D-277
File:
NPS
Inactive
Proposed
Areas

SPECIFIC AREA REPORT

PROPOSED CHASSAHOWITZKA SPRINGS NATIONAL MONUMENT

FLORIDA

United States

Department of the Interior

National Park Service

Region One

Richmond, Virginia

September 1962

Table of Contents

SUMMARY AND CONCLUSION

The proposed Chassahowitzka Springs National Monument is located about fifty miles north of Tampa, Florida; within a 200-mile stretch of the Gulf Coast where broad and shallow marshy shores and dense forests replace the palm-lined sandy beaches. Here, the public interest in the geological, biological, and historic values, joins the search for good fishing and hunting territory; and these interests replace the movement to beaches, golf courses, and attractions of other southern resort centers. The Chassahowitzka country is still wild by comparison, and the springs and subtropical river run through one of the finest relatively unspoiled hardwood forests to survive the march of modern development.

The area is readily accessible to excellent federal and state roads. The river is very clear and shallow, navigable for small, low-powered, shallow draft boats, canoes, and skiffs.

The natural resources of the area are recognized by the scientist and student of botany, geology and wildlife, as being both luxuriant and varied; and their interpretation for the layman can contribute greatly to his enjoyment of a very scenic and unusual subtropic river.
At present, the amount of private subdivision, vacation cabins, and fishing camps, is negligible compared to other important artesian rivers. Much of the area is in Federal or large private holdings, and land values are comparatively low.

The large artesian springs which are rich in geological interest, deliver an average and consistent flow of 53 million gallons per day to the clear, placid currents of the Chassahowitzka River. The pressure of the several springs has inspired research into the intriguing geological story which lies below the surface.

The ecology of the river is the most important element in establishing its superlative value as an underwater classroom and laboratory, for its waters and dependent plant and animal life change from fresh water to brackish to salt in a short run of two and one-half miles. This is what gives it distinction.

This area is still relatively wild and primitive, while similar streams nearby, have been lost to commercialism. At Chassahowitzka, the intrusions are negligible by comparison. They are largely little old buildings in quaint, shady settings, a "canal-type" subdivision with several new houses east of the springs, and a new home at Crab Creek Springs. Land speculation does not seem to be a problem, now. A logging operation is under way north of the springs and is moving toward the river. This poses a danger to this finest and most significant of the unspoiled spring-rivers.

Chassahowitzka Springs and River possess excellent scenic and scientific values. There are also high values for boating, fishing

and picnicking. However, in the case of Chassahowitzka, its high scientific and scenic resources, when properly interpreted, will bring broader and more substantial public benefits. The great potential here for "enjoyment through understanding" should not be depreciated nor destroyed by types of recreation which permit the over-indulgence of a few to deprive the many of a lasting experience with understanding.

Estimates of current value of wild lands along the river average $25.00 per acre. Local assessments are considered to be sixty percent of full cash value. Developed areas and other strategic areas will require individual appraisals.

RECOMMENDATION

It is recommended that Chassahowitzka Springs be favorably considered for addition to the National Park System as a National Monument.

DESCRIPTION

Accessibility

The springs area, at the headwaters of the river, is accessible over good paved road of about two miles, running west from highways U.S. #19 and #98. The river, marginal hardwood forests and coastal marshes are accessible by small inboard and outboard boats. Informal trails and unimproved logging roads lead to the springs at Crab, Baird, and Lettuce Creeks.

Population

In 1962 the population of Florida was nearly 6,000,000 people, one-half of whom reside within 200 air miles of the study area. However, these figures of resident population have little bearing on the ultimate visitation to be expected at the proposed monument. The tourist volume of 11,000,000 people annually, from all states and many foreign lands, offers the real guage of anticipated public use for many of these people participate in recreational and touring activities on a full-time basis.

