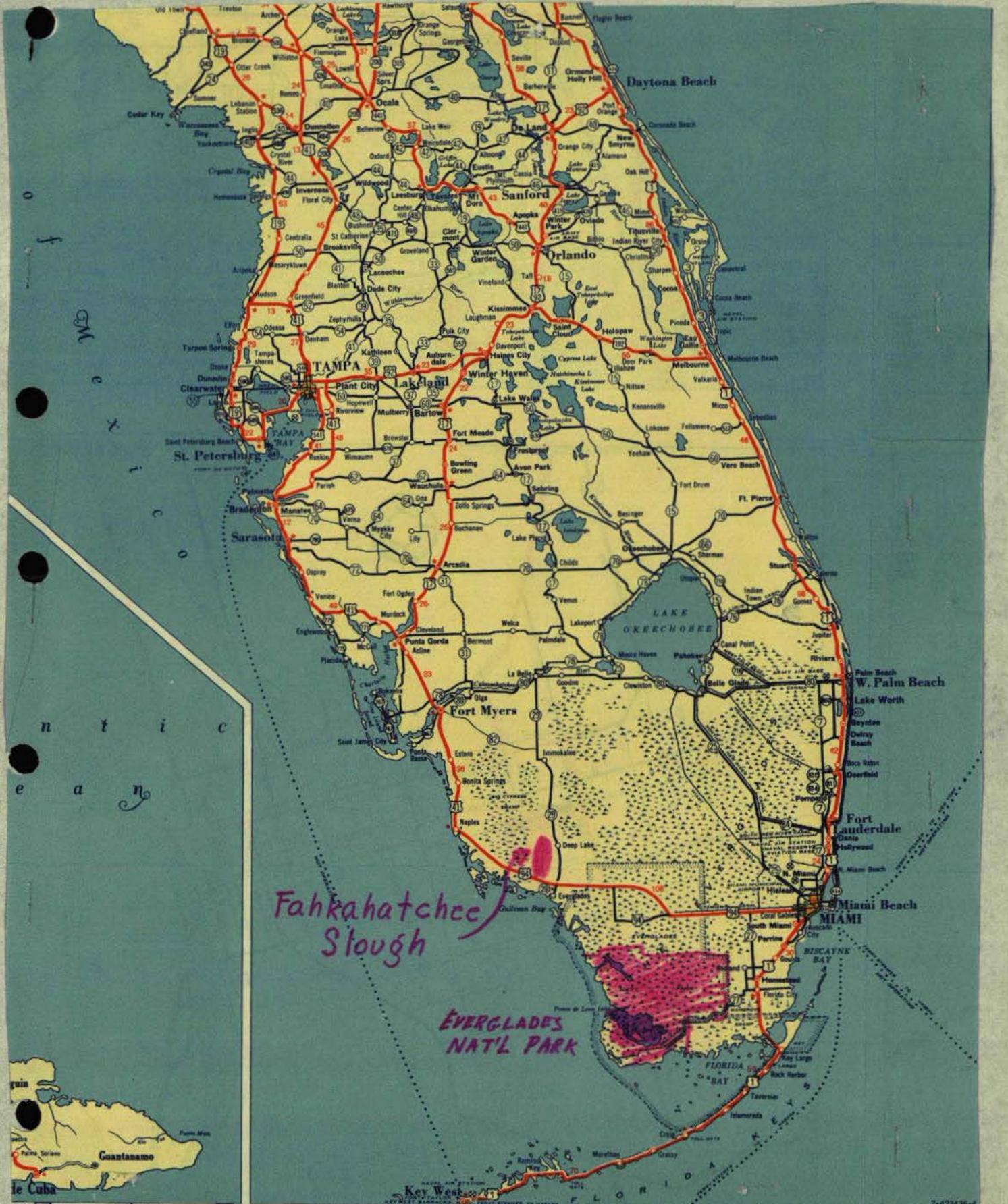
The largest colonies left during this century were at Paradise Key, Biscayne Bay, Royal Palm Hammock, and Fahkahatchee Slough. The present distribution of royal palms is: Paradise Key and one nearby key; several hammocks at the western extremity of Long Pine Key and between Long Pine Key and Whitewater Bay; Bear Lake Hammock; (all within Everglades National Park) Royal Palm Hammock; and Fahkahatchee Slough.

