

Okefenokee -

page 28 - 2nd sentence
began instead of have began

turkey in picture is domestic -
need to check on stocking source.

PERSONNEL

1. John R. Eadie (EOD 08/07/72) Refuge Manager (GS-13/4, PFT)
2. John T. Taylor (EOD 05/13/74) Asst. Refuge Manager (GS-9/3, PFT)
transferred to Columbia NWR
09/10/77
3. Ronald G. Bisbee (EOD 08/27/71) Asst. Refuge Manager (GS-11/2, PFT)
transferred to Brazoria NWR
01/16/78
4. Wendell D. Metzen (EOD 08/08/71) Wildlife Biologist (GS-11/5, PFT)
5. Ronald A. Phernetton (EOD 01/09/74) Forester (GS-11/1, PFT)
6. George R. Vinovich (EOD 02/13/77) Forestry Technician (GS-4/1, PPT)
7. Lurrie V. Pope (EOD 11/21/76) Public Use Specialist (GS-7/1, PFT)
transferred to National Park
Service 05/21/77
8. Denise Mills (EOD 03/28/77) Public Use Specialist (GS-5/1, PFT)
transferred to Army Corps of
Engineers 11/05/77
9. Daniel C. O'Neal (EOD 07/31/77) Public Use Specialist (GS-5/1, PFT)
10. Cynthia D. Rivera (EOD 10/25/77) Wildlife Interpretive Specialist
(GS-5/1, PFT)
11. William C. Cone (EOD 01/01/50) Biological Technician (GS-7/8, PFT)
Retired 04/29/77
12. Richard S. Bolt (EOD 07/21/74) Biological Technician (GS-8/5, PFT)
13. Douglas E. Nuss (EOD 01/16/77) Biological Technician (GS-7/1, PFT)
14. Omer L. Bowen (EOD 03/11/63) Biological Technician (GS-8/5, PFT)
15. Cecile M. Davis (EOD 10/16/72) Clerk-Typist (GS-5/4, PFT)
16. Dartha L. Pittman (EOD 12/06/76) Clerk-Typist (GS-3/1, PPT)
17. Jay Burch (EOD 12/07/61) Auto & Equipment Mechanic
(WG-8/5, PFT)

- | | | |
|-----|---|---|
| 18. | Virgil Crews (EOD 01/05/69) | Maintenanceman (WG-7/5, PFT) |
| 19. | Barcus Hamilton (EOD 01/23/69) | Laborer (WG-3/5, PFT) |
| 20. | Ralph Davis (EOD 03/30/76) | Laborer (WG-2/1) 700-hr. appt. |
| 21. | Jonathan Haywood (EOD 09/28/77) | Carpentry Worker (WG-7/1) 700-hr. appt. |
| 22. | Sheila Roddenberry (EOD 10/08/77) | Laborer (WG-1/1) 700-hr. appt. |
| 23. | Barbara Chesser (EOD 10/12/77) | Laborer (WG-1/1) 700-hr. appt. |
| 24. | Nellie Snowden (EOD 07/14/77) | Laborer (WG-1/1) 700-hr. appt. |
| 25. | Ronald Alderman (EOD 01/10/77)
terminated 06/30/77 | Laborer (WG-1/1) 700-hr. appt. |
| 26. | Georgia Ann Griffis (EOD 06/27/77)
terminated 09/09/77 | Laborer (WG-1/1) 700-hr. appt. |
| 27. | Frank Rogers (EOD 01/17/77)
terminated 05/05/77 | Carpentry Worker (WG-7/1) 700-hr. appt. |
| 28. | Olcott Smith (EOD 01/31/77)
terminated 05/10/77 | Laborer (WG-1/1) 700-hr. appt. |
| 29. | Christy L. Steedley (EOD 02/01/77)
terminated 05/27/77 | Laborer (WG-1/1) 700-hr. appt. |
| 30. | Andrew Stultz (EOD 08/29/76)
terminated 02/18/77 | Carpentry Worker (WG-7/1) 700-hr. appt. |
| 31. | Reginald K. Herrin (EOD 09/20/76)
terminated 01/18/77 | Laborer (WG-1/1) 700-hr. appt. |
| 32. | Larry Milton (EOD 09/20/76)
terminated 01/19/77 | Laborer (WG-1/1) 700-hr. appt. |

YACC STAFF
October 25, 1977

- | | | |
|-----|-------------------|----------------------|
| 33. | Andrew M. Smith | Group Leader, GS-5/1 |
| 34. | William C. Kent | Group Leader, GS-5/1 |
| 35. | 22 YACC Enrollees | |

YCC STAFF
FOLKSTON CAMP
June 6 - August 12, 1977

- | | |
|----------------------|--|
| 36. Gary Lawson | Camp Director, GS-7/1 |
| 37. Carl Hicks | Group Leader, GS-5/1 |
| 38. Arthur Hudson | Group Leader, GS-5/1 |
| 39. Jonathan Haywood | Group Leader, GS-5/1 |
| 40. Charles Perry | Environmental Awareness Coordinator,
GS-5/1 |
| 41. Harry German | Environmental Awareness Coordinator,
GS-7/1 |
| 42. 30 YCC Enrollees | |

YCC STAFF
FARGO CAMP
June 6 - August 12, 1977

- | | |
|--------------------------|--|
| 43. Edwin Alphin Griffis | Camp Director, GS-9/1 |
| 44. Norma Jean Tillman | Environmental Awareness Coordinator,
GS-7/1 |
| 45. Vicky L. Sirmans | Group Leader, GS-4/1 |
| 46. Sterling Newton | Group Leader, GS-5/1 |
| 47. 30 YCC Enrollees | |

COMPREHENSIVE EDUCATION AND TRAINING
ACT (CETA) EMPLOYEES

- | | |
|---------------------|-------------------|
| 48. Jim Clayton | Folkston, Georgia |
| 49. Steve Bonner | Folkston, Georgia |
| 50. Ida Bell Martin | Folkston, Georgia |
| 51. Kim Bragg | Folkston, Georgia |

NON-PAID RECREATION AND WILDLIFE INTERNS

52. Robert E. Rondeau	Penn State University
53. Leslee Cassel	Goddard College, Vermont
54. Barry Zaffuto	Penn State University
55. Randy Quintrell	Clemson University, South Carolina
56. Kenneth B. Shields	Clemson University, South Carolina
57. David Grant	Clemson University, South Carolina
58. Cindy Hood	University of Georgia
59. Bobby Jones	Clemson University, South Carolina

REVIEW AND APPROVALS

John R. Eadie 3/1/78
Submitted by Date

Sam O. Drake Jr. 3/22/78
Area Office Date

Okefenokee NWR
Refuge

Regional Office Date

1



4



15



16



Left to Right: 14 & 9 & 5 & 3 & 6 & 17 & 18



10



19



Left to Right: 12 & 13



35 - West Side



YACC Staff, Left to Right: 33 & 34



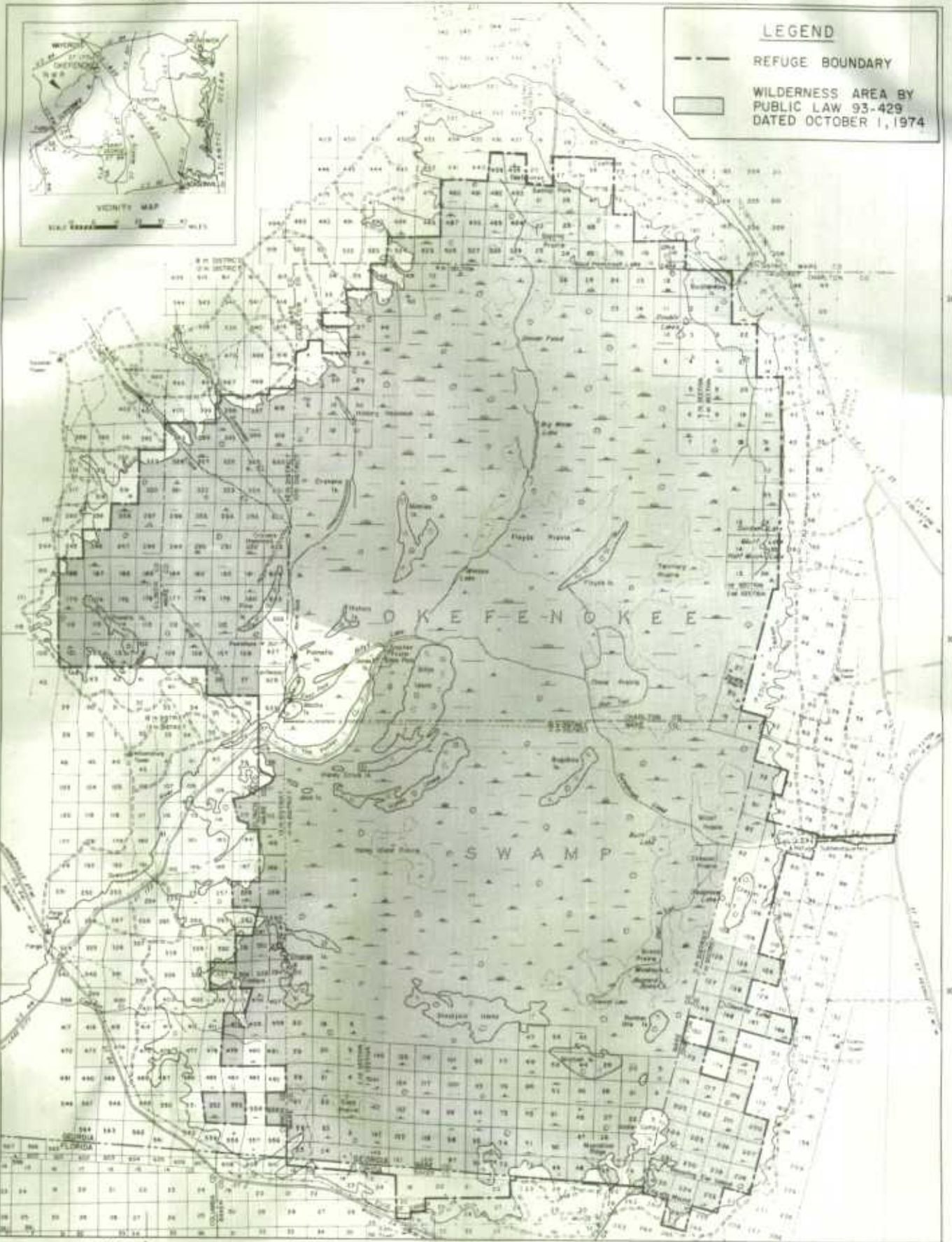
35 - East Side

OKEFENOKEE WILDERNESS AND OKEFENOKEE NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR
62°30'

CHARLTON, CLINCH, AND WARE COUNTIES, GEORGIA

UNITED STATES
FISH AND WILDLIFE SERVICE
62°0'



LEGEND

- REFUGE BOUNDARY
- ▭ WILDERNESS AREA BY PUBLIC LAW 93-429 DATED OCTOBER 1, 1974



18 E 12°30' R 19 E 18°20' R 20 E 18°0'

COMPILED IN THE BRANCH OF REALTY FROM SURVEYS BY F. & W. S. G. O. AND U. S. ARMY

TALLAHASSEE MERIDIAN

ATLANTA, GEORGIA MARCH, 1976

SCALE 0 1000 2000 4000 8000 16000

MEAN DECLINATION 1962

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I. GENERAL

A. Introduction

The United States Special Committee on Conservation Resources made an inspection trip to the Okefenokee Swamp on March 9, 1931. Nearly six years later, on November 30, 1936, a total of 292,523 acres of the Swamp had been purchased at \$1.50 per acre, and the Okefenokee National Wildlife Refuge was born. Mr. Earle R. Greene was the first refuge manager but was replaced by renown swamper John M. Hopkins on February 1, 1937. The Bureau of Biological Survey was the administering agency, and a Civilian Conservation Camp was transferred from the Forest Service to Okefenokee Refuge in April, 1937 in order to "accomplish approved physical developments". President Franklin D. Roosevelt officially established the Okefenokee National Wildlife Refuge on March 30, 1937.



OKEFENOKEE - AT HER BEST
NS-12-77, WDM.

Forty years later Okefenokee is still a magnificent National Wildlife Refuge. It has grown to 379,707 acres, and the ultimate acquisition goal is 412,000 acres which will include all of the area within the definitive swampline (a transition zone where the palmetto fades away and swamp begins). Okefenokee Refuge is in Charlton, Ware, and Clinch Counties, Georgia and Baker County, Florida. The designated Okefenokee Wilderness contains 353,981 acres.

Primary headquarters for the refuge is in Waycross, Georgia, with subheadquarters units at Camp Cornelia and the Suwannee Canal Recreation Area near Folkston, Georgia and Stephen C. Foster State Park near Fargo, Georgia.

B. Climatic and Habitat Conditions

1. Climate

It was extremely hot, it was extremely cold, it was extremely wet, and it was extremely dry. 1977 simply was an extreme year weatherwise. We faced the threat of major fires and the reality of minor fires. We feared that the drought and devastating fires of 1954-55 were going to return in 1977 and confirm the suspected 20-25 year cycle. Happily the real drought never materialized, and the largest fire was only a few acres.



This was a boat trail before the semi-drought of 1977. NS-13-77, JRE.

The 51.97 inches of rain recorded in 1977 were not far below the normal yearly average of 53 inches. However, the distribution by month was unique and resulted in drought and flood. The lack of rain in the spring created conditions requiring the closing of most canoe trails from May until December. Water levels fell below 114' MSL on the west side of the swamp in June and dropped to near 120' MSL on the east side of the swamp at the same time. The lowest recorded 1977 water level on the east side of the swamp was nearly $1\frac{1}{2}$ feet below the 1966-1975 average. It got dry!

We recorded two measurable snowfalls, but they were exciting rather than important. Temperature extremes ranged from a low of 16 degrees in January to a high of 102 degrees in June. Moderation was not the name of the game.

2. Habitat Conditions

Judging from overall wildlife response, refuge habitat conditions in 1977 never were just right. However, months of drying out resulted in good stands of moist marsh vegetation, i.e. beak-rush and paintroot. White water lilies, bladderwort, and other floating plants died back during the very dry months but bounced back as waters rose. Okefenokee entered the 1977 waterfowl season with an abundance of marsh foods.



Floating water lilies had a hard time floating during the summer of 1977. NS-14-77, Staff.

Alligators, fishes, and wading birds concentrated in and around canals, 'gator holes, and lakes during most of the year. When the high flood waters made a lake out of the swamp, all types of wildlife appeared to be scarce.



Swamp lakes, 'gator holes, and canals provided water during 1977 when there was very little water in the marsh. NS-15-77,WDM.

We have never had the funds or manpower to really evaluate habitat changes wrought by prescribed burning. However, regular eyeball estimates indicated outstanding crops of preferred wildlife foods after each burn. The fact that these burned areas are heavily utilized by deer, bear, songbirds, turkey, bobwhites, and every woodland creature common to Okefenokee cannot be ignored. There seem to be considerably more creatures in number and diversity in the prescribe burned areas than in the unburned areas. Maybe one of these days, we will be better able to determine the extent and types of changes occurring in burned and unburned areas.

Gallberry, oaks, pines, palmetto, grapes, huckleberry, blackberry, smilax, etc., produced well during 1977 and were heavily utilized by forest mammals and birds. Grasses, sedges, legumes, and forbs responded well to prescribed burning and were abundant.

C. Land Acquisition

1. Fee Title

Okefenokee Refuge did not grow in size during 1977, but rumors about the acquisition plans for the refuge were numerous, vocal, very angry, and mostly inaccurate. These rumors resulted in a Town Meeting in Folkston, Georgia, on May 19 at which time Assistant Regional Director (Refuges and Wildlife Resources) Crayton J. Lankford and Deputy Regional Director Ray R. Vaughn attempted to assure the locals that the Fish and Wildlife Service did not intend to extend the refuge boundary beyond the swamp-line. The meeting was pretty well received, and the rumors abated somewhat.

As 1977 ended, it appeared that Union Camp Corporation would make a 16,000-acre swampland donation to the refuge. This donation would permit Union Camp Corporation to claim a \$6,000,000 tax deduction and would add to the refuge about one-half of the swampland remaining in private ownership. It is understood that President Jimmy Carter will announce the Government's acceptance of this donation early in 1978.

2. Easements

Not applicable.

3. Other

Not applicable.

D. System Status

1. Objectives

Refuge objectives were updated in 1977 to a minor degree in an attempt to accommodate definition changes that have taken place in the Program Management System. We continue to feel fairly comfortable with the results of the original objectives setting process. The anticipated complexity of total objectives revision could well have something to do with that feeling, but the experience of six years provides a degree of confidence in the objectives as they are currently documented.

We were able to adhere to our Fiscal Year 1977 Annual Work Plan (January through September, 1977) and made good progress during that period (October through December, 1977) covered by our Fiscal Year 1978 Annual Work Plan. Our biggest problems, insofar as Annual Work Plan implementation is concerned, are related to the involvement of others in requiring unplanned details,

training assignments, etc. We have come to expect these "add-ons" and generally can handle most of them with little difficulty.

2. Funding

The Bicentennial Land Heritage Program is upon us, and we would like to anticipate good things for the National Wildlife Refuge System. However, many of the ordering, contracting, etc., delays that were with us during slimmer days still seem to be hanging around. The following is a summary of FY 77 and FY 78 funding for Okefenokee Refuge:

	<u>FY 1977</u>	<u>FY 1978</u>
1. BLHP Funding	\$116,600	\$1,064,000
2. 1210 (Migratory Birds)	119,000	74,000
3. 1220 (Mammal and Nonmigratory Birds)	16,000	17,000
4. 1240 (Interpretation and Recreation)	169,000	208,000
5. 1400 (Endangered Species)	48,000	50,800
6. 6820 (Forest-MNB Expenses for Sales)	34,000	34,000
7. 8722 (Forest-MNB Protection)	2,000	2,000
8. Suwannee River Sill Repairs (Job Order Not Issued As Of 12/31/77)	--	300,000
9. Construction Funds (Not BLHP)	261,700	--
10. Rehabilitation Funds	<u>76,000</u>	<u>--</u>
TOTAL	\$842,300	\$1,749,800

Okefenokee's mini-master plan (detailed copies are in refuge office) outlines the following projects for the BLHP years:

PROJECT 1 - Camp Cornelia Subheadquarters	\$ 872,900
PROJECT 2 - Suwannee Canal Recreation Area Improvements	1,606,200
PROJECT 3 - Suwannee River Sill Development	1,342,600
PROJECT 4 - Facility Rehabilitation at Jones Island	30,000
PROJECT 5 - Kingfisher Landing Development	574,300
PROJECT 6 - Upland Habitat Rehabilitation	251,600
PROJECT 7 - Wetlands Habitat Monitoring	64,500
PROJECT 8 - Sign Rehabilitation	<u>19,400</u>
TOTAL	\$4,761,500

Other funding available during 1977 included \$81,600 for two 30-man Youth Conservation Corps Camps. During the last quarter of Calendar Year 1977, \$86,800 was made available for the activation and operation of a Young Adult Conservation Corps Camp.