Climate

The area enjoys fairly mild weather throughout the year and has fewer frosts than adjacent inland areas. Therefore it is more subtropical. Winter seasons have cool nights and sunny days, with very occasional "cold front" temperatures dropping to 30° F. Summer highs may reach a sultry daytime 95° F., with traditional cool, breezy nights. Average annual rainfall is over fifty inches, with heaviest precipitation in the months of June, July, August, and September. Other months are normally dry.

ANALYSIS OF AREA

Geological

The topography of the area is flat, having the almost level characteristic of the wooded Gulf Coastal Plain but with some adjacent hills. The existence

of many large, artesian springs in this part of the southeast focused attention on Chassahowitzka as the center of a region where over half the springs in the state are formed. Of the 74 major springs recorded by the Florida Geological Survey, 43 are located within a radius of 100 miles of the study area. In other words, this unique surface phenomenon of great "boils" of cool, clear water under pressure, is visible proof that something big is going on down there. These rivers, which mysteriously and suddenly appear from below, introduce a geological story which began many millions of years ago.

At Chassahowitzka Spring and River the setting for telling this story of 150 million years of geological knowledge has not yet been altered by commercial attractions which elsewhere divert public interest away from a worthwhile scientific and educational experience, into detours featuring the performance of bathing beauties, millwheels, and fish-feeding boat trips.

The geological story here is different from other regions. Florida is one of the most geologically stable areas in the world. Sedimentary rocks, here are about 4 miles deep and represent marine deposits formed under ancient seas. The upper layers of these deposits collect and deliver this huge water supply. Chassahowitzka Springs depend on the oldest of these "aquifers", formed in the Eocene age.

This great depth of sedimentary rock also contains a wealth of fossil deposits which reveal to the geologist the spectrum of life on the earth, from the invertebrates to the mammals. This knowledge has been recorded in the publication of the Florida Geological Survey, "Fossil Mammals of Florida", which could serve as one of the guides for mapping an interesting plan for interpreting the scientific values of Chassahowitzka.

Today, the surface evidence in the study area is largely the Ocala and Avon Park limestone formation of the Miocene period which was laid down 20 million years ago. These stories of science, together with the stories of modern day plants and animals in this delightful subtropical area, are worthy of greater public attention as a part of the American educational and conservation program.

Biological

Today, the very slight variations of only a foot or two in the river levels, the clearness of water, and its nearly constant temperature ranging from 74 to 75 degrees, are responsible for the interesting plant and animal life of the Chassahowitzka area. Aquatic vegetation is luxurious and reaches five tons per acre. (By comparison, a good crop of sugar cane is about 10 tons per acre.)

The shores of the springs, creeks, and river are covered with a lush growth of forest trees, crinum lilies, giant leather ferns, sagittarias, cattails, iris, sawgrass, wild aster, and those selective plants which favor moist locations but are found only along shores where water levels are stable or of minor fluctuation.

The bordering hardwood and palm forests, which give a subtropical, primeval frame to the broad flowing stream, are the last mature low-hammock forests in Florida. The logging operations under way downstream, emphasize the urgency of early acquisition as a means of preservation.

Views through this forest from the river reveal a dense overhead canopy of deciduous and evergreen trees, sparsely hung with Spanish moss. The low oak limbs are covered with aerial gardens; resurrection ferns, air plants, and native orchids. Four species of palms are seen; two sabals, one serranoa, and one needle palm. Vines include wild grape, smilax, Virginia creeper, trumpet vine, and poison ivy. Ferns are found in profusion and could be made a subject of a special study as well as a special nature trail. Lichens and mosses are also a normal part of the low-hammock ecology.

The fauna of the region is both common and unusual. There are the usual aquatic and marine fishes and crustacenas, especially silver mullet and blue crabs in great numbers, because of the abundance of

submerged vegetation. There are squirrels, deer, turkeys, quail, coons, and possums in the woods and fields, and many ducks and coots in the river. And by contrast there are occasional sightings of bald eagles, ospreys, big and little herons and egrets, and an occasional flock of wood or white ibis.