Cold weather is a limiting factor in the natural distribution of royal palms. It is known that several were killed in 1895 by frost near what is now the site of Everglades in Collier County. Royal palms have been successfully planted and flourish about as far north as Palm Beach on the east coast and the Ft. Myers and even Tampa vicinity of the west coast. In the central part of the state they do not flourish much above Lake Okeechobee.

In its natural state, the royal palm seems to prefer a moist location either in rockland solution pits, marl, muck, or sandy loam. The species is believed to be an indicator of climax growth. The tree seems to grow more rapidly and with larger trunk in cultivated conditions than in the wild where competition is keen and there is less soil fertility. For this reason, it is difficult if not impossible to judge the age of a mature royal palm. The ones in Paradise Key are said to be anywhere from 200 to 600 years old, perhaps they are much less than this and possibly the ones at Fahkahatchee Slough, growing under better soil conditions, are younger than the ones at Paradise Key which are the same approximate, average height -- about 75 to 90 feet.

There have been indications that forest fires are more limiting factors in the distribution of royal palms than site. The native royals today are usually located in moist situations, but this may be because they are thus protected from fire when young rather than a natural tendency to have "wet feet". Those growing in extremely moist locations are inclined more towards buttressed roots than those on drier lands. It has been noted though, that fires are not as destructive to mature royal palms as to many other species of hammock trees.

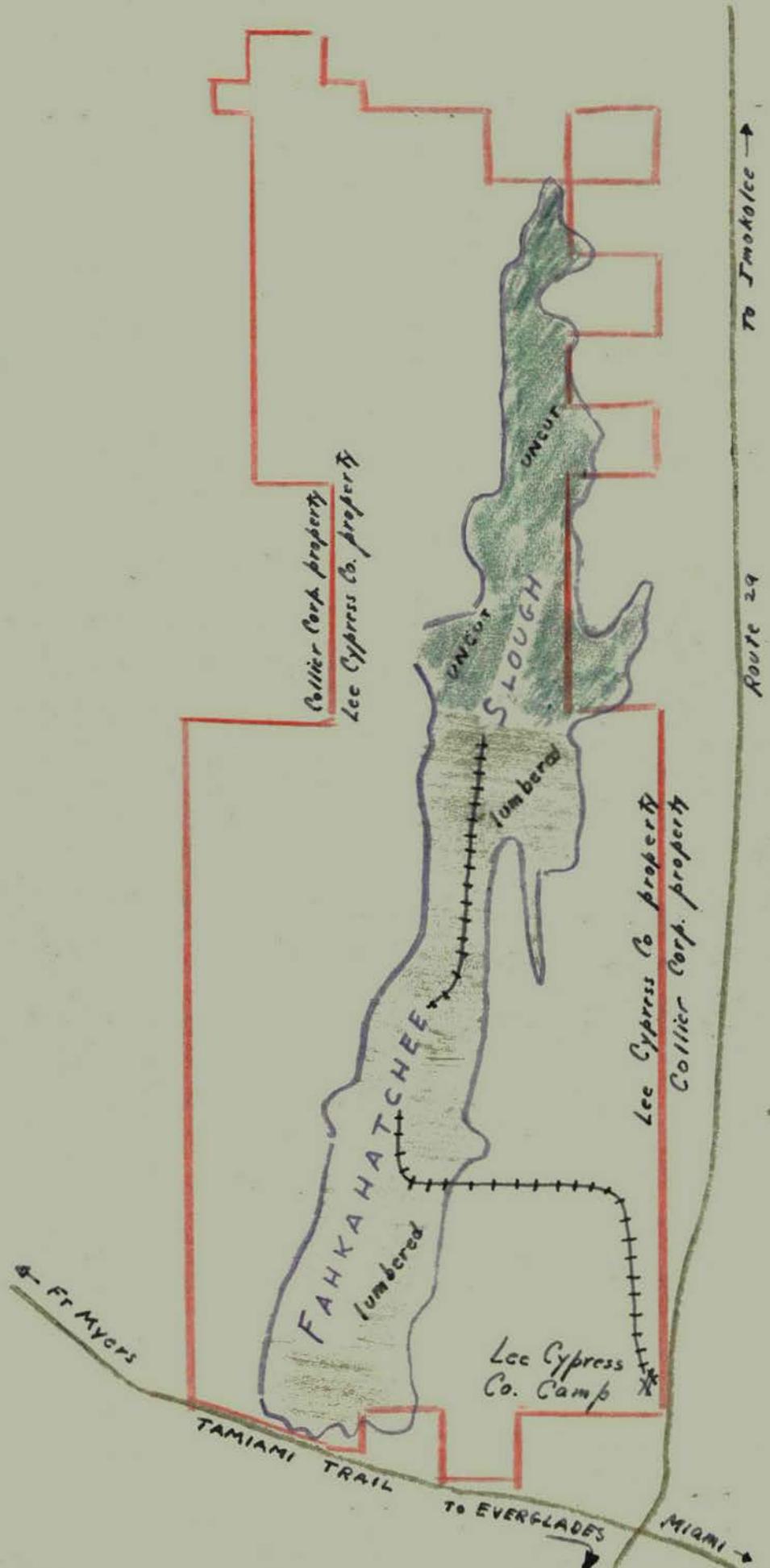
The danger of royal palms blowing over in hurricanes is not as great as may be supposed. Even recently planted royals will withstand a hard blow better than most other trees and it is very seldom that one is blown over. It is possible, though, that fires will burn away soil or surrounding vegetation which will weaken a royal against the full force of a hurricane. Two of the royals at Royal Palm Hammock blew down. When Royal Palm Hammock was made into Barron Collier Memorial Park, all the undergrowth and other trees were removed. Three large royals at Seven Palms Lake withstood the terrific 1935 hurricane, but died later. It is possible, in this case that the hurricane defoliated the trees and so injured the terminal growth that the trees did not recover fully. During the 1945 storm, at the U.S. Plant Introduction Station near Coconut Grove, many trees were lost growing in muck soil -- cocopalms, Australian pines, bamboo, Pithicalobium, Cassurina, and others but only two or three royals toppled.