Although Okefenokee ended the year better off from a manpower ceilings standpoint, we still encountered severe manpower problems and ended the year with those problems. Lots of advancement opportunities enabled staff members to come and go almost at will. The following indicates the staffing pattern (permanent employees only) at the end of the year and the future (100% funding) planned staff:

CALENDAR YEAR 1977
PERMANENT STAFF (17)

1. Refuge Manager, GS-13
2. Ass't Refuge Manager, GS-11 (Vacant)
3. Wildlife Management Biologist, GS-11
4. Public Use Specialist, GS-11 (Vacant)
5. Public Use Specialist, GS-5 (Vacant)
6. Wildlife Interpretive Specialist GS-5
7. Public Use Specialist, GS-5
8. Biological Technician, GS-8
9. Biological Technician, GS-8
10. Biological Technician, GS-7
11. Clerk-Typist, GS-5
12. Clerk-Typist, GS-3
13. Forester (Admin.), GS-11
14. Forestry Technician, GS-4
15. Maintenceman, WG-7
16. Auto & Equipment Mechanic, WG-8
17. Laborer, WG-3

100% FUNDING PERMANENT STAFF (26)

1. Project Leader, GS-13/14
2. Ass't Project Leader, GS-11/12
3. Staff Biologist, GS-11/12
4. Ass't Staff Biologist, GS-9
5. Administrative Assistant, GS-7/9
6. Clerk-Typist (2 ea.), GS-5/6
7. Project Leader Trainee, GS-5/7
8. Refuge Ranger, GS-9/11
9. Refuge Ranger (2 ea.), GS-8/9
10. Forester (Admin.), GS-11
11. Forestry Technician, GS-7/9
12. Outdoor Recreation Planner, GS-11/12
13. Outdoor Recreation Planner, GS-9
14. Outdoor Recreation Planner, (2 ea.), GS-7
15. Outdoor Recreation Planner (2 ea.), GS-5
16. Mechanic, WG-10/12
17. Maintenance Worker, WG-10/12
18. Maintenceman, WG-8/10
19. Laborer (2 ea.), WG-3
20. Laborer (2 ea.), WG-4

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Restoration and re-creation of the Chesser Island Homestead was completed, and the facility was opened to the public on August 27, 1977. A Grand Opening for the facility, which includes a main house, rail fence, picket fence, log well, outhouses, muscadine arbor, cane grinding mill, syrup-making shed, storehouse, smokehouse, chicken and hog pens, furnishings, walking trail and exhibits, was held on October 29, 1977.

The 4½ mile Swamp Island Drive was resurfaced over its entire length and several sections that had faulty base materials were reconstructed by Littlefield Construction Co. of Waycross. However, the so-called finished job requires additional paving which is planned for Calendar Year 1978.



Resurfacing the Swamp Island Drive
NS-16-77, Staff.

Another trailer site was constructed at the Sill Entrance into the refuge. Biological Technician Doug Nuss needed a place to park his trailer home, and sites were not available off the refuge.

Domestic water systems at Kingfisher Landing, Camp Cornelia and the Suwannee Canal Recreation Area were outfitted with complete water improvement equipment (iron and sulphur control). The improved quality of the water is very noticeable and greatly appreciated.

Three new shelters for visitors using the Swamp Island Drive were completed.



A Swamp Island Drive Shelter
NS-17-77, Staff

Two borrow pits, that resulted from reconstruction of the Swamp Island Drive, were shaped and grassed to enhance their natural-looking appearance. The pits look more like ponds now.



This Borrow Pit was the fill source for reconstructing the Swamp Island Drive. NS-18-77, Staff.



A little work and the rough Borrow Pit is converted into a fairly natural pond. NS-19-77, DO.

BLHP construction funded projects completed during FY 77 and started to some degree during the first quarter of FY 78 included:

FY 77

1. New Motor Grader (ordered)
2. New Dump Truck (ordered)
3. New Stake Body Truck (ordered)
4. New Airboat (ordered)

FY 78

1. Rehab - Suwannee Canal Recreation Area Bldgs. (started)
2. New Trail Cutter (Requisitioned)
3. Automatic Gates - Kingfisher Landing and Suwannee Canal Recreation Area (Requisitioned)
4. New Shop-Office at Camp Cornelia
5. Sewage Treatment Plant at Camp Cornelia
6. Boathouse - Kingfisher Landing
7. Auditorium - Suwannee Canal Recreation Area
8. Drive and Parking Lot - Suwannee Canal Recreation Area
9. Boat Basin Rehab - Suwannee Canal Recreation Area
10. Water Treatment - Chesser Island
11. Boardwalk Spurs - (started)
12. Suwannee River Sill Structure

Only 15 months after it was requisitioned, the \$28,000 Night Tour Boat was received on December 21. A rubber-tired train that was requisitioned at the same time is due January 16, 1978.



Night Tour Boat at Suwannee Canal Recreation Area. NS-20-77, Staff.

Construction projects funded during Calendar Year 1977 required a great deal of planning, requisitioning, and Environmental Assessment writing. Obtaining proper specifications for major equipment items meant considerable leg, telephone, driving, and paper work.

Dr. Newell Wright of Valdosta State University was commissioned by the National Park Service to investigate the possible existence of cultural resources at BLHP construction sites at Camp Cornelia and the Suwannee Canal Recreation Area.

B. Maintenance

The 120 miles of canoe and boat trails were recut and maintained throughout Calendar Year 1977. This is a never ending chore and is an unusual requirement included in Okefenokee's Wilderness legislation. It also enables people to get out and enjoy the swamp over a limited area.



Boat Trail Maintenance.
NS-21-77, Staff.



Canoe Trail Maintenance
NS-22-77, DM

As usual the maintenance (custodial and cyclical) of refuge buildings, structures, grounds, and equipment was accomplished throughout Calendar Year 1977. Specifics aren't necessary since most of this type work is the same that is required year after year. It is important work though because it is what keeps the refuge operating.



Getting unstuck from between cypress trees--the airboat is wedged in tightly.
NS-23-77, RB.



Boundary signs don't usually last this long without bullet holes being added.
NS-24-77, JRE.



Road work is a continual chore.
This is Phernetton (Refuge Forester)
Phreeway. NS-25-77, Staff.

An environmental assessment was prepared during FY 77 for rehabilitation maintenance of the water control structures of the Suwannee River Sill. Funds totaling \$60,000 (revolving rehabilitation funds) were made available to accomplish the required work. Unfortunately, the Number 1 Structure of the Sill collapsed on July 14, 1977, and immediately a \$60,000 maintenance job was upgraded to a \$300,000 reconstruction project. In addition to having to prepare another environmental assessment, application had to be made to the Corps of Engineers for a 404 permit. A portion of the \$60,000 in rehab funds was used to construct a temporary coffer dam on the swamp side of the collapsed structure, and the remainder was used in purchasing a variety of equipment. As the year ended, we still awaited a Corps' permit and engineering design specifications so that the reconstruction project could be advertised and eventually accomplished.



A sagging Sill structure.
NS-26-77, WDM.



That's an engineer in the car.
NS-27-77, JRE.



A hurried-up coffer dam was constructed after the No. 1 Sill Structure collapsed and swamp started loosing water at a rapid rate.
NS-28-77, JRE.

C. Wildfire

Okefenokee Refuge has a \$1,517.44 per year contract with the State of Georgia whereby the Georgia Forestry Commission provides fire detection and suppression services for the refuge.

Three fires required suppression activities during the year:

- 77-1 - Campground Fire - High winds reignited an improperly extinguished campfire in the Primitive Campground and burned two acres of pine forestland adjacent to the campground near the Camp Cornelia Subheadquarters. The fire was reported and suppressed by refuge personnel on March 27, 1977. Damage was minimal.
- 77-2 - St. Regis Pasture Fire - This lightning-caused fire broke out on June 24, 1977 in Forest Management Compartment 9. The fire initially was reported and suppressed by the Georgia Forestry Commission. Four days later the fire rekindled itself in the extremely heavy litter layer, jumped the fireline and again had to be suppressed by the Georgia Forestry Commission. New fires kept breaking out within the burned area keeping refuge personnel busy for two additional days. The fire was finally

declared out on June 30. Six acres were burned. Tree mortality due to the fire was light; however, the many firelines which crisscrossed the burned areas exposing roots and skinning tree trunks, may leave the pine stand susceptible to beetle attack for some time. Compartment 9 is scheduled to receive a prescribed burn during the 1977-78 burning season and this action should remove the heavy litter layer that made this fire so difficult to control.

77-3 - Land Lot 260 Fire - This lightning-caused fire occurred on Land Lot 260, part of Forest Management Compartment 5. The fire was reported and suppressed by the Georgia Forestry Commission. Less than one-half acre was burned, and damage was minimal.

III. HABITAT MANAGEMENT

A. Croplands

Not Applicable.

B. Grasslands

Not Applicable.

C. Wetlands

About 90 percent of the Okefenokee National Wildlife Refuge acreage is of wetland types. Management of these wetlands is primarily limited to enforcement protection of the biota and the coordination of public use activities so as not to disrupt the natural cycles that have shaped and controlled the productivity of these environments. The Okefenokee Swamp is considered to be in an ecological stable state; and as such, the biological abundance and diversity could not effectively be enhanced through habitat manipulation.



Okefenokee takes care of itself and that includes the control of unwanted vegetation. Note the "Bonnet Worm" eating away at the Spatter-dock. NS-29-77, JRE.

D. Forestlands

Okefenokee National Wildlife Refuge has 12,620 acres of upland included in its forest management program. An additional several thousand acres of islands are designated as part of Okefenokee's wilderness area and are unmanaged except as noted in the section, Unmanaged Forestlands.

For management purposes, the 12,620 acres of upland forest are divided into 15 compartments ranging in size from 150 to 1500 acres as shown on the following map.

The objectives of the forest management program are: To provide habitat beneficial to a wide variety of wildlife native to this area with special emphasis on threatened and endangered species; to demonstrate the benefits of forest and wildlife management on the same lands; to enhance forest/wildlife oriented recreation, appreciation and education opportunities; to manage forest resources on a sustained yield basis; and to preserve unique vegetative types for scientific study and enjoyment.

The major tools used to accomplish these objectives are a long rotation (100 or more years), thinning on an eight year cycle, and prescribed burning on a three year cycle. Each of these tools is

carefully prescribed for each individual forest stand. Okefenokee's forest management plan is based on even-aged stands (with modification for certain wildlife species) providing diversity in stand type, age and size to meet the needs of an optimum number of wildlife species.

1. Timber Harvest

Alternating wet weather, dry weather and shutdown pulpwood mills limited timber harvesting activity during the year. Reichold Chemicals, Inc., Pensacola, Florida, completed a 1,400 ton stump sale in Compartment 1. A 1,150 cord pulpwood sale awarded to South Georgia Timber Company, Folkston, Georgia, in 1976 has been inactive during the entire year. Florida Fence Post Company, Folkston, Georgia, completed a 11,000 fence post sale and is working with the Folkston Fence Post Company on another sale. The South Georgia Timber Company and Lewis Chancey, Manor, Georgia, completed several salvage sales totaling 143 cords of pulpwood.



Posting operation helps do away with the undesirable "row cropping" appearance of a pine plantation and also opens the stand to sunlight.
NS-30-77, Staff.

OKEFENOKEE NATIONAL WILDLIFE REFUGE

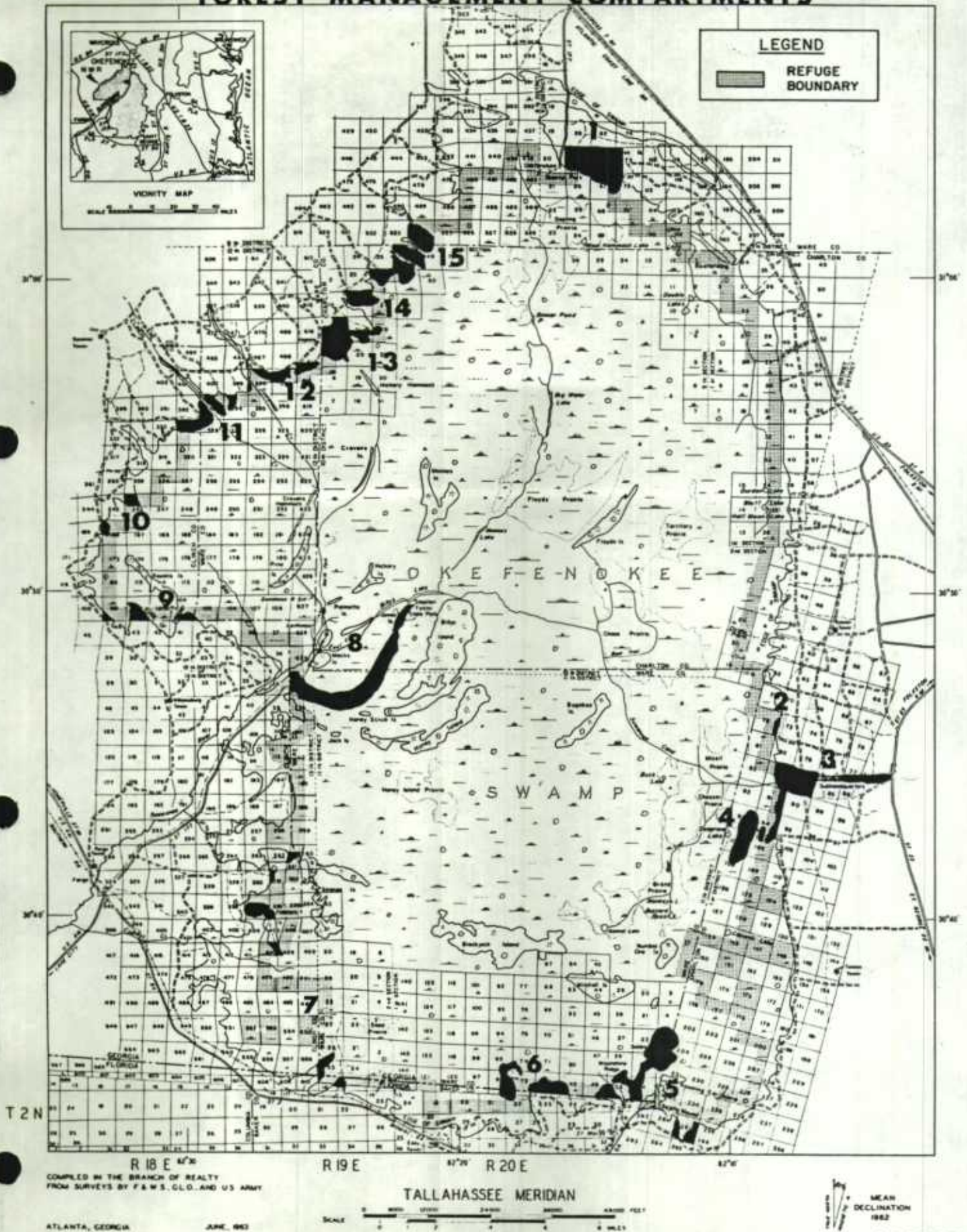
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CHARLTON, CLINCH, AND WARE COUNTIES, GEORGIA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

FOREST MANAGEMENT COMPARTMENTS





NOW, doesn't that look better!
NS-31-77, Staff.

1977 was one of the worst area wildfire years since the 1950's. Thousands of acres of industrial forest lands were burned by wildfire, then salvaged oversupplying the pulpwood mills with wood. When the mills began buying pulpwood again, they were stopped by a strike. During the remaining months of the year, the weather was too wet or the fire danger was too high. The result was that refuge receipts were down to \$4,761.04 for 1977. We are preparing to begin timber marking operations in three compartments (2, 3 and 4) during 1978. This, along with the outstanding pulpwood sales, should return receipts to normal in 1978.

Table (1) shows receipts for sales under contract during 1977
Table (2) is a 10-year timber removal summary.

TABLE 1
TIMBER RECEIPTS - CY 1977

SPECIAL USE PERMIT NO.	PERMITTEE	PERMIT DATES	PRODUCT	VALUE/UNIT	TOTAL VOLUME	TOTAL VOLUME	VALUE CREDITED TO CY 1977
RO 464	Reichold Chemical Co.	06/01/76-07/31/77	Stumpwood	\$6.76/ton	1,400.77 Tons	\$9,469.20	\$2,906.80
			Pulpwood	\$36.00/cd.	1.95 cds.	70.20	70.20
RO 468	South Georgia Timber Co.	06/18/76-11/18/78	Pulpwood	\$18.51/cd.	1,150 cds.*	21,286.50	0.00
OKE 31	Florida Fence Post Co.	12/01/76-04/30/77	Fence Posts	\$.04/post	11,095 Posts	443.80	271.44
			Pulpwood	\$36.00/cd.	1.50 cds.	54.00	
OKE 35	South Georgia Timber Co.	03/16/77-06/30/77	Pulpwood	\$12.00/cd.	36.88 cds.	442.56	442.56
OKE 36	Lewis Chancey	07/09/77-11/15/77	Pulpwood	\$12.00/cd.	21.24 cds.	254.88	254.88
OKE 37	South Georgia Timber Co.	07/27/77-09/30/77	Pulpwood	\$12.00/cd.	23.27 cds.	279.24	279.24
OKE 38	Florida Fence Post Co.	09/21/77-12/30/77	Fence Posts	\$.04/post	6,621 posts	264.84	264.84
OKE 39	Folkston Post Co.	11/16/77-03/31/78	Fence Posts	\$.04/post	10,000 posts	400.00	271.08
TOTAL RECEIPTS FOR CY 1977							\$4,761.04

* Estimated Values

TABLE 2

TEN YEAR TIMBER REMOVAL SUMMARY
(Actual amounts harvested during year)

CY	Sawtimber (MBF)	Pulpwood (CDS)	Stumpwood (TONS)	Posts (EA)	Total Value
1968	-	198.76	-	-	\$ 1,610.60
1969	-	-	-	-	0.00
1970	-	3421	-	-	34,210.00*
1971	-	3421	-	-	34,210.00*
1972	-	3421	-	-	34,210.00*
1973	-	295.33	-	-	5,695.60
1974	-	17.94	357.11	-	3,636.53
1975	217.4	296.27	-	1,400	21,987.55
1976	-	1,242.67	1,285.57	4,309	28,890.10
1977	-	83.34	430.00	20,184	4,761.04

2. Prescribed Burning

Prescribed burning is one of the most useful silvicultural and wildlife management tools utilized. When properly applied, some of the many benefits of prescribed burning are: reduction of wildfire hazard; control of diseases, insects and parasites; increase of available wildlife food supply; seedbed preparation for natural forest regeneration; improvement of access for forest and wildlife management; and enhancement of certain aesthetic qualities.



Bleak Looking -- This small stand of pines fell to Southern Pine Beetles. NS-32-77, RP.

Prescribed burning is of particular importance in the management of the red-cockaded woodpecker, an endangered species present in Okefenokee's longleaf pine uplands. Burning helps to maintain the open park-like conditions necessary to meet the needs of this species.



Prescribed Burning is an important management tool.
NS-33-77, Staff.

After a very poor start, the past burning season (December 1976 to March 1977) ended with a total of 2,854 acres burned. This is fairly good considering that we did not burn Billy's Island which adds 3,330 acres to the total. The coming burning season (1977-1978) looks good in spite of some very wet weather. As of this date (January 28, 1978), parts of Compartments 1, 3, 4, 5, 10, 13, 15 and Billy's Island have been burned.

Table Number 3 summarizes the results of the 1976-1977 prescribed burning season by compartment. In reviewing cost per acre figures, the reader should be aware that travel time between forest management compartments consumes a great deal of time and increases costs. Also average cost per acre figures are higher every other year when Billy's Island is not burned. Average costs per acre are considerably less when the 3,330 acre island with its 15 cents per acre figure is included.

TABLE NO. 3

PRESCRIBED BURNING ACCOMPLISHED (1976-1977 SEASON)

<u>COMPARTMENT</u>	<u>ACRES BURNED</u>	<u>MAN HOURS</u>	<u>COST PER ACRE</u>
2	160	90	\$ 5.21
3	27	24	7.46
4	240	48	1.76
7	320	48	1.24
8	467	50	.89
12	260	84	2.17
13	200	40	1.73
14	240	40	1.35
15	940	60	.52
	<u>2,854</u>	<u>484</u>	<u>\$ 1.40 Ave. Per Acre</u>

3. Timber Stand Improvement and Other Forestland Management Techniques

One of the main objectives of Okefenokee's forest management program is to provide the diverse types of habitat required to meet the needs of a wide spectrum of wildlife species. Habitat requirements of threatened or endangered species such as the red-cockaded woodpecker receive the highest priority. The types of T.S.I. work or other management techniques prescribed are those which will help to meet this objective.