But, the unique chapter in this broad wildlife story is the transition of the environment from the fresh waters of the springs and upper river, to the brackish waters of the marshes, to the tidal lagoons of the Gulf coast. Here, in a short 3 miles, fresh water plants invade the salty areas, and salt water plants slowly reach into the fresh water environments. But, while salt water fishes and crustaceans move freely into fresh water, the fresh water fishes are destroyed by salt water invasions. This is a strange reaction where the flora can accept changes in both directions while the fishes and some other aquatic animals are limited to a "one-way" exchange from salt to fresh water only. The scientists are still not informed on the full reasons for this and further research is needed to explain such differences.

Historical

The margins of the clear spring and stream provided a suitable habitat for prehistoric Indians. One burial mound was known near the source of the river, and another was near the river further downstream. Near

the mouth of the river significant archeological discoveries have been made at Johns Island, where village deposits dating back to the early centuries of the Christian era have been tested. There are doubtless many other sites in the area.

History, in the sense of dramatic happenings and major activities, largely by-passed the beautiful stream. A few settlers and fishermen came to the banks of the stream, but not in such numbers as to disturb the essentially wilderness quality of the area.

Recreational

In the above comments, the major resource values of Chassahowitzka Springs and River have been summarized. In translating these values into terms of public enjoyment, these values clearly fall into the National Scientific Monument classification:

However, the river and its environs also have physical and practical limitations in any program of public service. So, by analyzing values, and appriasing carefully the existing limitations, we can produce a formula for guiding the selection of proper and appropriate recreational uses. To be more specific, the following lists have been compiled for Chassahowitzka with such a formula in mind, thereby separating in a logical way the proper and appropriate uses from the conflicting or

disturbing uses. The formula merely creates a visual picture of the character and objectives of public use programs after acquiring a clear understanding of values and limitations:

Conforming Uses	Non-Conforming Uses
Canoeing	Speed Boating
Rowing	Water Skiing
Outboard Boating 5 HP or less	Air boats
Scenic Cruises - electric powered	Public Address Systems
Glass bottom buckets or tubes	Glass bottom boats
Photography	Spear fishing
Nature trips and trails	Seining of any kind
Catwalks in wet areas	Commercial fishing
Interpretive field stations	Fish or crab traps
Visitor Center for Indoor Orientation	Swimming, high diving etc.
Boat rental and supply concession	Cabins - lodges - or camps
Snack bar-restrooms - outdoor tables	Neon signs
Sport fishing	Trot or bush lines
Picnicking	

The above two lists are illustrations of how the Chassahowitzka Springs and River can be controlled to provide a high type of public enjoyment through understanding.

Between the extremes of "conforming and non-conforming uses" there are existing activities which not only produce revenue but also perpetuate the quainteness and skills of pioneer living. At Chassahowitzka the mullet fisherman unloads his catch of mullet at the one-room fishhouse. He arrives in a skiff with an outboard motor hanging in a central "well" - not at the stern. Crab fishermen, who work the distant marshes, also land their traps and crates of live crabs at a primitive landing above the spring, in sight of the upper boil. Anyone visiting the spring looks at these personal little industries as a part of the Chassahowitzka picture and a traditional part of the life of the local people.

Existing Development and Use of Land and Resources

Little private development or commercial use is now being made of the resources in the Chassahowitzka area. Minerals of economic proportions are not known to exist and the land generally is not suitable for agriculture. Timber harvesting is an ever present threat but little has been done on the study area to date.

Commercial fishing for mullet and crab is carried on in the general area of the waterways and of course, sport fishing is an important recreational activity. Hunting in season is done to a lesser extent.

Several vacation cottages and residences are in locations which would make their continued use undesirable if a National Monument is established. However, large scale speculation in land or housing developments does not appear to be a serious threat at this time.

Significance and Need for Conservation

Service interest in the Springs of Florida, which had long been dormant, was revived in June 1961. In September, information regarding the status of all major artesian springs in Florida was assembled which led to a field study of comparitive values of the three relatively undeveloped springs and their dependent rivers. Those which had not yet been modified, and which had substantial values, were Chassahowitzka, Ichatucknee, and Blue Spring.