Fahkahatchee Slough

EVERGLADES NAT'L PARK





ILLUSTRATIONS



The long, slender trunks of royal palms festooned with orchids and other air plants is characteristic of "forest grown" trees.



Royal palms and cypress in natural, uncut area.



A typical royal palm colony



Cypress and scattered royal palms in uncut area



Royal palm colony left after lumbering has moved on



A good example of royal palm colony just after cypress was removed



A small colony of royals in an area that was burned off in the last few years



In unburned, but recently lumbered, areas surrounding growth protects royals from hurricanes.



Although lumbering took place here within past two years, scars have already healed to great extent.



Dense, characteristic vegetation in Fahkahatchee Slough. Cabbage palm on left, slender Wright palm on right.



Lumbering debris along the logging railway



Spar skidder operation debris



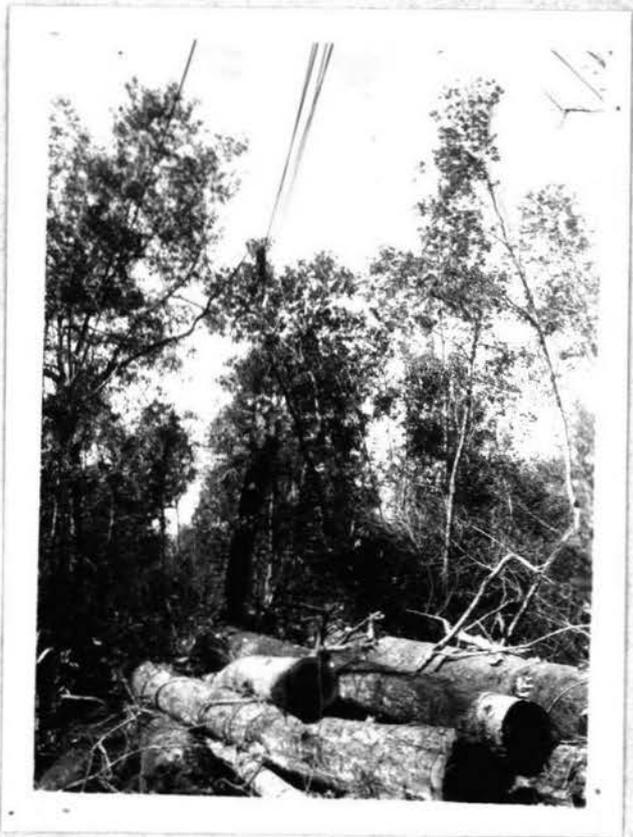
Overhead skidder at work



Typical logs, showing rotted centers surrounded by "pecky" cypress



Overhead skidder bringing log out of
the woods.



Overhead skidder showing how lane is made
through undergrowth by logs.



Draglines at work on main road and spur making railroad grades



Debris left from spar skidder operation



Regrowth along right of way about one year after logging.