Detailed forest management prescriptions were completed for Compartments 2, 3 and 4 during the year, and the prescribed work will begin during 1978.

About 50 acres of pine plantations were marked for thinning during 1977. The trees removed were utilized for fence posts. The 1977 Y.C.C. enrollees thinned 5 acres of a very dense 31 acre precommercial slash pine stand in Compartment 3. The remainder of this stand will be thinned in 1978. A great deal of wax myrtle also was removed from pine plantations in Compartments 3 and 8. Wax myrtle is conducive to encouraging very hot wildfires.



Forest measurements help to determine age of stand. NS-34-77, RP.

Waycross-Ware County Area Technical School and Lake City Community College began a continuous Forest Inventory System on the Refuge forest compartments. The objectives of this study are to determine and compare growth rate of various stand densities and age classes resulting from the long rotation period and other wildlife management techniques used on the refuge. Plots have been established in Compartments 1, 2, 3, 4 and 8.



-- and rate of growth.
NS-35-77, RP.

4. Tree Planting

12,000 longleaf pine and 34,000 improved slash pine seedlings were planted in Compartments 1 and 5 during 1977. 70 pounds of longleaf pine seed were broadcast over two acres in Compartment 1. Results were as follows:

<u>AREA</u>	<u>COMPARTMENT</u>	<u>ACRES</u>	<u>SPECIES</u>	<u>METHOD OF PLANTING</u>	<u>SURVIVAL</u>
1	1	9	Longleaf Pine	Seed-Hand Broadcast	Good
2	1	18	Longleaf Pine	Seed-Hand Broadcast	Poor
3	1	8	Slash Pine	Seedlings-Hand Planted	Poor - 25%
4	1	15	Slash Pine	Seedlings-Hand Planted	Poor - 25%
5a	1	12	Slash Pine	Seedlings-Hand Planted	Poor - 25%
5b	1	8	Slash Pine	Seedlings-Machine Planted	Good - 90%
6a	5	30	Longleaf Pine	Seedlings-Machine Planted	Good - 70%
6b	5	40	Slash Pine	Seedlings-Machine Planted	Good - 90%

Wet weather and equipment failures curtailed site preparation activities in areas 2, 3, 4 and 5 reducing longleaf germination in area 2 and making hand planting necessary in areas 3, 4 and part of 5. For reasons unknown, the hand planting was almost a total failure. Survival of longleaf and slash pine machine planted seedlings was excellent. Areas 2, 3, 4, and 5a will be replanted during 1978.



Longleaf seedlings take a while to become full blown trees but the longleaf pine is the red-cockaded woodpecker tree on Okefenokee. NS-36-77, RP.

In addition to the areas being replanted, an additional 31 acres have been prepared for slash and longleaf pine in Compartment 5. Two hardwood plots will be planted in Compartments 5 and 8.

5. Unmanaged Forestlands

Okefenokee National Wildlife Refuge contains several thousand acres of upland islands located within the swamp. These islands, along with most of the swamp, are designated as wilderness areas and receive no management except as authorized by Policy Update No. 12 - Wilderness Management Guidelines and Planning. Fire has played a natural part in the history of most of these islands. The open park-like longleaf pine stands of Billy's Island contain 52 red-cockaded woodpecker cavity trees. Prescribed fire is used on this island to maintain these open stands to provide suitable habitat for this endangered species. The only other island known to host the red-cockaded woodpecker, Blackjack Island, received no management.

These wilderness islands, along with the thousands of acres of wooded swampland, also provide large areas of unbroken forest beneficial to some wildlife species less adaptable to the more diversified habitat types found in the managed forestlands.

The forest management compartments contain many cypress ponds which are not managed at this time. In the future, some timber stand improvement work may be necessary to maintain quality wildlife habitat. One thing is certain -- the ponds will not be drained.



Forest prescription preparation in the forestry staff's office is a continuing process. NS-37-77, RP.

6. Benefits of Forest-Wildlife Management on Okefenokee Refuge

Wildlife benefits of the forest management program become more apparent as forest prescriptions are completed. Game and non-game wildlife species seem to be abundant on those lands that contain well diversified habitat types. During forest management activities, wildlife observations and signs are noted.

Periodic observations in compartments which have received timber stand improvement work, thinning and prescribed burning show increasing abundance of grasses, legumes, huckleberry and ground oak. Increased browsing activity has been observed on the new understory shrub growth which follows prescribed burning.

One benefit of this year's prescribed burning program was noted during the annual red-cockaded woodpecker census. A recently abandoned colony in Compartment 2 became active again after prescribed fire removed some of a badly encroaching understory.

A more scientific assessment of the benefits of the forest-wildlife management program could be given if we had the funds and manpower to more adequately document changes in wildlife habitat and species diversity due to management.

E. Okefenokee Environments

The Okefenokee Swamp is one of the most, if not the most, diverse fresh water swamps in North America. Its habitat diversity provides for a varied and abundant wildlife community. The following pictures are included to provide those who have not had the chance to visit the Okefenokee National Wildlife Refuge a better idea of its ever changing environments. Colloquial names also are indicated when appropriate.

The following pictures depict the major habitats of the Okefenokee Swamp:



Cypress Forest
NS-38-77, WDM.



Black Gum Forest
NS-39-77, WDM.

Cypress and black gum forests along with thousands of scrubland acres comprise about 80 percent of the Okefenokee Swamp. This swamp forestland provides ideal habitat for a number of mammals, reptiles, amphibians, and avian species.



Scrubland. NS-40-77, WDM.

Scrubland is a successional stage in the swamp that occurs when the open marshland fills in with peat sufficiently to support a growth of shrubs instead of the more aquatic plant species.



Marshland (Locally Prairies)
NS-41-77, WDM.

The open marshland habitat ("prairie"), with associated tree islands, comprise about 20 percent of the Okefenokee Swamp. The water in the marshland ranges in depth from about 24 inches to surface level depending on seasonal rainfall.

The habitat is most important in the production of a faunal community supporting large populations of wading birds and alligators.

The marshland habitat is a disclimax community maintained by fire. Fire is as much a part of the natural ecology of Okefenokee as is water. Fire invades the swamp during extreme droughts, and consumes some of the accumulated peat that would otherwise build up to a point suitable for an invasion of shrubs and trees.



Battery (Peat Blowup)
NS-42-77, WDM.

The marshland habitat, like a farm pond, is continually being filled in with vegetation. A major difference in its succession, however, is that a marshland swamp can be rejuvenated and perpetuated by the natural occurrence of fire. Without fire, the marshland in Okefenokee probably would become forested within 100-200 years.

Another filling in process unique to marshland swamps involves the formation of "batteries". Batteries (floating mats of peat) occur when submerged peat breaks away from the underlying peat bed and floats to the surface. Battery formation is a continual successional process; and over a period of years, without interruption by fire, can result in a transition of marshland habitat into scrubland habitat.



Tree Island (Locally House)
NS-43-77, WDM.

Tree islands are a vegetative growth stage of the "battery". They are a distinctive feature of the Okefenokee marshland habitat. The size of the shrubs and trees growing on the tree islands relate to the age of the tree island.



Prairie Lake
NS-44-77, WDM.

Prairie lakes are sub-habitats within the marshlands of Okefenokee. They vary in size from a few acres to about 20 acres with a water depth of about four feet. These lakes were formed by fire burning out pockets in the peat bed. They provide important habitat for a variety of fishes and a refuge for alligators during drought conditions.



Forest Lake. NS-45-77, WDM.

The forest lakes are located along the primary drainage of the swamp into the Suwannee River. These lakes (Billy's, Minnies, Big Water and Cravens Lakes) are over 50 acres in size with a water depth of about 12 feet. The lakes are lined by cypress forests and support an abundance of fishes, alligators, birds, and other swamp creatures.



Swamp Island. NS-46-77, WDM.

Several upland islands, the largest of which is Cowhouse Island at 6,600 acres, occur in the Okefenokee Swamp. These islands are believed to be the remains of old barrier sandbars that were formed when the ocean covered this area of Georgia. The vegetation on these islands is much the same as found outside the swamp. Southern pine flatwoods are dominant with a scattering of hardwood hammocks on the drier more fertile sites.



Hardwood Hammock.
NS-47-77, WDM.



Hardwood Hammock. NS-48-77, WDM.

Man-made habitats also exist in Okefenokee.



Suwannee Canal dug in 1891. NS-49-77, WDM.

The Suwannee Canal extends into the swamp for about eleven miles. It was dug in the 1890's in an unsuccessful attempt to drain the swamp. Today the Canal provides the access route from the Suwannee Canal Recreation Area to the major marshland prairies on the east side of the swamp.



Prairie Boat Trail
NS-50-77, WDM.

Boat trails provide a means of motorboat and canoe access through Okefenokee. There are about 120 miles of boat trails in the refuge.



Suwannee River Sill
NS-51-77, WDM.

The Suwannee River Sill is a five mile long earthen dam that was constructed in 1961 where the Suwannee River leaves the Okefenokee Swamp. The reasons for the construction of the Sill were to maintain water levels and reduce the occurrence of fire in the Okefenokee Swamp.

F. Wilderness and Special Areas

All of the drainage streams into the Okefenokee Swamp, with the exception of the lower portion of Suwannee Creek, have been channelized by the timber companies in order to facilitate the drainage of surface water from their managed pinelands. These drainage projects include approximately 70 miles of channelization of Alligator, Cane, Bear Branch, Surveyors, Gum Slough, Barnums, Turkey, Suwannee, and Big Branch Creeks.



Channelization of Creeks flowing into Okefenokee. NS-52-77, WDM.

Considerable effort was spent in an unsuccessful attempt to stop this channelization work. Several meetings were held with the Corps of Engineers, U.S. Fish and Wildlife Service and the timber industry. The Corps of Engineers, who we felt had the authority to stop the channelization, chose to let the work continue while they conducted what they termed a fact-finding study of the problem. Their study was effective in delaying a decision until the drainage work was completed by the timber companies.

The channelization of streams is expected to increase the upland water flow into Okefenokee by several magnitudes. Although we are most sure this additional water will have an adverse effect on the swamp, we are hopeful it will not be significant enough to result in any major ecological changes. The University of Georgia has initiated a study project of the drainage work to analyze the water quality and quantity of the channelized streams.

The following areas are designated for protection as natural areas on the refuge:

1. Wilderness

353,981 acres of the Okefenokee Refuge were designated for preservation in 1974 under the Wilderness Act.

2. Threatened Community Research Natural Areas

Pond Cypress Research Natural Area -- 14,989 acres.
Sweet Bay Research Natural Areas -- 2,560 acres.

3. Research Natural Areas

Floyd's Island (swamp island) -- 160 acres.
Pine Island (swamp island) -- 90 acres.
Territory Prairie (marsh & bog) -- 1,450 acres.
Blackjack Island (sphagnum bog) -- 15,027 acres.
Cowhouse Island (hardwood hammock) -- 10 acres.

4. Public Use Natural Areas

Chesser Island (swamp forest) -- 100 acres.
Chesser Island (hardwood hammock) -- 11 acres.
Floyd's Island (swamp island) -- 575 acres.
Chesser Prairie Rookery (wading bird colony) -- 3 acres.
Chesser Prairie (marsh prairie) -- 800 acres.



Many "Cultural Resources" can be found
on Okefenokee. NS-53-77, WDM.

G. Easements for Waterfowl Management

Not applicable.

IV. WILDLIFEA. Endangered and/or Threatened Species1. American Alligator

The alligator population in Okefenokee is estimated at 6,000-10,000 animals. There has not been any notable increase in the alligator population on the refuge during the past five years. We have noted a small increase in the population inhabiting the 20,000 acres of swampland that was acquired from the King family in 1969. The area includes Durden, Carter's, and a portion of Sapling Prairie. These lands were heavily poached until the late 1960's, and the alligator population in this area of the swamp was nearly depleted when the lands were acquired.



Mr. Okefenokee
NS-54-77, Staff.

An intensive study of the nesting success of alligators in Okefenokee indicates that the black bear is exerting an effective control on the alligator population through nest predation. It is suspected this predation of nests evokes a density dependent relationship, and that nest predation is not

resulting in any major reduction of the alligator population below the carrying capacity of the habitats.

During the summer drought of 1977, the alligators were concentrated in the deeper lakes and canals. A night survey was taken in some of the deeper lakes and the Suwannee Canal on August 4, 1977. During this survey, the water levels in the swamp were extremely low (120.50' MSL) with surface water limited to lakes, boat trails, and canals. The results of this survey are shown below:

Gannet Lake	97 alligators
Buzzard Roost Lake	121 alligators
Monkey Lake	26 alligators
Suwannee Canal	227 alligators
Sill Borrow Ditch.....	194 alligators
Narrows.....	43 alligators
Billy's Lake	<u>288 alligators</u>
TOTAL	996 alligators

2. Eastern Cougar

There were no reported sightings of the eastern cougar in the vicinity of the refuge this year. The last reported observation was the finding of a scat specimen on Craven's Hammock on November 12, 1976 which was identified by Robert Beldin, Leader of the Florida Panther Recovery Team, as being panther scat.

3. Bald Eagle

The bald eagle is a transient species in our area. An adult bald eagle was observed along the western fringes of the refuge on October 4, 1977.

4. American Peregrine Falcon

Although there were not any reported observations of the peregrine falcon this year, a few transient birds probably passed through the area. The peregrine is a more common migrant along Georgia's Sea Island Coast than through the inland area.

5. Florida Sandhill Crane

The resident population of Florida Sandhill Cranes seems to have been relatively stable at around 225 birds since refuge establishment, and we assume that they are at their carrying capacity limits. The summer drought favored the production of the tuberous aquatic plants, i.e., paintroot, which the cranes relish.



Florida Sandhill Crane nest and eggs.
NS-55-77, Staff.



Baby Florida Sandhill Cranes
NS-56-77, Staff.

6. Red-Cockaded Woodpecker

The red-cockaded woodpecker inhabits the upland managed forestland which surrounds the swamp and also is found on several of the upland islands within Okefenokee.

The annual survey of red-cockaded woodpecker cavities was taken during May. Of the 119 known cavity trees available for use, 95 were active. As a whole, there was not any significant change in the status of the red-cockaded woodpecker on the refuge this year. A colony appears to have become inactive in Forest Compartment 3, but this was offset insofar as the numbers game is concerned, by the gain of a colony on Billy's Island.



Marking procedure for red-cockaded woodpecker trees. NS-57-77, Staff.



Red-cockaded woodpecker home
NS-58-77, Staff.

A total of 24 new active cavity trees were located, measured and marked during 1977. Although several of these cavities appeared less than one year old, their existence does not necessarily indicate an increase in the overall population since most of the new cavities were located in existing colonies or were old colonies which had not been located previously. Of the 24 cavity trees located, one was in Forest Compartment 2, three in Forest Compartment 3, one in Forest Compartment 5, two in Forest Compartment 7, two in Forest Compartments 10 and 15 on Billy's Island.



Red-cockaded woodpecker
NS-59-77, Staff.

A Red-Cockaded Woodpecker Management Plan was completed for the refuge during the year. The management guidelines set forth in the plan were those procedures recommended by the Red-Cockaded Woodpecker Recovery Team. Foresters Robin Vinovich and Ron Phernetton and Biologist Wendell Metzen visited the Francis Marion National Forest, South Carolina, during November to review the red-cockaded woodpecker and forest management program for that area.

7. Threatened Plants

Five plants within the Okefenokee Refuge have been included in Georgia's endangered and threatened species list. These are climbing heath (Pieris phillyreaefolia), Georgia bark (Pinckneya pubens), and hooded, parrot, and trumpet pitcher-plant (Sarracenia minor, psittacina, and flava). All of these species, except for Georgia bark and the trumpet pitcher-plant, are relatively common on the refuge.

B. Migratory Birds

1. Waterfowl

The Okefenokee Swamp does not support a large population of waterfowl. During the 1970's, peak wintering concentrations have usually numbered below 10,000 birds with wood ducks comprising about one-third of the total use. The wood duck and mallard are

the most abundant wintering ducks on the refuge. Ring-necks comprise a major portion of the use for short periods during the spring and fall migration.

Although waterfowl use of Okefenokee is relatively low in comparison to managed waterfowl areas, the use is of major importance and adds to the overall species diversity and abundance of the swamp. A total of 1,420,662 waterfowl use days was recorded for 1977 in comparison to 1,589,516 use days in 1976. Wood ducks accounted for about 60 percent of the overall waterfowl use during 1977.

Two hundred twenty-one (221) wood ducks were banded during the summer period, and this is the largest number of ducks banded at the refuge since 1970. The banding site was located at Pig Pond along the eastern edge of the swamp near Chesser Island. Floating decoys and corn were used to attract the ducks to the banding site. Small traps affixed to floating platforms and walk-in traps were used to catch the wood ducks.



Neb banded a few woodies
NS-60-77, Staff.

2. Marsh and Water Birds

Wading bird use of the swamp was at times phenomenal due to the low water levels in the marshlands which provided ideal feeding conditions during most of the year. Wading bird use totaled nearly six million use days and is comparable with the use received during 1976. The wading bird use in Okefenokee during 1976 and 1977 was above normal due to the reduced water levels in the swamp during the spring and summer periods of both years.

The Mack's Island Rookery contained an extremely large nesting colony of white ibis estimated at 15,000 nesting pairs. The rookery covered an area of about 200 acres and use approximately the same size as during 1976. The fecal input into this area was quite evident from the extensive growth of duckweed which resulted from the increased nutrient input. Another rookery, composed mainly of nesting great egrets, was located in the swamp on the north side of Craven's Hammock. This rookery was estimated to contain 600 nesting pairs of birds. The Chesser Prairie Rookery was again inactive this year.

A small colony of wood storks produced a successful hatch at the Craven's Hammock Rookery. During an aerial survey on May 18, 18 adult storks and eight nests were observed at the rookery. Young storks were observed in the nests during an aerial survey in mid-June. This was the third recorded nesting of wood storks in Okefenokee. Their first recorded nesting attempt was in 1967.

3. Shorebirds, Gulls, Terns and Allied Species

A total of 129,000 use days was recorded under this category. Use was limited primarily to killdeer, woodcock, and snipe. Shorebird, gull, and tern use in Okefenokee is relatively low due to the lack of open water and mud flat areas required for feeding.

4. Raptors

An osprey production survey was taken during May and showed 11 of the known nesting sites to be active with a total production of 20 young. This compares with 1976's production of 22 young from 12 active nests.



Osprey on Okefenokee are doing nicely,
thank you! NS-61-77, Staff.

The population of hawks and owls in Okefenokee is considered stable. The red-shouldered hawk is Okefenokee's most common hawk, and its population is estimated at 450 birds. The kestrel hawk is a common winter resident. Red-tailed and marsh hawks occasionally are observed in the swamp.

Barred owls are quite common, and their population is estimated at 400 birds. The black and turkey vultures are year-around residents. Their combined population is estimated at 800 birds.

Swallow-tailed kites were observed frequently during the spring and summer on the western side of the refuge in the vicinity of Minnies Lake and the pocket area.

5. Other Migratory Birds

With the assistance of 18 participants, the 1977 Christmas Bird Count was taken on December 30 with a total recording of 84 species.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

The white-tailed deer population for 1977 was estimated at 1,000 animals which coincides with previous estimates. Of the total refuge acreage, about 28,000 acres are of an upland type suitable for deer. This acreage is located in forest management compartments around the swamp perimeter and on the interior upland islands within the Okefenokee Swamp. Deer are especially abundant in the pocket area on the west side of the refuge and near the Suwannee Canal Recreation Area. A low population occurs in the timber compartments on the northwest side of the swamp where poaching takes its toll. Bobcats are quite abundant, and their population is estimated at 700 animals. Populations of most other game mammals such as otters, rabbits, raccoons, and opossum were comparable to the estimate in 1976. More than the usual number of otters were observed during the winter, but this probably was due to colder weather in 1976 and 1977 rather than to an increase in population numbers.