The comparative study placed Chassahowitzka above the other two in scientific values, scenery, and adaptability to serve the public in fields of interpretation, education, research, and forms of recreation dependent upon an understanding of natural values. Chassahowitzka was found to be the best in this field of the few remaining big springs which have not been commercialized, overdeveloped, or converted to artificial uses. It was seconded by Ichatucknee, and then Blue Spring, third.

The full significance of Chassahowitzka is not in the magnitude of its artesian flow which ranks 15th, of the 74 major springs in Florida; but in the combined natural resources of springs, river, and forest environment which still maintain an unaltered character as far as permanent exploitation is concerned. The subtropical woodland along the river is one of the last remaining associations of low-hammock and water vegetation, of superlative character. It is now a rich natural area which is growing in use as a great outdoor classroom and laboratory for elementary as well as graduate college students of the natural sciences. It also holds a great attraction for the layman, and its resources will continue to be productive as long as the existing natural conditions are preserved. Conservation of the Chassahowitzka area is therefore essential to continuance and extension of public enjoyment through understanding, because the natural values here call for research and interpretation, and not modification and "improvement".

Of all the factors considered, TIME is one of the most important elements of any public program adopted for Chassahowitzka, if this natural area is to be preserved. Encroachments will come fast because of its proximity to U. S. Highways #19-41-98 and 301, some of the heaviest travelled roads in the southeast. Interstate Highway #75 will add materially to the recreational travel in this part of Florida, and it is not far in the future.

Suitability

This area can be one of the gems of the National Park System. The more it is studied and understood the greater its values become.

We can point to nothing comparable to Chassahowitzka Springs and River in the National Park System. It is comparable to Everglades in its dependence on water; but here at Chassahowitzka its water resources are constant and uniform, and year round temperatures of 74^{o} - 75^{o} produce an entirely different plant world of luxurious proportions. It is entirely distinctive because its unspoiled shores exhibit a varied and luxuriant growth which adjusts in 3 miles from a fresh water to salt water environment. When compared with the commercialized shores of many large artesian springs and rivers, which once possessed similar green borders, and shady forest floors, the scattered private developments at Chassahowitzka seem negligible.

Because of nearly uniform water levels, the sites required for public and utility needs can be selected where a minimum of disturbance of

natural conditions will result. Small areas already modified should be acquired for such uses, or in some cases restored to natural conditions.

Much of the shoreline is wet hammock, of a fragile character which may be protected merely by placing it in public ownership as a national monument.

The moist nature of the woodland reveals a very low degree of fire hazard. In private ownership these same wooded borders are wide open to the dredges and bulldozers that are moving relentlessly into all corners of the southeast, especially where water exists.

It appears that the boundary lines suggested embrace all the territory required for effective preservation, administration and continuing representation of the flora, fauna and earth processes displayed by the area, thus presenting a comprehensive unit.

Feasibility

If the Chassahowitzka Springs area is favorably considered for inclusion in National Park System, all elements of feasibility will need additional study. However, at this time there appears to be no reason to anticipate severe or unusual problems.

In the sense that the springs, river and sufficient surroundings are relatively unaltered, the availability consideration is favorable. Partial public ownership by the Fish and Wildlife Service suggests those

parcels may be readily available through negotiation and cooperation during acquisition efforts. The relative scarcity of significant private development suggests the probability that the necessary private tracts can be acquired.

Costs of individual tracts will vary greatly for while some are almost entirely undeveloped others are occupied by cottages, camps, homesites and business establishments.