Don't watch me while I eat.
NS-62-77, Staff.

2. Other Mammals

A few signs of beaver activity were noted during the winter period. The beaver population in Okefenokee is quite low, and signs of their presence are obvious only during the winter period when the alligators are not active.



Round-tailed water rat house -- we're still trying to get a picture of the animal. NS-63-77, Staff.

Pesky armadillos are common on the refuge. They are quite numerous as is indicated by their many digging and scratching signs especially around the landscaped recreational facilities.



Southern Fox Squirrel -- A beautiful animal about which we know much too little. NS-64-77, Staff.

The black bear population in Okefenokee appears to have recovered somewhat from the low numbers reported during the mid-60's. This may be due to fewer illegal kills occurring around the swamp as a result of better enforcement protection and a general change in public attitude towards protecting the black bear. The illegal kill of bears on the west side of the swamp continues to be a problem, but the taking of these animals is believed to be greatly reduced in comparison to the numbers killed annually during the 1960's. Many bee keepers still would like to see the last bear blasted to oblivion.



A bear simply bit the hell out of this post, and they do that quite often. NS-65-77, Staff.

The black bear population for 1977 was estimated at 175 animals which is a small increase over last year's estimate of 150. It is felt that the population may be approaching the carrying capacity for the swamp. Several black bear sightings were reported, especially in the vicinity of the Suwannee Canal Recreation Area and pocket, during the winter period.

3. Resident Birds

The drought condition during the spring and early summer period of 1977 seemed to favor the production of bobwhite. The refuge bobwhite population is estimated at 2,500 birds based on an average of one quail per ten acres. The bobwhite inhabits the upland forestlands in the forest compartments surrounding the swamp and on the sandy islands within the swamp.

Turkey were observed frequently during the year with several sightings occurring along the Swamp Island Drive and along the Perimeter Road between Camp Cornelia and Kingfisher Landing. The turkey population in the vicinity of the refuge seems to be slowly increasing. At the end of the year, the turkey population

was estimated at 60 birds which is an increase of 20 birds when compared to 1976. As with the bobwhite, the spring drought provided favorable nesting conditions for the turkey this year.



Ben Franklin's National Bird
NS-66-77, Staff.

4. Other Animal Life

See American alligator under "Endangered Species". A refuge reptile, amphibian, mammal and fish list is enclosed in the back of this report. Populations of "other animals" remained stable during 1977 except for the fish population which was reduced during the extreme drought of the spring and summer months. Heavy, successful fishing in concentrated areas really worked on the total fish population.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. General

Interpretation and Recreation Use at the Suwannee Canal Recreation Area - Folkston, Georgia

<u>Activity</u>	<u>CY 1977</u>	<u>CY 1976</u>	<u>% Change</u>
Boat Tours	15,380	14,252	+ 8%
Information Center	33,494	27,484	+ 22%
Fishing	9,435	7,319	+ 29%
Wildlife Drive	26,863	48,096	*
Swamp Boardwalk	17,453	34,438	*
Wildlife Observa- tion by Boat	8,379	8,877	- 6%
Total Visitors	102,998	95,206	+ 8%

* The Swamp Boardwalk and Swamp Island Drive were closed for six months during CY 1977 due to paving of the wildlife drive, and the percent change would be meaningless.



Visitor Center - Suwannee Canal
Recreation Area. NS-67-77, Staff.

The 8% increase in total visitation to this Service administered facility is an accurate reflection of an increase in public use at the Suwannee Canal Recreation Area. With increases in boat tours, fishing, canoeists and total visitors, the visitation at the Suwannee Canal Recreation Area topped 100,000 for Calendar Year 1977.

Visitor use increased despite extremely low water levels in the swamp. The Swamp Island Drive, which provides the only access to the Swamp Boardwalk, Owl's Roost Tower and several walking trails, was closed for six months during the year for repaving. This suggests that visitors are making increased use of other recreational facilities available to the public at the Suwannee Canal Recreation Area. Visitation is generally expected to increase at a similar rate as that experienced during 1977.

The Suwannee Canal Recreation Area Concession continued its upward climb insofar as gross income was concerned. Inflation really chewed up the profit, however.

SUWANNEE CANAL RECREATION AREA CONCESSION
GROSS INCOME

<u>Year</u>	<u>Total Amount</u>
1970	\$ 48,295
1971	74,380
1972	80,683
1973	77,368
1974	93,001
1975	96,595
1976	126,102
1977	141,639

Interpretation and Recreation Use at the Stephen C. Foster
State Park - Fargo, Georgia

<u>Activity</u>	<u>CY 1977</u>	<u>CY 1976</u>	<u>% Change</u>
Boat Tours	3,953	4,031	- 2%
Wildlife Observation by Boat	11,614	13,232	- 14%
Fishing	8,820	15,129	- 43%
Campers	20,484	21,088	- 3%
Cabin Use	6,892	8,302	- 17%
Museum	128,409	106,050	+ 21%
Total Visits	163,356	152,501	+ 7%

The State of Georgia operates this entrance on 135 acres of refuge land under a long-term permit agreement. We continue to experience problems in getting the State to maintain and operate facilities to U.S. Fish and Wildlife Standards, which probably continues to explain the decrease in certain activities while the Suwannee Canal Recreation Area entrance experienced increases in public use activities. Drought conditions in the refuge accounted for a portion of the decrease in the use of Stephen C. Foster State Park.

Interpretation and Recreation Use at the Okefenokee Swamp Park
Waycross, Georgia

<u>Activity</u>	<u>Number of Participants</u>		
	<u>CY 1977</u>	<u>CY 1976</u>	<u>% Change</u>
Extended boat tours (2 hrs.)	3,939	6,957	- 43%
Environmental Edu- cation Students	3,381	3,738	- 10%
Environmental Edu- cation Teachers	309	418	- 35%
Total Visits	96,784	104,163	- 7%

Total visitation to this privately operated, non-profit entrance into Okefenokee Refuge showed a moderate overall decrease which seems to have been the result of extreme drought conditions in the swamp during much of 1977.

Interpretation and Recreation Use at Kingfisher Landing

Despite dry conditions in the swamp, fishing from this primitive, unmaned entrance into Okefenokee increased by 24% over the previous year. Wilderness canoeists remained about the same. A total of 1,009 fishermen and 1,422 canoeists utilized the entrance.

Interpretation and Recreation Use of the Suwannee River Sill Access

The Sill area was closed to all traffic for the last 5½ months of 1977. Concrete erosion caused by the acidic (4.5 PH) waters of the swamp resulted in the collapse of the Number 1 Spillway. A temporary earthen dam was constructed to retain the water in the swamp until a new structure can be constructed. During that part of the year when the Sill area was open to the public, 4,621 fishermen tried their luck at this entrance.

Interpretation and Recreation Use of Wilderness Canoe Trails



Family of Canoeists
NS-68-77, Staff.

<u>Starting Point</u>	<u>* No. Canoeists</u>	
	<u>CY 1977</u>	<u>CY 1976</u>
Kingfisher Landing	1,422	1,458
Suwannee Canal Recreation Area	1,321	1,530
Stephen C. Foster State Park	456	750
TOTAL NUMBER OF CANOEISTS	3,199	3,738

* The figures in these columns represent the number of individual canoeists who took a wilderness canoe trip into the refuge. Each canoeist spent from two days to six days in the swamp. Use of the refuge wilderness canoe trails continues to increase even though overall participation was down in 1977 due to most of the canoe trails being closed for nine months because of low water.

<u>YEAR</u>	<u>TOTAL NUMBER OF CANOEISTS</u>
CY 1972	921
CY 1973	1,483
CY 1974	2,541
CY 1975	3,528
CY 1976	3,738
CY 1977	3,199

The reason for the leveling off trend is that we have just about reached the saturation point at least during the popular spring and fall months. There is simply a limited number of people who can go on these trips since we only allow one group at a time on each segment of a trail. As is the case for all public use facilities and programs on the refuge, quality not quantity is stressed. Each canoeist is given the opportunity for a true wilderness experience. Visitors from 37 states and 3 foreign countries canoed through Okefenokee during 1977. A total of 607 permits were issued.



Ain't It Purty?!
NS-69-77, Staff.

Severe drought in the Okefenokee caused many canoe trails to be closed for approximately nine months during the year. In fact, water levels toward the end of September were so low that brush and grass had begun to grow in the trails. After sufficient rainfall, canoe trails were reopened and intensive canoe trail maintenance was required to remove all of the vegetative growth. Many canoe trail markers had to be replaced so canoeists could follow the trails.



Canoeists found little water during the Summer of 1977.
NS-70-77, JRE.

2. On Refuge

A total of 534,662 activity hours of Interpretation and 15,245 activity hours of Environmental Education was recorded for the refuge during CY 1977. These activity hours were produced by programs and facilities such as the interpretive center, guided boat tours, wilderness canoe trails, swamp boardwalks, walking trails, a wildlife drive, exhibits, group programs and the most recent facility--a swamp family's restored and re-created homestead.



Restored Chesser Island Homestead
NS-71-77, Staff.

As a museum of life in an earlier era, the Chesser Island Homestead is one of few historical sites to be restored and managed by the U. S. Fish and Wildlife Service. It is intended to recreate for the public the self-sufficient lifestyle of early swamp dwellers, who for many years utilized the swamp's abundant wildlife resources by hunting, fishing and trapping to help provide life's necessities.

Over 700 visitors participated in the opening ceremony which included U. S. Congressman Ronald G. Ginn, other State and local dignitaries, as well as representatives from the Area and Regional Offices of the U. S. Fish and Wildlife Service.



Grand Opening -- Chesser Island
Homestead. NS-72-77, Staff.

Throughout the day of the grand opening, visitors were able to observe and participate in authentic homestead activities and crafts demonstrations which were taking place in the main house and surrounding outbuildings. Activities included hand-quilting, broom and lye soap making, "riving" cypress pickets for a fence, sausage smoking, and cooking some "down-home vittles" on a wood-burning stove.



Visitors saw authentic quilting --
NS-73-77, Staff.



-- A Smoking Smokehouse.
NS-74-77, Staff.



-- A sugar cane grinding mill.
NS-75-77, Staff.

-- Some Homestead
Cooked Goodies.
NS-76-77, Staff.





-- An Old Log Well.
NS-77-77, Staff.



-- A Re-created Corn Crib.
NS-78-77, Staff.

Exhibit along the
Chesser Island Homestead
Walking Trail
NS-79-77, Staff.



Introductory Exhibit to Chesser Island
Homestead. NS-80-77, Staff.

The Okefenokee Swamp Park near Waycross continues to have success with their serpentarium and auditorium facility. These facilities are located on refuge lands, hence public use of it is reported by the refuge. We are once again reporting visitation to this entrance as part of the total visitation to the refuge since all visitors actually enter refuge property.

Several visitors to be noted in this report include:

Washington Refuge Chief Mark Nelson was given a tour of the refuge during a short visit in October:

ABC News Crews filmed a national television news program concerning the drought.

Trainees from the Federal Law Enforcement Training School in Brunswick, Georgia, flocked to the refuge on several weekends.

3. Off Refuge

As usual the Okefenokee was the subject of a good bit of prominent publicity:

- A total of 104 newspaper and magazine articles were published containing information about the refuge.
- Public Use Specialist Dan O'Neal represented the refuge on a Jacksonville television talk show.
- A Jacksonville television station came to the refuge to film five short public announcements concerning the Okefenokee Festival.



We get publicity by the boatload
NS-81-77, Staff.

In furthering the need for off-refuge interpretation, a cooperative venture with the Georgia Department of Transportation and Cumberland Island National Seashore was undertaken in CY 1976 to assist tourists travelling on Interstate Highway 95 in locating Cumberland Island and Okefenokee Refuge. The exhibit has since been erected, and comments have been favorable. However, vandalism has been a problem, and periodic repairs have been necessary.



Cooperative Venture
NS-82-77, Staff.

Public Use Specialist Dan O'Neal attended the Regional Meeting of the Association of Interpretive Naturalists in Kingsport, Tennessee.

Manager Eadie assisted with the organization of the Okefenokee-Waycross Chapter of Ducks Unlimited.

Biologist Metzen and Foresters Phernetton and Vinovich visited Francis Marion National Forest and reviewed the red-cockaded woodpecker program of the area.

Biologist Metzen attended a drainage meeting in Charleston, S. C. and Brunswick, Georgia, with Ecological Services and Biological Services personnel.

Public Use Specialist Dan O'Neal and Wildlife Interpretive Specialist Cindy Rivera participated in a workshop (Chincoteague National Wildlife Refuge) relating to the development of quality standards for Interpretation and Recreation on National Wildlife Refuges and Fish Hatcheries.

Clerk-Typist Cecile Davis completed a 24-hour Better Office Skills Course in Atlanta. She also completed a two day seminar for Administrative Assistants in Jacksonville, Florida.

Assistant Refuge Manager Ron Bisbee completed a 40-hour Supervisory Training Course in Atlanta.

Refuge Manager Eadie attended the North American Wildlife and Resources Conference in Atlanta, and Biologist Metzen attended the International Congress of Game Biologists which was also held in Atlanta.

Approximately 60 foreign biologists were given a refuge tour originating at the Suwannee Canal Recreation Area.

ABC News and Conservation Reporter Roger Caras interviewed refuge personnel and local citizens concerning swamp drought conditions.

Paul McCrary, Superintendent of Cumberland Island National Seashore, visited the refuge in order to review the National Historic Landmark status of Okefenokee.

Assistant Manager Taylor and Biologist Metzen completed a report writing training workshop sponsored by General Services Administration.

Manager Eadie presented a refuge program to a joint meeting of the Charlton County Development Authority and the Folkston-Charlton County Chamber of Commerce. He also was the speaker at the annual Folkston-Charlton County Chamber of Commerce banquet. At that banquet, Manager Eadie and Assistant Manager Bisbee were presented with honorary Chamber of Commerce memberships. Manager Eadie also assisted with the Ware County Forest Festival and served for a short while on the Waycross-Ware County Chamber of Commerce's Committee on Tourism.

Assistant Manager Taylor served as instructor for the Natural Resources Conservation Workshop at ABAC College in Tifton, Georgia. He and Technician Bolt attended a Y.C.C. Workshop in Pensacola, Florida. Mr. Taylor also was detailed to the Regional Office to assist with Program Scheduling.

Biologist Metzen was detailed at the end of the year to a special Land Acquisition Review program covering the State of Georgia. He also attended the Southeastern Association of Game and Fish Commissioners in San Antonio, Texas and made available a paper relating to several years of alligator research on Okefenokee.

Dr. Bernard Patten and his group of University of Georgia researchers presented a research seminar at the Suwannee Canal Recreation Area in November.

B. Recreation

1. Wildlife Oriented

Fishing and wildlife observation were popular activities on the refuge involving a total of 261,770 activity hours during CY 1977. This is 13% below last year's figures, primarily due to a sharp decline in these activities at Stephen C. Foster State Park.

As expected, low waters again enhanced the fishing, and the number of fishermen at Suwannee Canal Recreation Area increased 23%. This was more than offset, however, by the 43% decrease at Stephen C. Foster State Park.



Bank fishing at the Suwannee Canal Recreation Area. NS-83-77, Staff.

Extremely low water levels for nine months of the year necessitated the closing of many trails and put somewhat of a damper on all boating activities. The number of visitors who went into the swamp by boat or canoe to view wildlife decreased 6% at Suwannee Canal Recreation Area, and 14% at Stephen C. Foster State Park. An additional factor contributing to the decline at the State Park may have been that many of their motors and boats were being repaired and out of service for a good part of the year.



Did you see what I saw?
NS-84-77, Staff.

2. Non-Wildlife Oriented

A total of 283,388 activity hours of non-wildlife oriented recreation occurred on the refuge during CY 1977. This consisted primarily of picnicking and camping. While these activities do not require the presence of wildlife, their popularity at this station tends to indicate that they are enhanced by other wildlife values on the refuge.

Picnicking occurs at Suwannee Canal Recreation Area and at Stephen C. Foster State Park. Camping is available at the State Park, at two primitive campgrounds for youth groups, and in conjunction with the wilderness canoe trail system. All of these activities have shown a moderate decrease (12%) over last year. Again this was probably due to the necessary closure of many of the canoe trails.

C. Enforcement

It was business as usual during 1977 insofar as refuge law enforcement activities were concerned. We remain concerned that those refuge employees who are assigned law enforcement responsibility as one of their chief duties still are not given proper recognition such as premium pay, higher grade levels, etc. These disparities between refuge law enforcement and other Fish and Wildlife law enforcement personnel continue to be with us.

A Fish and Wildlife Researcher created problems by attempting to trap and tag black bears near (but outside) the south end of the refuge. The researcher evidently was utilizing some outlaws in attempting to trap bears and also had failed to get trapping permission from the State of Georgia.

Lock busters and gate destroyers are still with us, but we're as diligent as they are. Two canoeists camping at Stephen C. Foster State Park stole another camper's vehicle and eventually were apprehended in St. Augustine, Florida.

Hordes of trainees from the Federal Law Enforcement Training Center in Brunswick, Georgia, descended on the refuge during several weekends.



Law Enforcement Instructors from the Federal Law Enforcement Training School in Brunswick, Georgia, were shown around Okefenokee by one of the school's first graduates -- Okefenokee Biological Technician Richard Bolt. NS-85-77, Staff.



Then came a pile of FLETC Trainees. NS-86-77, Staff.

A total of fifty-four (54) cases was made on the refuge during Calendar Year 1977. Thirty-four of these had been disposed of by the end of the year. Thirty-two of these resulted in fines which ranged from \$25. to \$125 and averaged about \$60. Two violators were juveniles. Twenty of the 1977 cases remain outstanding. Most violations involved possession of firearms, but there were several trespassing violations and two hunting on the refuge violations. Forty-nine of the 54 cases that were made originated at the Stephen C. Foster State Park entrance into the refuge. U. S. Magistrate Elizabeth Highsmith continues to show little sympathy for those who violate refuge regulations.

VI. OTHER ITEMS

A. Field Investigations

Research at Okefenokee is a major program. During 1977, the refuge hosted a total of ten projects being conducted by six different universities.

The following is a listing by University of the research projects being conducted on the refuge:

UNIVERSITY OF GEORGIA

The goal of this research program is to understand the ecological structure and function of the Okefenokee watershed ecosystem and those factors essential to its maintenance. The program is comprehensive with basic research providing details about floristic and faunistic components and models serving to organize these data in a whole system context. Ultimately, working computer models useful for investigating the probable answers to basic and applied environmental questions will be produced. Fundamental ecological data must be gathered to provide a solid basis for management decisions relating to issues such as fire, drought, the Suwannee River Sill, upland stream channelization, visitor use developments, waterways, habitat and species protection, and pollution effects.



Not a Martian Invasion -- simply
the tools of refuge researchers.
NS-87-77, Staff.

Research began in earnest in 1974 with a small grant from the Office of Water Research and Technology (OWRT) of \$17,800. This project involved only a single researcher. At the beginning of this grant, a house trailer was installed at Camp Cornelia and is the only on-site research facility to date. Perhaps the major accomplishments of this study (Rykiel, 1977) were determining gaps in ecological knowledge about the swamp and establishing the feasibility of the whole ecosystem approach as applied to Okefenokee. The potential importance of uplands in maintaining the swamp and the possible effects of the Suwannee River Sill were issues raised by this study.

Under the scientific leadership of Dr. Bernard C. Patten and as a result of the OWRT investigation, a more detailed proposal was prepared and submitted to the National Science Foundation. The research was conceived as a program of continuing study over a period of ten years culminating in an Okefenokee ecosystem computer model. The first five years of the program emphasize basic field research with computer modeling predominating in the last five years. The first two-year increment was funded by NSF in May 1976 for \$380,000 and is currently in progress. Six full-time researchers and four staff members are involved in this effort.



Duck Weed grows prolifically under a wading bird rookery and researchers like to study the process. NS-88-77, Staff.

The research completed thus far has led to development of a second proposal to OWRT. The project deals with the impact of upland streams on the swamp. This matching grant has been funded for \$84,000 with \$42,000 of that amount awarded by OWRT. In addition, a three-year continuation proposal has been submitted to NSF with a proposed budget of \$1,866,000. Personnel involved in Okefenokee research will include nine University professors, six post-doctoral associates, sixteen graduate students, and five technicians. Due to lack of permanent research facilities, two additional mobile houses are proposed to accommodate this expanded staff. Researchers from Oak Ridge Associated Universities and the National Audubon Society also will participate.

UNIVERSITY OF SOUTH CAROLINA

"A Geological and Coal Petrologic Investigation of the Peat Deposits of the Okefenokee Swamp". Dr. Arthur Cohen has been studying the geophysical properties of the peat in Okefenokee since 1970. His studies have added significant knowledge about the origin and age of the modern peat deposits in the swamp, regularity of fire occurrence, and fire importance in shaping and controlling the swamp environments and the botanical and mineralogical composition of peat within Okefenokee.



Peat cores are taken by most researchers.
NS-89-77, WDM

GOVERNORS STATE UNIVERSITY, ILLINOIS

1. "Organic Geochemical Interaction in the Okefenokee Swamp". Dr. Dan Casagrande is the project leader for this research which is largely a biochemical study of the sulphur, metals, and chemical changes occurring within the peat as a result of bacterial oxidation.
2. "Ecological Factors Affecting Plant Distribution". Dr. Peter Gunther initiated this project during 1974 to determine interactions controlling the distribution of dominant plants in Okefenokee. The work is centered specifically on seed ecology involving: dispersal and distribution; physical conditions required for germination; dormancy requirements; allelochemical effects; and factors affecting the survival of seeds, seedlings, and permeating buds.

NEW YORK UNIVERSITY

1. "The Ecology and Natural History of the American Alligator". Gene Meyer initiated this study during 1976 to determine if alligators are ecologically separated by size class, to evaluate habitat conditions, and to evaluate alligator-human interactions.
2. "The Ethology of the American Alligator". Myrna Watanabe initiated this study during 1976 to study the natural behavior of the American alligator; specifically reproduction, maternal and social behavior.

ATLANTA ZOOLOGICAL PARK

"Nesting and Maternal Behavior of Alligators in Okefenokee". Mr. Howard Hunt, Curator of Herpetology at the Atlanta Zoological Park, initiated this study during 1975. The objectives of his study are to document facts about the maternal behavior of alligators in natural conditions.

PENNSYLVANIA STATE UNIVERSITY

1. "Origin and Development of Tree Houses in the Okefenokee Swamp". This project was initiated during 1975 by Fred Rich. The project objectives are to interpret the floral succession and geological events which have resulted in the formation of tree islands in the swamp. Mr. Rich should complete his studies during 1978 in fulfillment of his doctoral thesis requirements.
2. "The Alteration of Woody Plant Tissues in Modern Organic Sediments and a Comparison with Wood from More Ancient Sediments". This project was initiated during 1977 by Jesse Yeakel. The overall objectives of the study is to enhance the understanding of changes which take place in the anatomy of wood when deposited as an organic sediment and buried.

OKEFENOKEE NATIONAL WILDLIFE REFUGE

"Alligator Nesting Study". This study was initiated by Biologist Wendell Metzen in 1972 and completed in 1976. The results of the study were presented to the 31st Annual Conference of Southeastern Association of Game and Fish Commissioners during 1977. The major finding resulting from the study was the discovery of a 90 percent loss of the 110 alligator nests studied. Predation accounted for 96 percent of the total loss with black bears being the major nest predator. It is expected that this predation of nests is a density dependent relationship, and that it is not resulting in any major reduction of the alligator population below the carrying capacity of the habitat.

GEORGIA DEPARTMENT OF NATURAL RESOURCES (GAME AND FISH DIVISION) -
D. R. Holder and J. Germann.

"Continued Evaluation of the Effects of Bowfin, *Amia Calva*, Removal on the Suwannee River Fishery"(December, 1977)

ABSTRACT

The fish population and fishery of the Suwannee River, including a portion of the Okefenokee Swamp, were monitored from July 1973 to June 1976 to determine the effects of bowfin population levels on

sport fishery quality. A rotenone sample on Red Bluff slough had a standing crop estimate of 130.1 lb/acre. Game fish comprised 58.1% of the sample weight. Bowfin made up 17.6% of the sample weight. Four rotenone samples on Mud Lake slough had standing crop estimates ranging from 148.5 to 494.0 lb/acre. Game fish ranged from 8.0 to 41.9% of the estimates. Bowfin ranged from 40.8 to 80.4%. F/C ratios, A_t values, and A_t^H values were determined. Fall population estimates of bowfin ranged from 20,966 fish to 17,832 fish.

Estimated fishing pressure, catch, and catch rates in the Suwannee River varied annually. Bullheads were the most abundant species caught by number and weight, except 1974 in which bowfin was the dominant species by weight. Changes in game fish dominance from warmouth to spotted sunfish and channel catfish were indicated in the creel. Total annual harvest per acre ranged from 124.3 fish weighing 103.3 lb in 1974 to 360.6 fish weighing 192.8 lb in 1973. A decline in pressure, catch, and catch rate was indicated in the Okefenokee Swamp in 1975 from the previous two years. Bullheads and warmouth were the most abundant species in the creel by number and weight.

Confidence intervals and linear regressions were used in analyzing changes in the fish population and the fishery since bowfin removal. F/C ratios and A_t^H values declined in the fish populations in the Suwannee River from 1970 to 1975. Standing crop estimates, E values, population estimates, and CPUE values showed an increase in bowfin abundance from 1970 to 1975. A significant decline was indicated in standing crop and E values of largemouth bass and warmouth.

Analysis of the sport fishery in the Suwannee River from 1969 to 1975 showed yearly fluctuations that could not be related to bowfin abundance. The yearly fluctuations, however, were related to winter high water. A significant increase occurred in channel catfish. The Suwannee River overall is a high quality fishing stream. A decline in the catch and catch rate occurred in the Okefenokee Swamp from 1970 to 1975. Warmouth, flier, and largemouth bass were the main species to decline. Water flow regime was linked to the cause of the declining sport fishery in the Okefenokee Swamp. The Suwannee River fishery and the Okefenokee Swamp fishery seemed to be influenced to a greater degree by factors other than bowfin abundance.

B. Cooperative Programs

Okefenokee Refuge hosted two Youth Conservation Corps Camps during 1977. The Camp Cornelia Camp consisted of 30 enrollees and five staff members, and the Fargo Camp employed 30 enrollees and four staff members. With new staff members and new enrollees each summer, each camp opening is almost like starting all over again. Both camps started on June 6, 1977 and ended August 12, 1977. Many worthwhile projects were initiated and several were finished.

Enrollees assisted with waterfowl trapping and banding, timber stand improvement work, trail development and maintenance, sign maintenance, equipment and buildings maintenance. Forty-eight projects were planned for both camps, and all were worked on to some degree. \$81,600 was budgeted to operate the two camps.



Y.C.C. constructed boardwalk --
"The Songbird Trail"
NS-90-77, Staff.

Future readers of this document may be a bit perplexed by comments in other sections lamenting the lack of manpower on the refuge during 1977. Well there is manpower and there is manpower, and technically trained manpower is what we lacked in spite of numerous warm bodies made available through Y.C.C. and other programs.

Y.C.C. was only the beginning, however, as in October we were introduced to the Young Adult Conservation Corps. This program is to provide meaningful employment for young people between the ages of 16 and 23. At the close of 1977, Okefenokee had 22 Y.A.C.C. enrollees and two Y.A.C.C. staff members on board. Eventually, the number of enrollees for this year round program will swell to 50 with seven staff members. There's even talk of establishing a residential camp on Okefenokee. Work projects assigned have been similar to those assigned to Y.C.C. enrollees. It is hoped that the Y.A.C.C. program eventually will attract trained or at least semi-trained workers, but the minimum wage pay does little to stimulate interest.

Four individuals were employed for varying periods under the Comprehensive Education and Training Act (CETA). These were excellent employees.



CETA Employees maintain a walking trail.
NS-91-77, Staff.

The intern program involving students majoring in Outdoor Recreation, Biology, and similar fields continued during 1977. Eight students, two from Penn State University, one from Goddard College (Vermont), one from the University of Georgia and four from Clemson University, completed 10-16 week internships on the refuge. The interns work under a Cooperative work/study program in which the refuge provides housing, supervision and on-site work experience. The student receives varying hours of college credit.

Biological Technician Neb Bowen assisted Public Affairs Officer (Regional Office) Don Pfitzer in scare control of coots grazing on the fairways and greens of the Sawgrass Golf Course at Ponte Vedra Beach, Florida.

Poor management and administration at Stephen C. Foster State Park continued to plague that major entrance into the refuge. We continued our efforts to enforce improvements, but with very few positive results. We ended the year with the firm opinion that eviction is the only real solution.

Girl Scouts from Wichita, Kansas and Boy Scouts from Winter Park, Florida, took on maintenance projects that lasted from three to five days.

Revenue Refuge Sharing Act remittances based on $\frac{3}{4}$ of 1% of the adjusted land value were paid as follows: Charlton County, Georgia - \$56,371.39; Clinch County, Georgia - \$5,515.11; Ware County, Georgia - \$51,451.83; and Baker County, Florida - \$1,276.97. Due to a change in the Fiscal Year, these payments covered a 15-month period rather than 12-month period.

C. Items of Interest

After more than thirty years of truly dedicated service, William C. "Barney" Cone retired on April 29, 1977. Okefenokee was and is Barney's only home. Doug Nuss assumed Barney's duties having been appointed Biological Technician on January 16, 1977. Doug came to Okefenokee from the Georgia Game and Fish Commission.



After more than 30 years of outstanding service, Barney Cone turned in his badge on April 29, 1977. NS-96-77, Staff.

Assistant Manager John Taylor transferred to Columbia National Wildlife Refuge (Washington) as Refuge Manager on September 30, 1977. Public Use Specialist and short-time Assistant Manager Ron Bisbee prepared to transfer to Brazoria National Wildlife Refuge as Refuge Manager as the year ended.

Cindy Rivera came on board as Wildlife Interpretive Specialist on October 25. Dan O'Neal filled a Public Use Specialist vacancy on July 31. Public Use Specialist Denise Mills was appointed to the refuge staff on March 28 and transferred to the Corps of Engineers on November 5. Lurrie Pope, another short-time Public Use staffer, transferred to Fire Island National Seashore (NPS) on May 21. Forest Technician Robin Vinovich entered on duty on February 14.

A young couple was married on Billy's Island because they liked the swamp.

Bears were much in the news during 1977. Forest Technician Robin Vinovich has an affinity for attracting Mama bears with cubs. Biological Technician Doug Nuss looked up from his burning torch to see a rather large bear eyeing him from across the palmettos on Billy's Island. The Fargo Y.C.C. enrollees tramped into a cypress pond and surprised a sleeping bruin. A dead, partially eaten bear was found in the Sill borrow ditch, probably the loser in a 'gator-bear battle.

A refuge visitor turned his boat over, and his wife lost her pocket-book containing \$600 or \$700. The couple searched for the money for two days but to no avail. We now have our own lost treasure.

The status of the American alligator in Okefenokee was changed from endangered to threatened during 1977.

With increased public awareness of the need for energy conservation, it is important for Government agencies to set a good example. This refuge has acquired several 1-person vehicles designed to reduce the cost of operation and maintenance as well as fuel consumption. The Cushman Trucksters and Honda Motorbikes also help our public image by bringing members of the refuge staff closer and more available to visitors.



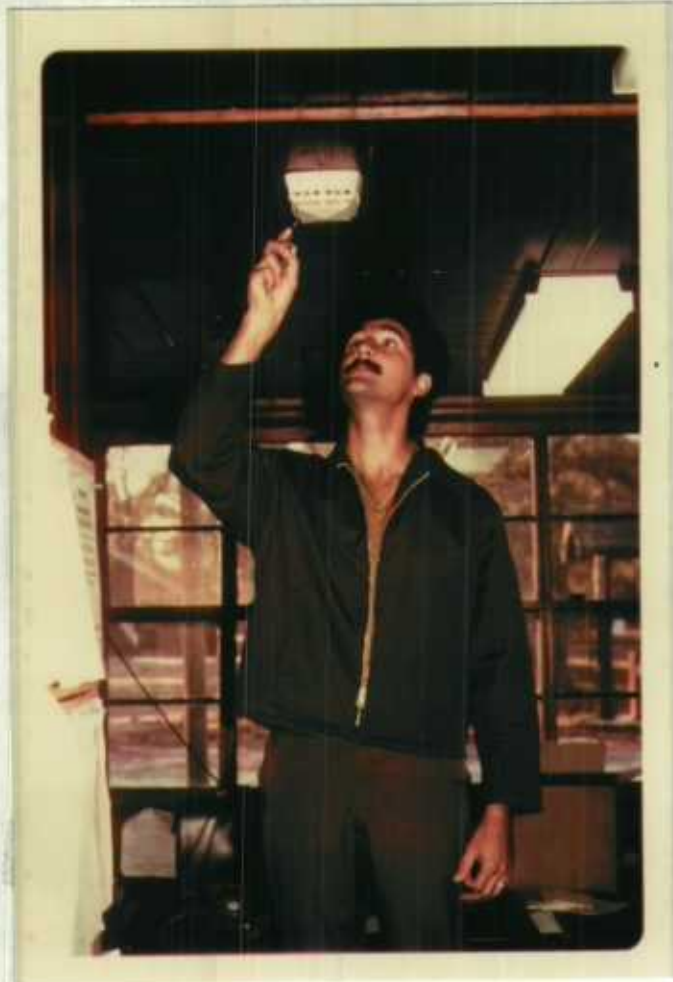
An effort to conserve energy.
NS-92-77, Staff.

Due to the staff vacancies, the manager had to be more involved in the writing of this report than he would have preferred to have been. However, excellent assistance was provided by Biologist Metzen, Forester Phernetton, Forest Technician Vinovich, Public Use Specialist Dan O'Neal and Wildlife Interpretive Specialist Cindy Rivera. Clerk-Typist Dartha Pittman typed the report and she and Clerk-Typist Cecile Davis did most of the assembly work and proofreading. Photographs were the result of the efforts of several employees.

D. Safety

With the desire for Okefenokee Refuge personnel to be continually safety conscious, the Refuge holds a monthly staff and safety meeting. The Refuge Safety Committee consists of four members. There is the constant need for refuge employees to be "safety prone" and to serve as good examples for safety. Exemplary safety attitudes are especially important due the increased number of people working on and using the refuge under different programs. Each

safety meeting consists of safety films and a review of minutes from previous meetings. New safety items are noted and recommended action is documented. There were many accomplishments achieved during CY 1977 involving safety.



Fire Alarm Inspection.
NS-93-77, RP.

The following is a summary of these:

Fourteen regular refuge personnel completed an 8-hour course in Multi-Media First Aid given by the Red Cross.

Fourteen regular refuge personnel also received 8 hours of instruction and training in a defensive driving course presented by the Greater Jacksonville Safety Council.



Applying non-skid material to tower steps. NS-94-77, Staff.

Fifteen refuge personnel were certified in the application of "Restricted Pesticides". The course was presented by the Georgia Department of Agriculture, Pesticide Division.

Twelve refuge personnel were certified in Cardiopulmonary Resuscitation and Emergency Care by the Georgia Heart Association. The course included 7 hours of instruction, actual training, and testing.

An extensive safety inspection was made and a report was issued by Regional Safety Officer Ken Cooper. All areas of concern were corrected and safety awareness on the refuge was improved.



Fire extinguisher inspection.
NS-95-77, Staff.

Okefenokee Refuge recorded 16 accidents during CY 1977. Eight accidents involved visitors with the remaining involving Y.C.C. and refuge personnel. There were no lost-time accidents involving permanent employees. The following is a summary of Calendar Year 1977 accidents:

1. March 4, 1977 -- Kevin Kelly, visitor, stepped on ax with bare feet on Floyd's Island.
2. March 23, 1977 -- Dale Leonhardt, visitor, had to have fish hook removed from eyelid. Accident occurred while his fishing companion was casting.
3. March 28, 1977 -- Colvin Smith, 700-hour carpenter, cut right knee on tailgate of truck.
4. April 19, 1977 -- Gertrude Gibbon, visitor, sprained left wrist as a result of tripping on the steps at the Suwannee Canal Recreation Area.

5. May 2, 1977 -- Citrus Knight, visitor, mashed two fingers between boat and tree while fishing at Billy's Lake.
6. June 3, 1977 -- Ron Phernetton, refuge personnel, twig penetrated ear while working in woods.
7. June 8, 1977 -- Farley Burnsed, visitor, scraped arm on boat while docking it at Stephen C. Foster State Park.
8. June 20, 1977 -- Roger Hogan, Y.C.C. enrollee, cut right foot, using bush ax. The wound required 13 stitches to close.
9. June 20, 1977 -- Steve Bonner, C.E.T.A. enrollee, chipped tooth on concrete table at the Suwannee Canal Recreation Area in result of a fall.
10. July 25, 1977 -- Wendy Jackson, Y.C.C. enrollee, stung all over body by wasps. Treatment was rendered by a physician.
11. August 4, 1977 -- Charles Perry, Y.C.C. Staff, broke middle finger on left hand while attempting to start chain saw with a compression switch switched to the on position.
12. August 6, 1977 -- Kelsey Kennon, visitor, had to have fishing lure removed from lip as a result of a fishing mishap at Billy's Lake.
13. September 1, 1977 -- Martin Johnson, visitor, stepped on broken bottle with bare feet at Stephen Foster. Accident occurred while loading boat.
14. September 19, 1977 -- Omer "Neb" Bowen, refuge personnel, slipped on a truck-transport and struck head on trailer, requiring several stitches.
15. October 11, 1977 -- Nancy Schnider, visitor, slipped on freshly waxed floor at Stephen C. Foster State Park concession building.



SUWANNEE CANAL RECREATION AREA, Inc.

Harry Johnson
Concessionaire

PHONE 496-7156

Route Two
Folkston, Georgia 31537

Canoe Rentals — Equipment Rentals — Canoe Shuttling Fees

<i>Item</i>	<i>Per Day</i>
Tent	\$2.00
Sleeping Bag W/Liner	\$1.75
Foam Pads75
Tarp50
Cookware Set	\$2.00

<i>Item</i>	<i>Per Day</i>
Poncho	\$.50
Coleman Stove	\$1.00
Coleman Lantern	\$1.00
Car top Carrier75
Portable Toilet75

**ALL RENTAL EQUIPMENT AND CANOES MUST BE RETURNED TO
SUWANNEE CANAL RECREATION AREA BY RENTOR**

Canoe Rentals

2 Day Trip	\$13.00
3 Day Trip	\$19.50
4 Day Trip	\$26.00
5 Day Trip	\$32.00
6 Day Trip	\$39.00

NOTICE

All rental equipment and canoes must be paid by cash or travelers checks. No personal checks will be accepted.