The establishment of a National Monument at Chassahowitzka Springs could have a considerable impact on the economy of the local area. Visitors can be expected to spend from several hours to several days in the area depending upon the purpose of their visit. Those who visit in the interest of scientific study and research will of course stay for longer periods and will probably re-visit the area many times. In any event, an increase in the number of people visiting the area will generate an increase in the need for tourist accommodations, food, services, and supplies. Since no overnight facilities or other commercial type establishments are contemplated inside the proposed area it is anticipated that local private enterprise in the nearby village of Chassahowitzka and along major access highways will satisfy the need.

Some private property now on the tax rolls of Citrus County will of course be lost for tax revenue purposes but increased value of private developments as a result of the increased visitation to the springs area should more than make up the loss.

At this time there is no record of expression of public interest and support of establishment of a National Monument at Chassahowitzka Springs. It is anticipated however, that considerable support for the proposal will be forthcoming from persons knowledgeable of the outstanding scientific values represented if the National Park Service recommends acquisition, administration and preservation of the area as a National Monument.

BOUNDARY AND ACREAGE

At Chassahowitzka Springs there is a need to include enough land inside the boundaries to insure sufficient territory that a continuing representation of the flora, fauna and earth processes may be protected and interpreted for the visiting public. Additionally, buffer is needed to prevent possible adverse influence from adjacent lands. There appears to be no need to acquire land specifically for space for administrative developments.

The area map at the back of the report shows what is believed to be a suitable and feasible boundary line for this proposed National Scientific Monument. Enclosed within it are 3800 acres, the minimum amount believed needed at Chassahowitzka Springs to provide representation of this type of area in the National Park System.

It is noted that 440 acres of the included land is already in the hands of the U. S. Fish and Wildlife Service. It is reasonable to assume that inter-bureau negotiations could work out a mutually satisfactory arrangement for acquisition and exchange of lands that would benefit both agencies and promote economies of operation for the two compatible types of management areas.

LAND USE AND POSSIBLE DEVELOPMENT

As a national monument, all private developments should be acquired and the small structures removed, or moved beyond the zones of public interest. There should be no inholdings in the acquisition plan, although some temporary rights might be extended to dependable owners for uses now enjoyed which might have a public value because of a traditional or quaint vocational use, such as the fish house and crab landing.

Headquarters, residence, and utility functions could be in a restored subdivision after canals have been backfilled to reduce the demands on waters of the springs. Visitor center, concessions, and public uses could be near the main spring but not in conflict with the scenic restoration of the spring area. Basic interpretive devices, which would tell the park story in the park out-of-doors, should be at trailside interpretive stations, along catwalks or boat trails; with the detached exhibits of the visitor center confined to a general orientation and

to subjects which cannot be interpreted at places the visitor goes to see in the field. There are suitable areas and adequate space for all public needs within the proposed boundary.

The U. S. Fish and Wildlife Service has need for more lands to consolidate its holdings in the Chassahowitzka National Wildlife Refuge. Our land acquisition authority should provide for exchange of lands between the park and the refuge beyond the boundaries of each, so as to facilitate purchase and affect economies for each agency.

Access to the area should be confined to the present road into the settlement of Chassahowitzka, and such existing or essential roads needed for protection. All other roads inside the area should be closed.

Interpretive stations, rest areas, and ranger stations could be located downstream in two or three selected areas for the convenience, information, and safety of visitors. A secondary visitor center and ranger station appears necessary near the boundary between the park and refuge, on the river.

The piling of the old logging tram road across the river could be retained and interpreted after proper marking to assure safety for boatmen.

PLANTS OF IMPORTANCE

Trees

Magnolia grandiflora - magnolia.
Juniperus virginiana - red cedar.
Liquidambar styraciflua - sweet gum.
Carya ovata - pignut hickory.
Quercus laurifolia - laurel oak.
Tilia floridana - basswood.
Magnolia virginiana - white bay.
Persea borbonia - red bay.
Carpinus virginiana - ironwood
Acer rubrum - red maple.
Taxodium distichum - bald cypress (few)
Fraxinus americana - ash.
Quercus nigra - water oak
Cornus stricta - dogwood
Ilex cassine - cassine holly
Quercus michauxii - basket oak
Diospyros virginiana - persimmon
Quercus virginiana - live oak
Acer floridana - Florida hardmaple
Ostrya virginiana - hornbeam
Quercus shumardi - red oak
Prumus Caroliniana - cherry laurel
Gordonia lasianthus - loblolly bay
Aralia spinosa - devils walking stick
Sabal palmetto - cabbage palm
Sabal minor - dwarf cabbage palm
Rhapidophyllum hystrix - needle palm
Serenoa serrulata - scrub palmetto