Canoe Shuttling

- A.
Suwannee Canal Recreation Area to
Kingfisher Landing\$10.00
- B.
Suwannee Canal Recreation Area to Kingfisher
Landing and pick-up at Stepehn C. Foster
State Park\$30.00
- C.
Suwannee Canal Recreation Area to Kingfisher
Landing, then back to Kingfisher for pick-up ...\$15.00

CONSPICUOUS OKEFENOKEE PLANTS

Open Prairies and Water Course in Forests

- White waterlily - *Nymphaea odorata*
- Spatterdock - *Nuphar advena*
- Neverwet - *Orontium aquaticum*
- Pipewort - *Eriocaulon compressum*
- Floating heart - *Nymphoides aquaticum*
- Beakrush - *Rhynchospora inundata*
- Wampee - *Peltandra glauca*
- Water plaintain - *Sagittaria graminea*
- Water stargrass - *Xyris smalliana*
- Bladderwort - *Utricularia purpurea*

Prairie Edge

Herbaceous Plants

- Sphagnum - *Sphagnum* spp.*
- Chain fern - *Woodwardia virginica*
- Chain fern - *Woodwardia areolata*
- Club moss - *lycopodium carolinianum*
- Maidencane - *Panicum hemitomum*
- Maidencane - *Sacciolepis striata*
- Pickernelweed - *Pontederia cordata*
- Paintroot - *Lachnanthus tinctoria*
- Swamp iris - *Iris Caroliniana*
- Grass pink - *Calopogon pulchellus*
- Pitcherplant - *Sarracenia minor*

Golden trumpet - *Sarracenia flava*
Sundew - *Drosera intermedia*
Aquatic spikerush - *Eleocharis baldwinii*
Marsh St. Johnswort - *Hypericum virginicum*
Water pennywort - *Hydrocotyle umbellata*
Marsh marigold - *Bidens coronata**

Woody Plants

Buttonbush - *Cephalanthus occidentalis*
Swamp loosestrife - *Decodon verticillata*
Virginia sweetspire - *Itea virginica**
Red chokeberry - *Pyrus arbutifolia*
Hurrah bush - *Lyonia lucida**
Titi - *Cyrilla racemiflora**
St. Johnswort - *Hypericum fasciculatum*
(only where sand is near the surface)
Poor-man's soap - *Clethra alnifolia**
Swamp fetterbush - *Leucothoe racemosa**
Swamp fetterbush - *Lyonia ligustrinia**
Black bamboo vine - *Smilax laurifolia*
Red bamboo vine - *Smilax Walteri**
Bullace - *Vitis munsoniana**

Swamp Forest

Understory plants same as those marked with an asterisk (*) above.

Trees

Pond cypress - *Taxodium distichum nutans*

Swamp blackgum - *Nyssa sylvatic biflora*

Red maple - *Acer rubrum*

White bay - *Persea virginiana*

Red bay - *Persea borbonia*

Loblolly bay - *Gordonia lasianthus*

Titi - *Cyrilla racemiflora*

Cassena - *Ilex cassine*

Swamp Edge

All the swamp forest and prairie edge species listed above, plus:

Ogeche lime - *Nyssa ogeche*

Pinckneya - *Pinckneya pubens*

Wax myrtle - *Nyrica cerifera*

Red chokeberry - *Pyrus arbutifolia*

Sandweed - *Hypericum fasciculatum*

UNITED STATES DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife

Okefenokee National Wildlife Refuge, Georgia, Bibliography

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

SPORT FISHING REGULATIONS

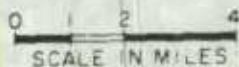
OKEFENOKEE NATIONAL WILDLIFE REFUGE

Waycross, Georgia

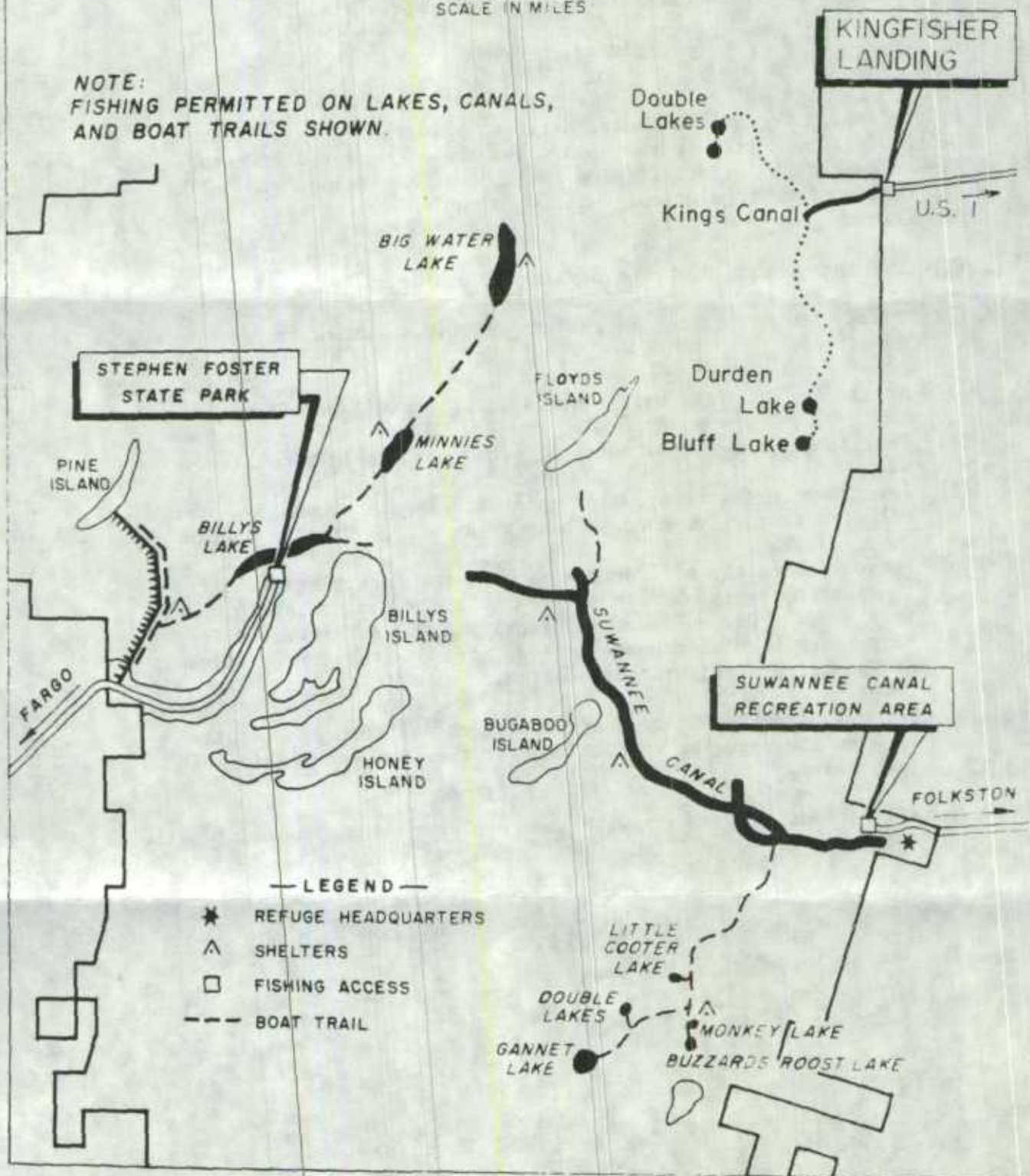
Sport fishing on the Okefenokee National Wildlife Refuge, Waycross, Georgia, is permitted in the open water areas connected by established boat runs. Sport fishing shall be in accordance with all applicable State regulations subject to the following special conditions:

- (1) Fishing permitted during daylight hours only.
- (2) Boats with motors not larger than 10 h.p., canoes and rowboats permitted.
- (3) Artificial and live bait (except live minnows) permitted.
- (4) Trotlines, limb lines, nets, or other set tackle prohibited.
- (5) Persons entering refuge from main access points must register with the respective concessioner or at a registration station.
- (6) Persons using the sill access ramp on the pocket are required to sign the register when they enter the swamp and again when they leave. Use of launching facilities is permitted as long as parking regulations are not violated. Parking regulations are posted at registration station.
- (7) Persons using the Kingfisher Landing access ramp are required to sign the register when they enter the swamp and again when they leave.
- (8) All persons will comply with the regulatory signs posted in all areas.

OKEFENOKEE NATIONAL WILDLIFE REFUGE



NOTE:
FISHING PERMITTED ON LAKES, CANALS,
AND BOAT TRAILS SHOWN.



OKEFENOKEE NATIONAL WILDLIFE REFUGE
STEPHEN C. FOSTER STATE PARK
ACCESS FROM FARGO, GEORGIA
APRIL 19, 1976

Access: From Fargo, Georgia, at Junction at U. S. 441 and State Routes 89 and 94, take State Route 177 - 17 miles.

Concessioner: Department of Natural Resources, Parks and Historic Sites Division, Bill Thomas, Park Superintendent, Fargo, Georgia 31631: telephone 912/496-7509.

Miscellaneous Equipment:

1. Boat - \$3.00 per day
2. Boat & motor - $\frac{1}{2}$ day (4 hrs.) - \$8.00 (1 tank of gas)
1 day (8 hrs.) - \$15.00 (1 tank of gas)
3. \$1.00 deposit on each paddle, cushion and trash can
4. Launching fee - \$1.00 per boat or canoe
5. Canoe - \$1.00 per hour or \$5.00 for 8 hours (DAY USE ONLY)
6. Overnight docking - \$1.00 per boat
7. ALL BOATS AND CANOES ENTERING OKEFENOKEE ARE REQUIRED TO CARRY ALONG A TRASH CAN.

Sightseeing Trips (w/guide, boat, motor, life jacket):

For photography, bird watching, nature study, etc.

1. 1 hr. trip - \$3.00 person, \$1.50 child 8 through 11 (free under 8)

Additional Facilities:

Public boat launching ramp (fee charged)

Concession building - interpretive displays

Picnicking area

Public rest rooms

Family campground - \$3.00 per night with electricity hookup and water.

Housekeeping cottages - \$14 couple per day, \$84 per week; \$2 each additional person; child under 12 \$1 per day, \$6 per week; children under 2 free.

Pioneer camping area (no fee) - Organized youth groups only, i.e. scouts, church groups, school groups.

Nature trail with board walk.

NOTE: Park hours: 6:30 a.m. to 8:30 p.m. - March 1 to September 14
7:00 a.m. to 7:00 p.m. - September 15 to February 28

STRICTLY ENFORCED HOURS CONFORM TO FEDERAL
REGULATIONS

DO NOT FEED THE ANIMALS - THEY WILL BITE

OKEFENOKEE NATIONAL WILDLIFE REFUGE
OKEFENOKEE SWAMP PARK
ACCESS FROM WAYCROSS, GEORGIA

Access: From Waycross, Georgia, south 8 miles on U. S. 1 and 23 to entrance at Vercen Bell Memorial Highway (State Road 177).

Concessioner: Okefenokee Swamp Park, Mr. Jimmy Walker, Park Manager, Okefenokee, Georgia 31501; telephone 912/283-0583.

Admission Rates:

\$4.00 per adult; \$2.50 child under 12; pre-school children free if accompanied by parent.

Group rate: \$3.00 per adult; \$2.00 per child.

Admission covers all features of park (shows, exhibits, 24-minute boat ride).

Sightseeing Trips: (w/guide, boat, motor, life jacket)

For photography, bird watching, nature study, etc.

2 hr. trip - \$3.00 person.

1 day (8 hrs.) - \$35.00 1st person, \$15 second person.

Fishing Rates: (by reservation and with guide only).

(Guide, boat, motor, life jacket furnished)

1 day (8 hrs.) - \$35.00 1st person, \$15 second person.

Additional Facilities:

Wilderness walkways

Observation tower

Serpentarium and alligator pools

Animal and bird exhibits and observatories

Museum and Ecology Center

Concession

Picnic facilities

Note: Park hours are variable depending on season of the year. Exact hours may be determined by contacting the Park Manager.

PRICES EFFECTIVE JANUARY 1, 1978



United States Department of the Interior

FISH AND WILDLIFE SERVICE

REGULATIONS PERTAINING TO PUBLIC USE OF THE OKEFENOKEE NATIONAL WILDLIFE REFUGE

1. Firearms and hunting are not permitted on the refuge.
2. Travel within the refuge is permissible only on designated, established trails. Outboard motors in excess of 10 horsepower are not allowed. Each occupant of a boat is required by Georgia Law to have a Coast Guard approved life preserver with him.
3. The collecting or disturbing of wildlife, plants, minerals or artifacts is prohibited except as noted in the next item.
4. Sport fishing is allowed on designated areas in accordance with Georgia State Laws. The only methods allowed are fishing with pole and line or rod and reel. The use of live minnows as bait is prohibited.
5. Camping, (other than that associated with overnight canoe trips) on the refuge is allowed only in the established campground at Stephen C. Foster State Park.
6. Campfires may be used only in the established campgrounds at Stephen Foster State Park. Such fires must be tended at all times and completely extinguished when left. Consult the Park Superintendent about fuel.
7. Pets must be kept in cars or on a leash. Pets are not permitted in boats.
8. Swimming and wading are not allowed due to the danger involved from alligators and poisonous snakes.
9. Visitor use is permitted during specific times posted at refuge entrances.
10. Littering on a national wildlife refuge is against Federal regulations. Leave no litter on the refuge except in designated litter barrels.
11. Neither the Government nor its agents are responsible for the safety of persons permitted on the refuge.
12. Intoxicated or disorderly individuals are not allowed on the refuge and are subject to arrest.



KEEP OKEFENOKEE BEAUTIFUL
BRING YOUR LITTER BACK TO DOCK

FEEDING OF ANIMALS IS ABSOLUTELY PROHIBITED.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
OKEFENOKEE NATIONAL WILDLIFE REFUGE
FEDERAL BUILDING - ROOM 109
601 TEBEAU STREET
P. O. BOX 117
WAYCROSS, GEORGIA 31501

ADMINISTRATIVE DETAILS OF OKEFENOKEE NATIONAL WILDLIFE REFUGE

The 435,000 acre Okefenokee Swamp is situated in Ware, Clinch, and Charlton Counties, Georgia and Baker County, Florida. Okefenokee National Wildlife Refuge has direct ownership and control over 379,302 acres of this magnificent, primeval swamp. The entire refuge is administered and managed by the United States Department of the Interior, United States Fish and Wildlife Service.

There are three primary entrances and one secondary entrance into Okefenokee National Wildlife Refuge.

The Suwannee Canal Recreation Area (locally Camp Cornelia), a primary entrance 12 miles southwest of Folkston, Georgia, is controlled entirely by the U. S. Fish and Wildlife Service. This entrance is staffed by U. S. Fish and Wildlife Service personnel. A full service concession located at this entrance is operated by a private individual and his staff working under the provisions of a contract between the concessioner and the U. S. Fish and Wildlife Service.

The second primary entrance, which is located 18 miles northeast of Fargo, Georgia, is known as Stephen C. Foster State Park. This state park is located on Federally-owned refuge lands under the provisions of a long-term permit agreement between the U. S. Fish and Wildlife Service and the Georgia Department of Natural Resources, Parks and Recreation Division. State Park personnel administer the park subject to existing rules and regulations governing Okefenokee National Wildlife Refuge.

The third primary entrance into Okefenokee National Wildlife Refuge is the Okefenokee Swamp Park. This park is located 13 miles south of Waycross, Georgia and is established on lands and waters of Okefenokee National Wildlife Refuge and the Waycross State Forest. The Okefenokee Swamp Park Association, Inc., a private, non-profit organization of Waycross, Georgia, administers this entrance. Use of Federally-owned

refuge lands and boat trails by the Okefenokee Swamp Park Association is carried out under the provisions of a permit between the Okefenokee Swamp Park Association and the U. S. Fish and Wildlife Service.

The secondary entrance into Okefenokee National Wildlife Refuge is known as Kingfisher Landing and is located approximately 12 miles north of Folkston 1 mile off U. S. Highway 1. This entrance is not developed, and access is controlled by U. S. Fish and Wildlife Service personnel.

In addition to being a National Wildlife Refuge, Okefenokee also enjoys the protection provided a unit of the National Wilderness Preservation System.

The main office for Okefenokee National Wildlife Refuge is in Waycross, Georgia with the sub-headquarters office being situated at the Suwannee Canal Recreation Area near Folkston.

OKEFENOKEE NATIONAL WILDLIFE REFUGE
SUWANNEE CANAL RECREATION AREA
ACCESS FROM FOLKSTON, GEORGIA

PRICES EFFECTIVE NOVEMBER 15, 1977

Access: From Folkston, Georgia, on State Route 23 - 8 miles south, then 4½ miles from refuge entrance sign.

Concessioner: Mr. Harry Johnson, Route 2, Folkston, Georgia 31537; telephone 912/496-7156.

Miscellaneous Equipment:

1. Canoe & paddles
 - a. \$4.00 per day
 - b. 2 day trip - \$13.00
 - c. 3 day trip - \$19.50
 - d. 4 day trip - \$26.00
 - e. 5 day trip - \$32.50
 - f. 6 day trip - \$39.00
2. Boat (14 ft.) & paddles - \$3.50 per day
3. Family boat (16 ft.) & paddles - \$5.50 per day
4. Excursion boat (20 ft.) & paddles - \$6.50 per day
5. Life jackets (required by State Law) - \$.35 per day
6. Outboard motor w/gas - \$10.50 per day
7. Launching fee - \$1.50 per boat
8. Camping supplies for canoe trips - Prices Available

Sightseeing Trips (w/guide, boat, motor, life jacket):

For photography, bird watching, nature study, etc.

1. 1 hr. trip - \$3.00 person; \$1.50 child 5-11 years; Pre-school 50c
2. 2 hr. trip - \$6.00 person; \$3.00 child 5-11 years; Pre-school \$1.00
3. 1/2 day (4 hrs. - 2 or more persons) - \$12 per person, \$6 child 5-11 years; Pre-school \$2.00

Sightseeing Trips (By reservation only - includes guide, boat, motor, life jacket)

1. 1 day (8 hrs. - 2 or more persons): \$24 per person 12 years and older; \$12 per person 5-11 years; \$4 under 5 years

Sightseeing Trips (By reservation only - private (1 person) - includes guide, boat, motor, life jacket):

1. 1/2 day (4 hrs.) - \$20
2. 1 day (8 hrs.) - \$40

Fishing Trips (By reservation only - includes guide, boat, motor, life jacket):

1. 1/2 day (4 hrs.) - \$20 first person, \$5 each additional person
2. 1 day (8 hrs.) - \$40 first person, \$10 each additional person

Additional Services

Canoe Shuttling (Price is the same for 1-10 canoes)

- A. Suwannee Canal Recreation Area to Kingfisher Landing - \$10.00
- B. Suwannee Canal Recreation Area to Kingfisher Landing and pick up at Stephen C. Foster State Park - \$30.00
- C. Suwannee Canal Recreation Area to Kingfisher Landing, then back to Kingfisher for pick up - \$15.00

Additional Facilities:

- | | |
|--|--------------------------|
| Public boat launching ramp - \$1.50 per boat | Concession building |
| Swamp's Edge Information Center | Picnicking area |
| Public rest rooms | Nature trails |
| Observation tower | Boardwalk |
| Nature drive | Restored Swamp Homestead |

Canoe trails (by reservation only; made through refuge office:

Okefenokee National Wildlife Refuge

P. O. Box 117

Waycross, Georgia 31501 Phone: 912/283-2580)

All per day prices based on Posted Concession Hours unless stipulated otherwise.

NOTE: No overnight facilities at this entrance.

Concession Hours:

Sept. 15 - Feb. 28 - 8AM to 6PM

March 1 - Sept. 14 - 7AM to 7:30 PM

Automatic Refuge Gate opens 30 minutes
before morning concession hours and closes
30 minutes after evening concession hours

"DO NOT FEED THE ANIMALS - THEY WILL BITE"



news release

DEPARTMENT OF THE INTERIOR
U. S. Fish and Wildlife Service

OKEFENOKEE NATIONAL WILDLIFE REFUGE

Eadie 283-2580

FOR IMMEDIATE RELEASE

NIGHT TOUR BOAT TO OPERATE IN OKEFENOKEE

John Eadie, Manager of Okefenokee National Wildlife Refuge, announced today that the recently acquired Night Tour Boat will begin operations about February 1, 1978.

The 21-passenger boat will operate out of the Suwannee Canal Recreation Area which is 11 miles south of Folkston, Georgia. Each tour will begin about an hour before sunset and will last about 2½ hours. The tour will include a portion of the Suwannee Canal and the edge of Chesser Prairie. Each passenger will have an individual spotlight for viewing wildlife at night.