Shrubs

Ilex cassine - cassine holly
Myrica cerifera - wax myrtle
Viburnum (in bloom)
Itea virginica - (in bloom)
Baccharis hamilifolia - salt bush
Calycarpa americana - french mulberry
Cephalanthus occidentalis - button bush
Ilex vomitoria - yaupon
Lyonia (evergreen) - hobble
Viburnum - haw
Typha latifolia - cattail

Aquatics - At the Main Spring

Anacharis canadensis - Elodea (over most of spring floor)
Potamogeton illinoiensis - (a broad leafed pond weed around boil)

At second boil -

Potamogeton pectinatus
Vallisnerria americana
Ceratophllum demersum
Sagittaria lorata
Naias guadalupense
Algae - many
Enteromorpha prolifera

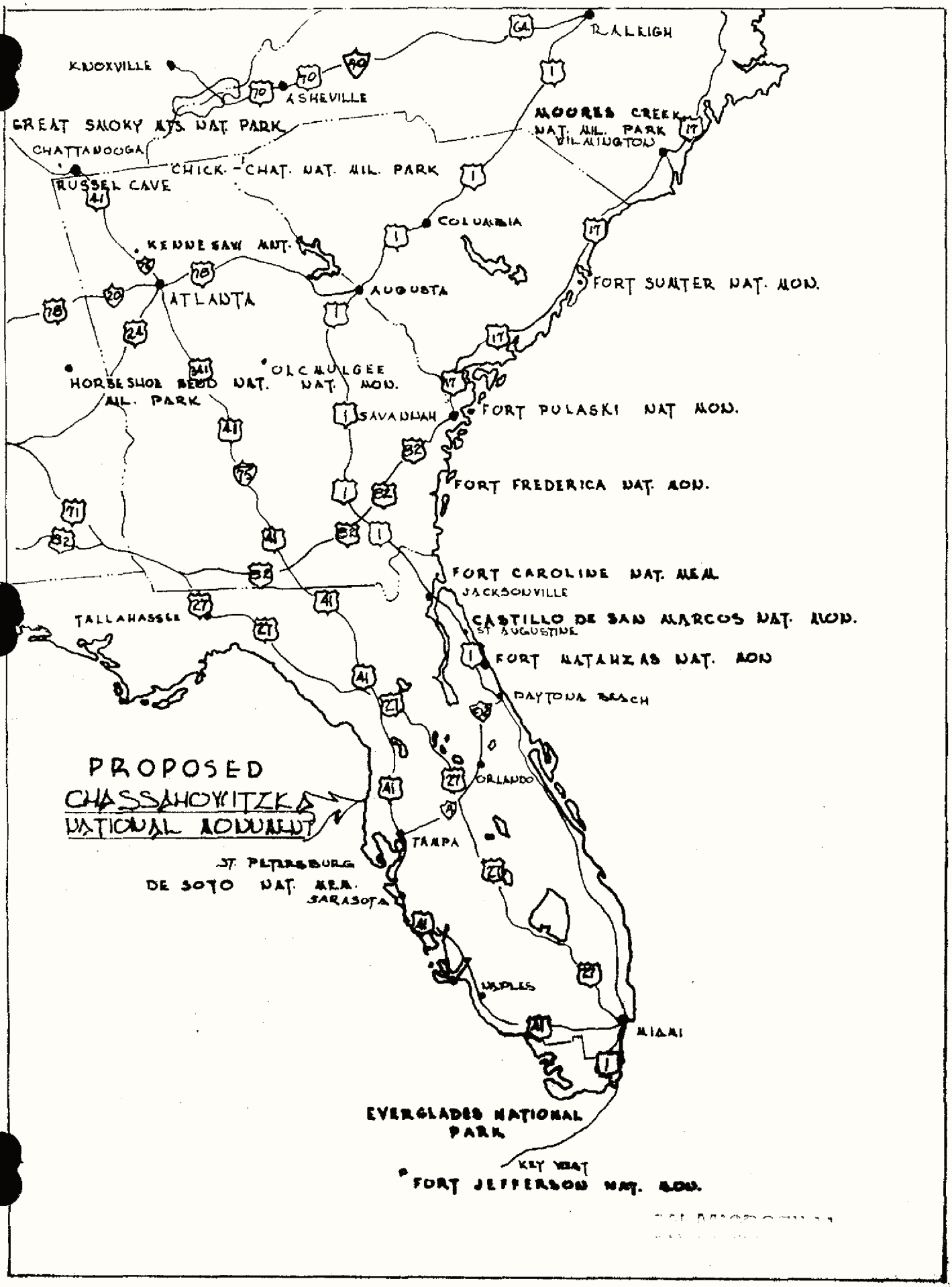
Other Plants

Crinum americanum - swamp lily
Acrostichum aureum - giant leather fern
Sawgrass - mariscus jamaicensis (no water hyacinth in current area of river)
Vitis munsomiana, and Decumaria

Up Lettuce Creek to Turkey Spring (shallow, bare of most submerged aquatics, bottom sandy - clear, narrow 12' to 20' wide. Has a few water lettuce (Pistia) in still waters).

Other Plants

Polypodium polypodiodes - resurrection fern (on trees)
Many epiphytes (air plants) and epidendrum orchids (on oak limbs)


KNOXVILLE
ASHEVILLE
RALEIGH
GREAT SMOKY MTS. NAT. PARK
MOORES CREEK NAT. MIL. PARK
WILMINGTON
CHATTANOOGA
CHICK.-CHAT. NAT. MIL. PARK