The Night Tour Boat will be available on a reservation only basis. Reservations may be made by contacting Mr. Harry Johnson at 912-496-7156. A minimum of six participants will be required for any single tour, and the price is \$5 per person regardless of age.

The Night Tour Boat is fitted with sliding windows, insect proof screens, and a transparent, weatherproof roof.

X X X X



United States Department of the Interior

FISH AND WILDLIFE SERVICE

OKEFENOKEE NATIONAL WILDLIFE REFUGE

P. O. BOX 117

WAYCROSS, GEORGIA 31501

GENERAL TRIP CANOEING REGULATIONS

1. Overnight canoeing trips by reservation and permit only.
2. Canoeists must camp only at assigned camp sites on assigned dates. Canoeists must remain at camp sites between sunset and sunrise.
3. Canoeists must use only assigned trails and must travel only in assigned directions.
4. Canoeists must sign in and out of the refuge and in and out of each overnight stop.
5. All camp sites and trails must be maintained litter free. Litter may be disposed of at exits.
6. Portable toilets are still required. Chemical toilets at overnight stops must be kept clean and used according to posted instructions. Advise ranger if toilet is inoperable or out of supplies.
7. Human waste materials from portable toilets must be disposed of only at exits. Do not use garbage cans, chemical toilets or the swamp for disposal.
8. Maximum canoe party size is 10 canoes and/or 20 people. Minimum canoe party size is 2 people.
9. Pets are not allowed.
10. Each canoeist must have a Coast Guard approved life saving device.
11. Each canoe must contain a compass and flashlight.
12. No swimming.
13. All launches must be prior to 10 A.M.
14. Use no nails on camping platforms and cut no vegetation. Platforms, all of which are half covered, are suitable for popup tents.
15. Open fires are limited to island stops and at certain locations at these stops. Gasoline stoves are recommended.
16. Vehicles parked overnight at entrances or exits are left at owner's risk and must display a parking placard issued with canoeing permit. Vehicles must be parked in designated area at each entrance or exit.
17. No motors permitted on reserved canoe trips.
18. Equipment reservations and rentals must be made directly with concessionaires. Equipment must be picked up from and returned to concessionaires.
19. Color coded markers designate specific trails and white-topped posts provide guidance between markers.

DON'T BEGIN OR END YOUR
TRIP ON AN UNHAPPY NOTE!
KNOW, UNDERSTAND, AND
FOLLOW ALL REFUGE
REGULATIONS

20. Commercial guiding is absolutely illegal unless carried out by Suwannee Canal Recreation Area, Stephen C. Foster Park, and Okefenokee Swamp Park personnel. Refuge visitors should require guides to display approved guide licenses.
21. Day-use only canoeing is allowed without a permit but only to those points marked "Permit Required Beyond This Point".
22. Vehicle shuttle is not available and must be arranged by canoeists.
23. Know and understand all refuge regulations. Violators will be cited without warning.

For canoeing reservations write or call well in advance of planned trip. Calls are recommended if at all possible.

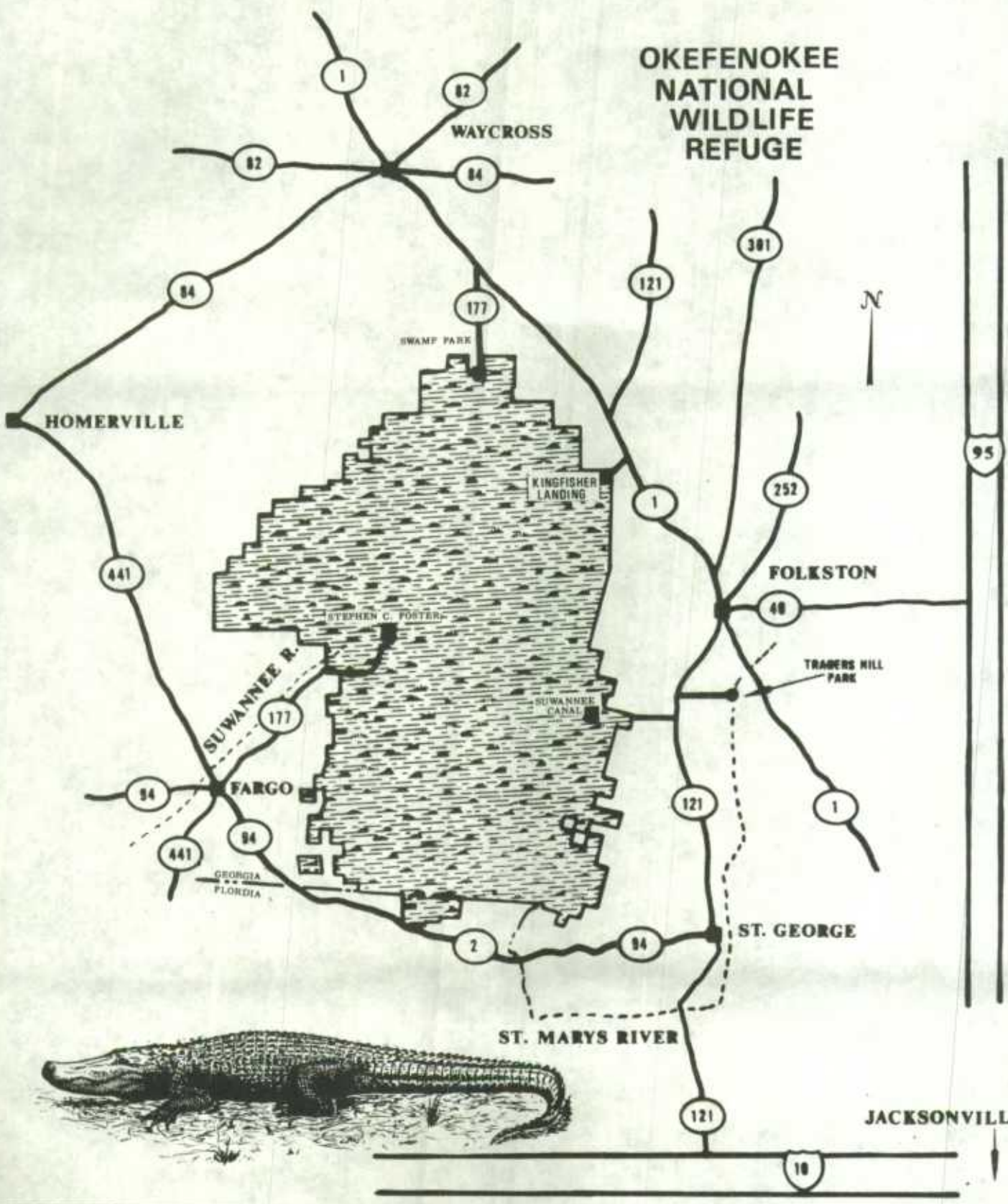
Refuge Manager
Okefenokee National Wildlife Refuge
P. O. Box 117
Waycross, Georgia 31501
Phone: 912/283-2580

Distances between overnight stops (Islands or dry land underlined - Platforms not underlined) over approved routes of travel

1. Kingfisher Landing to Maul Hammock - 12 Miles
2. Maul Hammock to Big Water - 11 Miles
3. Big Water to Stephen Foster - 8 Miles (Fee charged to camp at Stephen Foster)
4. Stephen Foster Park to Floyds Island - 8 Miles
5. Floyds Island to Bluff Lake - 9 Miles
6. Bluff Lake to Kingfisher Landing - 8 Miles
7. Big Water to Floyds Island - 4 Miles
8. Stephen Foster to Cravens Hammock - 9 Miles
9. Suwannee Canal Recreation Area to Cedar Hammock - 7 Miles
10. Suwannee Canal Recreation Area to Canal Run Shelter - 10 Miles
11. Canal Run Shelter to Stephen Foster Park - 7 Miles
12. Cedar Hammock to Floyds Island - 9 Miles
13. Floyds Island to Suwannee Canal Recreation Area - 13 Miles

PLEASE NOTE CAREFULLY - Summer temperatures and humidity on Okefenokee National Wildlife Refuge are usually very high and oppressive. Mosquitoes are bad at night from May through September and often at other times depending upon weather conditions. Yellow (Deer) and black flies are numerous during the Summer months and can inflict painful bites. YOU SHOULD BE AWARE OF THESE DISCOMFORTS WHEN PLANNING SUMMER CANOE TRIPS THROUGH OKEFENOKEE.

OKEFENOKEE NATIONAL WILDLIFE REFUGE





SUWANNEE CANAL RECREATION AREA, Inc.

HARRY JOHNSON, Concessionaire

Phone 912-496-7156
Route Two
Folkston, Georgia 31537

1. The Okefenokee Swamp is world famous as the largest and one of the most primitive swamps in America. Located near Folkston in Southeast Georgia on the Florida line, the Okefenokee encompasses a total area of about 435,000 acres of which 371,000 acres are included in the Okefenokee National Wildlife Refuge. The Okefenokee derives its name from a Choctaw Indian word meaning "quivering earth."
2. The Seminole Indians made the Okefenokee their home until 1838. At that time Charles R. Floyd, with a troop of U.S. soldiers attempted to drive the Indians from the swamp, but they had already left.
3. The Okefenokee is actually a vast peat bog filling a huge saucer-shaped depression that was once part of the ocean floor when the Atlantic Ocean extended some 75 miles west of the present sea coast. It now varies in elevation from 103 feet to 128 feet above the present sea level.
4. The entire swamp, except the islands, is covered with a bed of peat which overlays a firm sand floor. This bed ranges in depth from a thin layer to more than 20 feet in places. This peat mass often surfaces and is so unstable tht it can be caused to tremble by stepping on it, hence the title, "Land of the Trembling Earth."
5. Being higher than much of the surrounding area, the Okefenokee is dependent upon local rainfall for its water supply, but there are some springs. The water is in constant circulation as it drains away from a series of ridges in the center of the swamp to become the source of origin of two major rivers--the St. Marys and the Suwannee.
6. Okefenokee "prairies" are shallow expanses of dark but highly reflective water lush with colorful aquatic blooms and dotted with "hammocks" on which shrubs and trees have taken root.
7. Although there are about 60 lakes in the Okefenokee the open water ratio is relatively small. The open water area of all lakes, gator holes and water courses combined is less than 1,000 acres.
8. There are over 225 species of birds that have been identified in the swamp, over 42 species of mammals, 58 species of reptiles, 32 species of amphibians and 34 species of fishes. The steadily mounting alligator population is now past the 10,000 mark within the Okefenokee.
9. The Okefenokee is a magnificent wildlife refuge but it is also much more. It represents an attempt to hold in trust for all people--sightseers, students, artists, naturalists, photographers, fishermen--this amazing world with its beautiful mirrored lakes, covered with aquatic blooms bordered by moss-bearded trees, landscaped only by nature, producing scenic effects of haunting, mysterious beauty.
10. The Okefenokee is always beautiful, always fascinating, changing with the seasons, but always a scenic wonderland.

OKEFENOKEE SWAMP . . . THE LAND OF TREMBLING EARTH

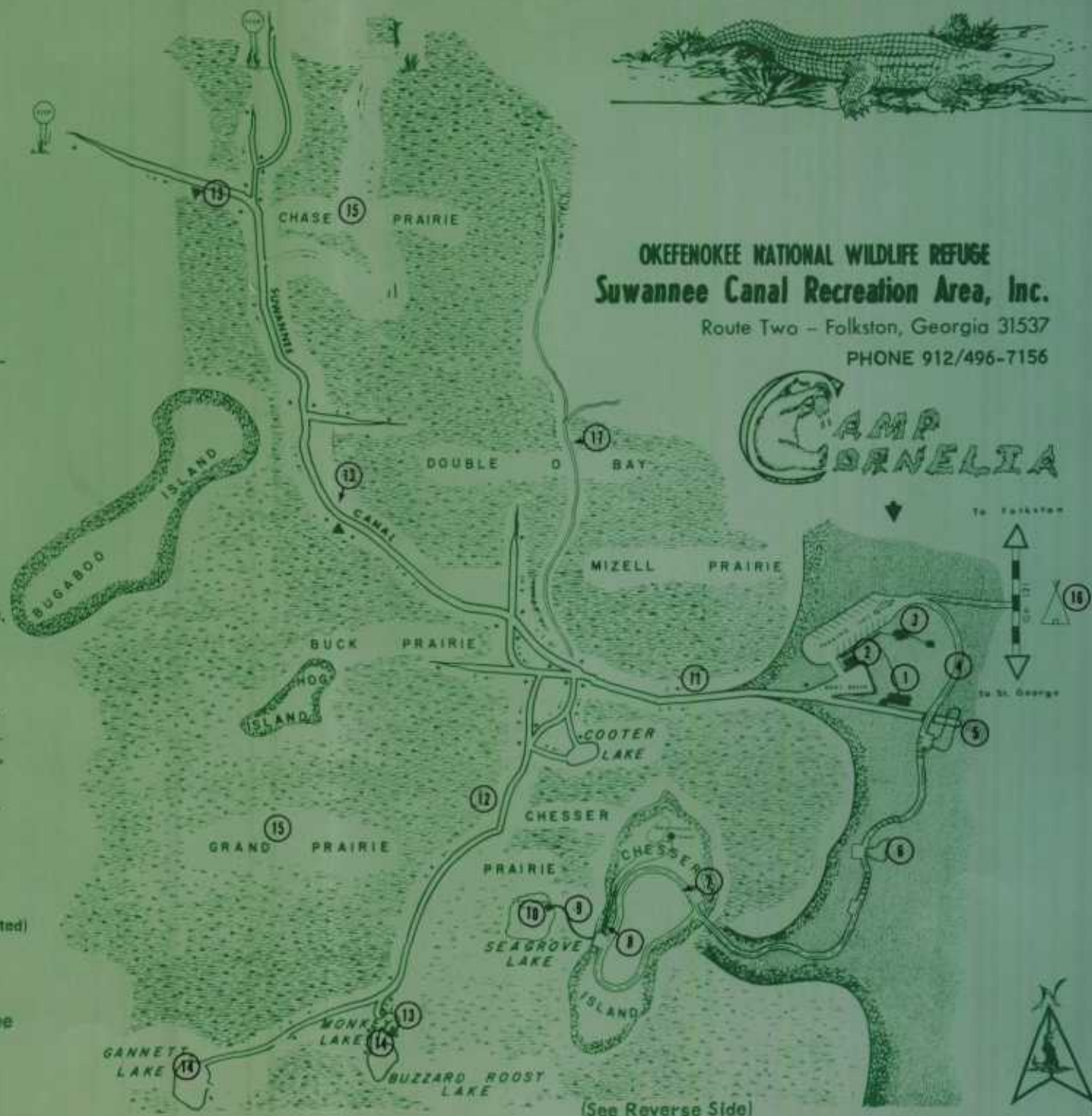
DISCOVER OKEFENOKEE

WHAT TO SEE WHAT TO DO

1. Suwannee Canal Recreation Area Information Center.
2. Fishing Concession Center (tackle shop, boat-motor, canoes, and overnight camping equipment rentals).
3. Visitor Picnic Area.
4. Four and one-half mile Scenic Automobile Nature Drive.
5. Canal Diggers Hiking Trail.
6. Peckerwood Hiking Trail.
7. Chesser Island Homestead
8. Deer Stand Hiking Trail.
9. 4,000 foot Scenic Board Walk into Okefenokee.
10. 50 foot Observation Tower Overlooking the Okefenokee.
11. Suwannee Canal - 12 miles in length - (good fishing, sightseeing, and nature photography).
12. Winding water trails into interior of Okefenokee Prairie Areas and to Lakes (good fishing, sightseeing, and nature photography).
13. Rest Area (picnic tables and toilet facilities).
14. Okefenokee Lakes (good fishing, sightseeing, and nature photography).
15. Open Water Prairie with water plants (sight-seeing and nature photography).
16. KOA Campground (privately owned and operated)
17. Wilderness overnight canoe trails (travel by permit only).

Scenic Guided Boat Tours into Okefenokee

- One hour tour (4.5 mile round trip)
- Two hour tour (9-10 mile round trip)



OKEFENOKEE NATIONAL WILDLIFE REFUGE
Suwannee Canal Recreation Area, Inc.

Route Two - Folkston, Georgia 31537

PHONE 912/496-7156

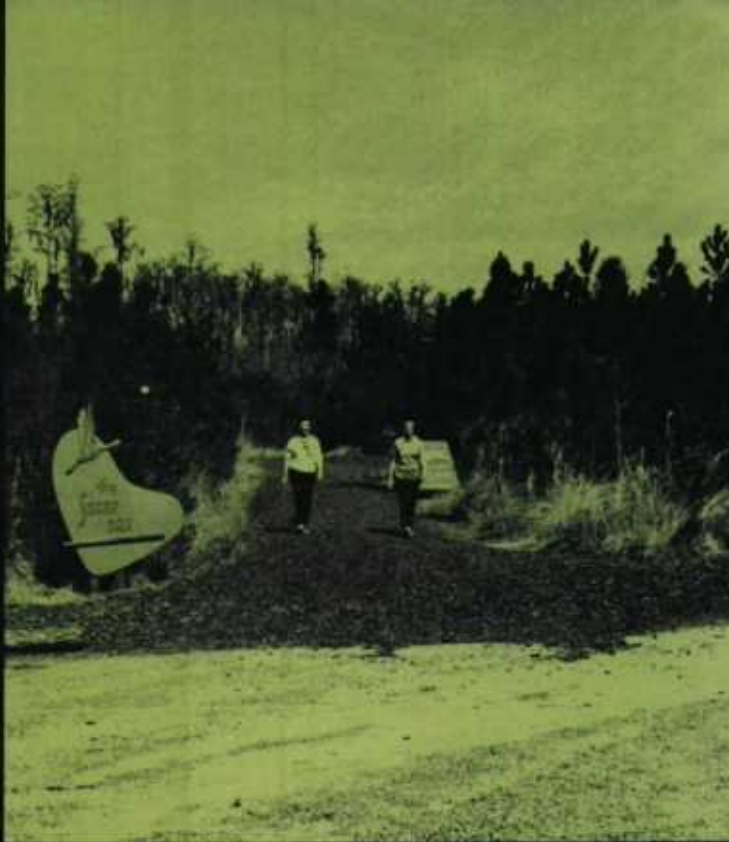


(See Reverse Side)

REGULATIONS PERTAINING TO PUBLIC USE OF THE
OKEFENOKEE NATIONAL WILDLIFE REFUGE

1. Public use permitted during daylight hours only.
2. Firearms and hunting are not permitted on the refuge. Travel within the refuge is permissible only on designated established trails. Outboard motors not exceeding 10 horsepower are permitted. Each occupant of a boat is required by Georgia law to have a Coast Guard-approved life preserver with him.
3. The collecting or disturbing of wildlife, plants, minerals, or artifacts is prohibited except as noted in the next item.
4. Sport fishing is allowed on designated areas in accordance with Georgia State laws. The only method allowed is fishing with pole and line or rod and reel. The use of live minnows as bait is prohibited.
5. Camping on the refuge is permitted only in the established campground at Stephen Foster State Park, located on the west side of the Okefenokee, and as a part of the wilderness canoeing program.
6. Campfires are permitted only in the established campgrounds at Stephen Foster State Park.
7. Pets must be kept in cars or on a leash. Pets are not permitted in boats.
8. Swimming and wading are not allowed due to the danger involved from alligators and poisonous snakes.
9. Littering of a national wildlife refuge is against Federal regulations. Leave no litter on the refuge except in designated litter barrels.
10. Intoxicated or disorderly individuals are not permitted on the refuge and are subject to arrest.
11. Overnight canoe trips by reservation only.

PLEASE DO NOT LITTER!