RUSSEL CAVE
COLUMBIA
KENNESAW MNT.
ATLANTA
AUGUSTA
FORT SUMTER NAT. MON.
HORSESHOE BEND NAT. MIL. PARK
OLCMULGEE NAT. MON.
SAVANNAH
FORT PULASKI NAT MON.
FORT FREDERICA NAT. MON.
FORT CAROLINE NAT. MEM.
JACKSONVILLE
TALLAHASSEE
CASTILLO DE SAN MARCOS NAT. MON.
ST AUGUSTINE
FORT MATANZAS NAT. MON
DAYTONA BEACH
PROPOSED
CHASSAHOWITZKA
NATIONAL MONUMENT
ORLANDO
TAMPA
ST. PETERSBURG
DE SOTO NAT. MEM.
SARASOTA
NAPLES
MIAMI
EVERGLADES NATIONAL PARK
KEY WEST
FORT JEFFERSON NAT. MON.

Bibliography:

1. Springs of Florida - Geological Bulletin No. 31
   Florida Geological Survey - Tallahassee, Florida
   by Ferguson - Lingham - Love and Vernon

2. The Natural Features of Southern Florida
   Geological Bulletin No. 25 - Florida Geological Survey
   by John H. Davis, Jr. PHD

3. Fossil Mammals of Florida - Special Publication #6
   Florida Geological Survey - by Stanley J. Olsen

4. Scenery of Florida - Interpreted by a Geologist
   Geological Bulletin No. 17 - Florida Geological Survey

5. Know Florida - State Department of Agriculture

6. Bulletin #29 - Florida Geological Survey - Geology of
   Florida

7. Native Trees of Florida, Erdman West and Lillian E. Arnold,
   University of Florida Press

8. Plant Lists and Inventory by Dr. John H. Davis, Professor of
   Botany, Graduate School, University of Florida