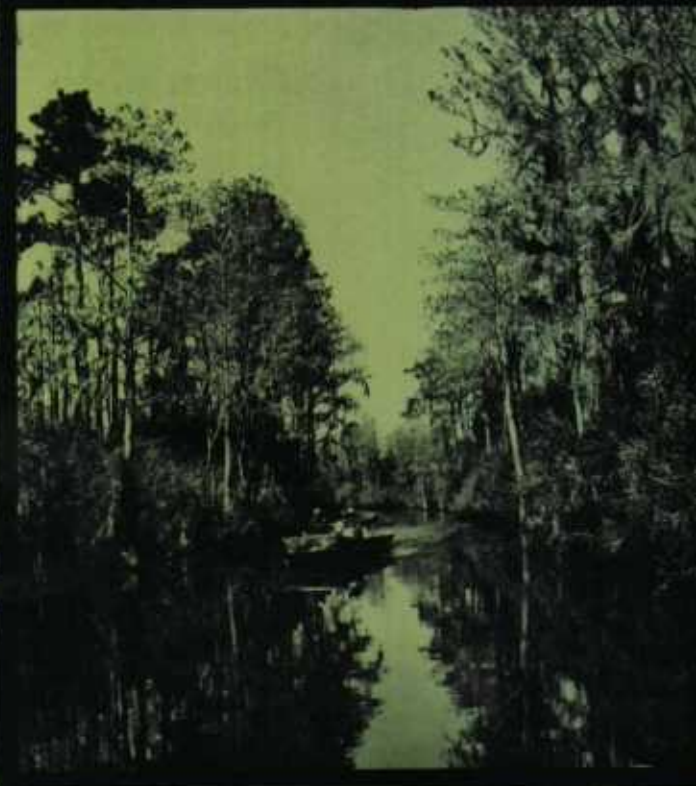


There's lots to do and see at the Suwannee Canal
Recreation Area.



Suwannee Canal Recreation Area

Okefenokee National Wildlife Refuge

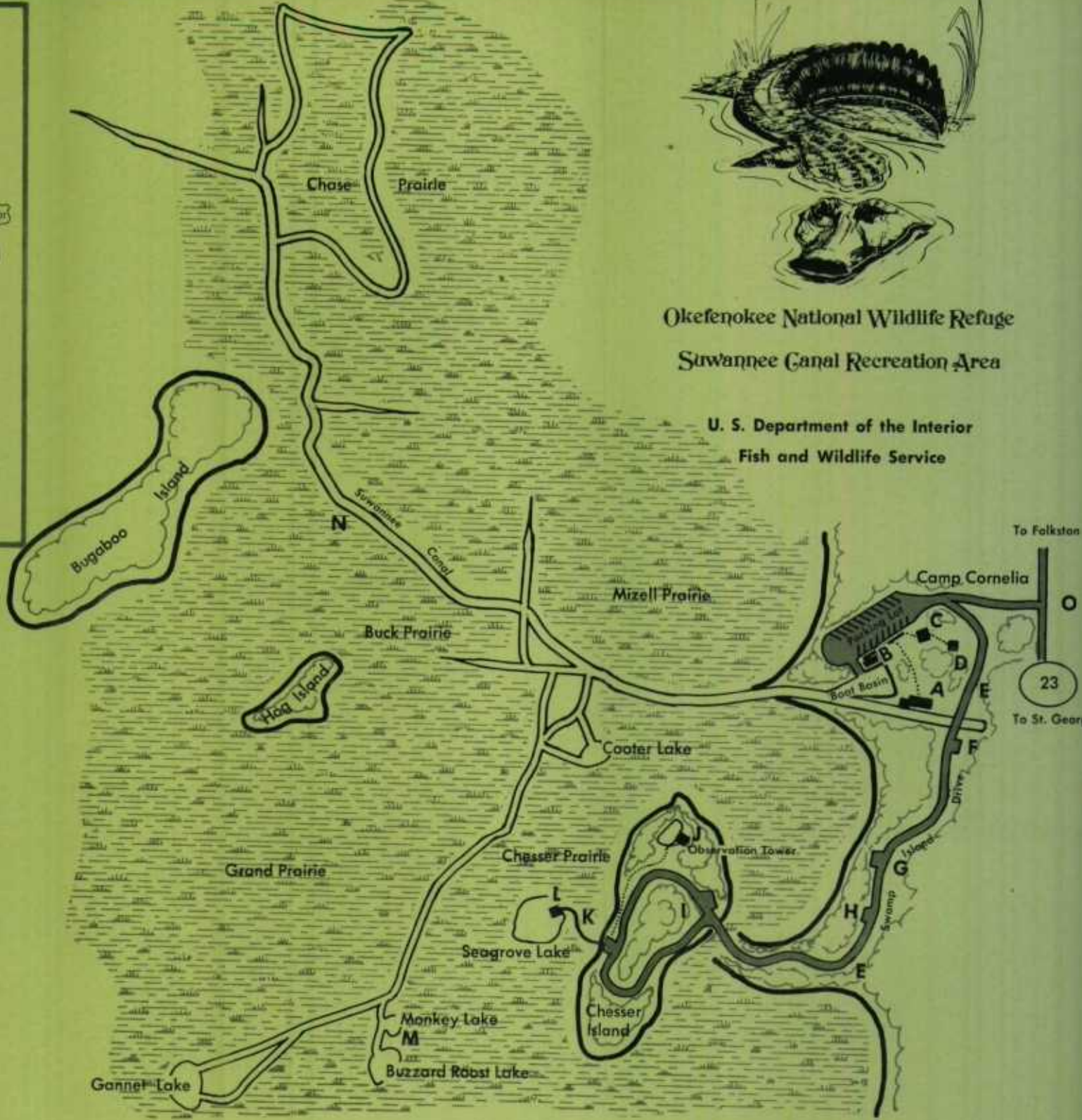
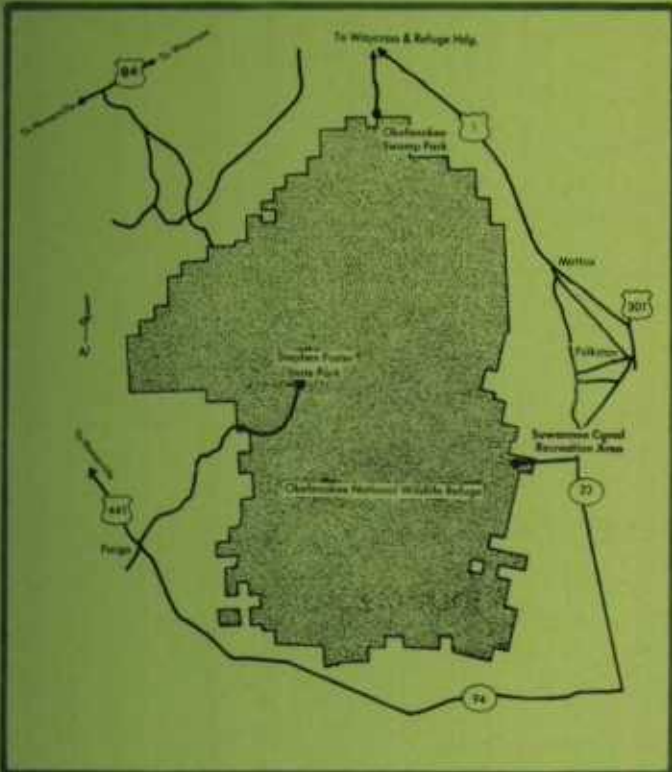


Wildlife Oriented Recreation



Okefenokee National Wildlife Refuge
Suwannee Canal Recreation Area

U. S. Department of the Interior
Fish and Wildlife Service



- LEGEND**
- Roads
 - ▭ Swamp Area
 - Open Waterways
 - A—Visitor Center
 - B—Fishing Center
 - C—Picnic Shelter and Area
 - D—Restrooms
 - E—Driving Trail
 - F—Canal Diggers Walking Trail
 - G—Peckerwood Walking Trail
 - H—Prescribed Burning Exhibit
 - I—Homestead Walking Trail
 - J—Deerstand Trail and Tower
 - K—Boardwalk (4,000 ft.)
 - L—Observation Tower
 - M—Rest Shelter
 - N—Rest Shelter
 - O—Private Campground



To Folkston
O
23
To St. George

NOTICE

**All rental equipment and
Canoes must be paid by cash or
travelers checks. No personal
checks will be accepted.**

**SUWANNEE CANAL RECREATION AREA
HARRY JOHNSON, Concessionaire**

QUALITY CONTROL: Each canoe trail will be limited to one party daily, and each party will be limited to a maximum of 10 canoes and/or 20 persons. Canoeists are responsible for keeping trails free from litter. This means that litter must be held until after you leave the swamp; litter left by previous parties should be retrieved. Motors are not permitted.

WILDLIFE: Wildlife abound in the Okefenokee every month of the year. Sandhill cranes, ducks and other migratory birds are most numerous from November through March. Otter are commonly seen during cold weather when alligators are relatively inactive. Alligators are active in the summer and are observed sunning on banks mostly during spring and fall.

In general, mosquitoes are no problem except after dark from April through October. They are rarely encountered during the daytime. Deerflies, although a biting menace at times during the summer, are not as bad deep in the swamp. There is no need to fear snakes or alligators as long as normal precautions are taken and animals or nests are not molested.

FISHING: Sport fishing is permitted during daylight hours in accordance with Georgia State Law and refuge regulations. Live minnows are not permitted as bait in Okefenokee waters. Bass fishing is best in early spring and late fall, but a lot depends upon water levels, moon phase, weather, and the skill of the fisherman.

SUGGESTED SUPPLIES: 1) Rope for pulling canoe; 2) Drinking water; 3) Insect repellent; 4) Mosquito netting; 5) Rain gear; 6) First aid kit; 7) Snake bite kit; 8) Extra batteries; 9) Litter bags; 10) Pop tent and/or jungle hammock and sleeping bag. Canoes and other camping equipment are available for rent from the concessioner, Suwannee Canal Recreation Area, Folkston, Georgia 31537, Phone 912/496-7156.

DESIGNATED CANOE TRIPS:

1. Kingfisher — Maul Hammock — Big Water — Stephen Foster — 3 days (31 miles)
2. *Kingfisher — Bluff Lake — Floyd's Island — Stephen Foster (via Floyds Prairie) — 3 days (24 miles)
3. Kingfisher — Bluff Lake — Floyd's Island — Stephen Foster (via Suwannee Canal Run) — 3 days (27 miles)
4. Suwannee Canal — Duck Island — Suwannee Canal — 2 days (12 miles)
5. Suwannee Canal — Suwannee Canal Run — Stephen Foster — 2 days (17 miles)
6. *Suwannee Canal — Cedar Hammock — Floyd's Island — Stephen Foster (via Floyds Prairie) — 3 days (24 miles)
7. Suwannee Canal — Cedar Hammock — Floyd's Island — Stephen Foster (via Suwannee Canal Run) — 3 days (27 miles)
8. Stephen Foster — Cravens Hammock — Stephen Foster — 2 days (18 miles)
9. *Suwannee Canal — Cedar Hammock — Floyd's Island — Suwannee Canal — 3 days (29 miles)
10. *Suwannee Canal — Cedar Hammock — Floyd's Island — Bluff Lake — Kingfisher — 4 days (32 miles)
11. *Kingfisher — Maul Hammock — Big Water — Floyd's Island — Bluff Lake — Kingfisher — 5 days (43 miles)
12. Kingfisher — Bluff Lake — Kingfisher — 2 days (15 miles)
13. Kingfisher — Maul Hammock — Big Water — Stephen Foster — Floyd's Island — Bluff Lake — Kingfisher — 6 days (55 miles)

Note: Short portage across Floyd's Island required on all trips crossing this island.

*Starting point and destination may be reversed, but only by permit.

Mileages shown are total for each trip.

PERMITS: Canoe trips into the Okefenokee wilderness may be arranged in advance or on a first-come basis. For permits and reservations write or phone well in advance of planned trip to:

Refuge Manager
Okefenokee National Wildlife Refuge
P. O. Box 117
Waycross, Georgia 31501
Phone: 912/283-2580

The following information should be submitted with your request for a permit:

1. Date trip is planned.
2. Choices of canoe trails.
3. Expected number of canoes in party (a maximum of 10 canoes—20 persons—is permitted).
4. Name of person in charge.
5. Names and addresses of all participants.

PHYSICAL CONDITIONS: The swamp terrain is flat; there is no fast water and very little dry land. Your paddle will be used every inch of the way as you wind through cypress forests or cross open "prairies" exposed to the sun and wind. You may have to get out of your canoe and push across peat blowups or shallow water. Water levels in the Okefenokee Swamp sometimes become too low to permit use of certain trails; when this occurs, parties holding reservations will be notified.

WEATHER: Daytime temperatures are mostly mild. However, during June, July, August and September the swamp can be hot and humid with temperatures ranging above 90°. Winter days range from below 40° to 80°, but much of the time temperatures are in the fifties and sixties. Summer nights are warm, and winter nighttime temperatures can be near or below freezing. Record lows have dipped to 18°. The rainy season is normally from June through September. Many summer afternoons are drenched with localized thundershowers. Lightning is probably the most dangerous feature of an Okefenokee experience.

SAFETY: Each traveler is required by law to have a Coast Guard approved life preserver in his possession. Each canoe must contain a compass and a flashlight. Each canoeist must register when entering and leaving the swamp. Due to danger from alligators, pets may not be taken into the swamp. For the same reason, swimming is not permitted. Minimum party size for safety is two persons. Parties will not be permitted to launch later than 10:00 a.m. to insure that the overnight stop is reached before dark.

CAMPING: Overnight camping is permitted only at designated overnight stops. You must register at each stop. Since firm land is not available at all overnight stops, a 20' x 28' wooden platform is provided. Pop tents are recommended. No nails should be used and no trees or limbs should be cut. Open fires are not permitted except at specified areas, so gasoline, bottle gas or similar types of stoves will be required if you plan to cook meals. You must remain at the designated overnight area between sunset and sunrise. You may camp only one night per rest stop. Portable toilets with disposable bags are required.

DO NOT FEED WILD ANIMALS
THEY WILL BITE



U. S. Department of the Interior
Fish and Wildlife Service

Wilderness Canoeing in Okefenokee



National Wildlife Refuge

Okefenokee Canoeing Trails

- Legend**
- Overnight Stop
 - Yellow Trail
 - Red Trail
 - Green Trail
 - Brown Trail
 - Blue Trail
 - Orange Trail

Markers are placed one mile apart with mileage figures shown on the sign. Numbering begins at Kingfisher Landing for the red and green trails, at the Suwannee Canal for the yellow trail and orange trail, and at Stephen Foster for the brown trail. White posts without signs are installed where additional guidance is needed. Guides are not required or needed.



VISIT THE INCOMPARABLE

Okefenokee

NATIONAL WILDLIFE REFUGE



Primary Entrance at

FOLKSTON

U.S. 1-23-301 In Southeast Georgia

VISIT THE INCOMPARABLE

Okefenokee

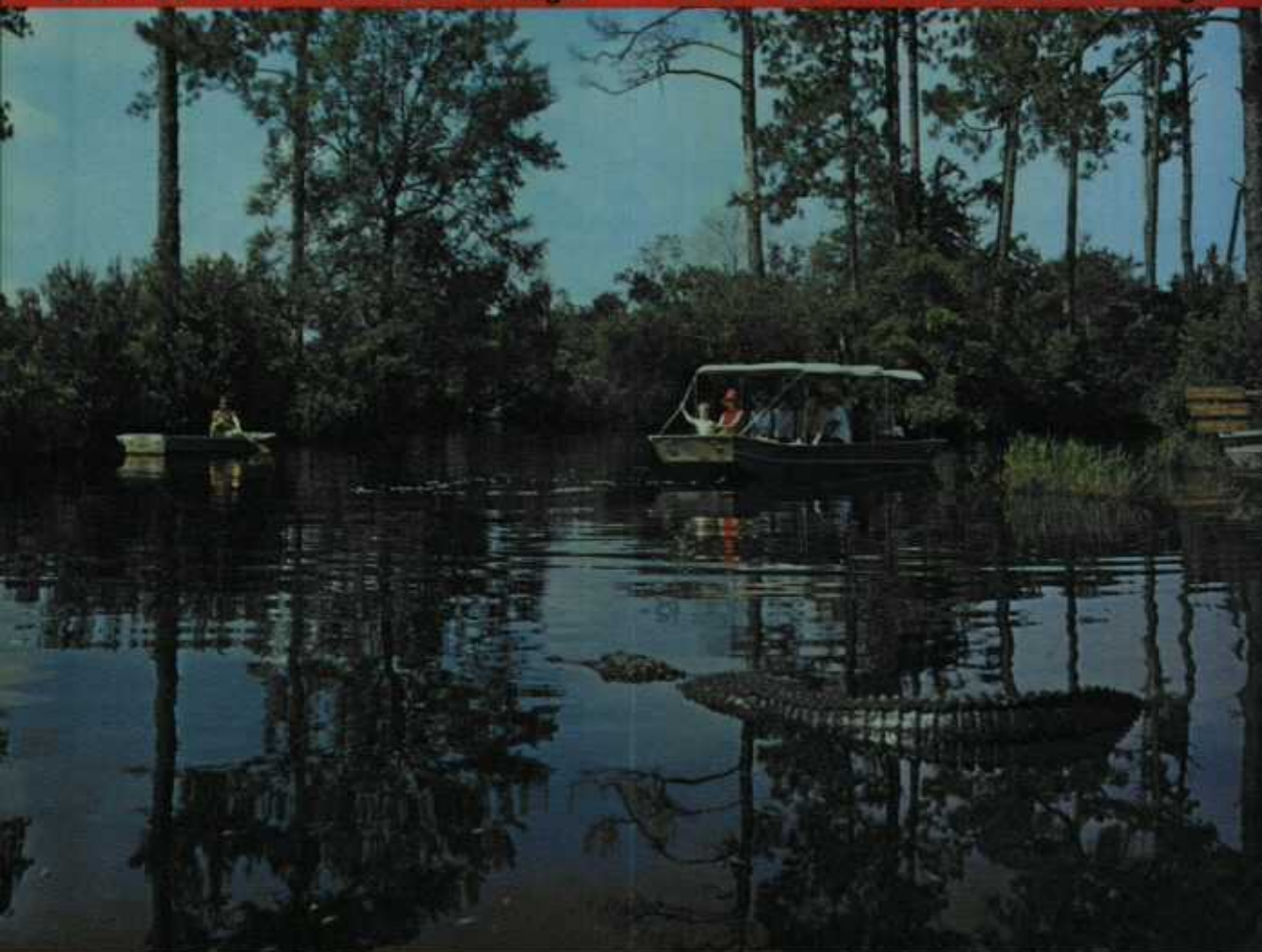
NATIONAL WILDLIFE REFUGE



Primary Entrance at

FOLKSTON

U.S. 1-23-301 In Southeast Georgia



Published by
INLOW ASSOCIATES

Boating - Fishing - Guided Tours



PADDLE YOUR OWN CANOE . . . or rent a boat and motor, and glide through miles of marked water trails that thread this enchanted forest, where time has stood still for thousands of years!

A family affair . . .

Natural, unspoiled and virtually unmarked by man's presence, Okefenokee's primeval beauty has been made readily accessible for enjoyment by the average tourist family.

Guided boat tours leave several times daily for trips through miles of water trails into the heart of the swamp.

An elevated boardwalk takes hikers on an enchanting, dry-footed hike nearly a mile to an observation tower reaching high above the cypress forest, and offering a sweeping panorama of the open swamp. There are nature trails with special blinds for observing and photographing wildlife.

Camping is not permitted in the swamp itself, but camping facilities are available in Folkston.

For "roughing it" in even more comfort, Folkston has modern motel and restaurant facilities for over 1,000 guests along U.S. Highways 1, 23 and 301 — just 15 minutes from Suwannee Canal! Folkston's par-72 golf course is nearby, and open to visitors.



THIS SWAMP TRAIL is typical of the many miles of such water courses that invite the exploring boatman or canoe fan.

A FOURSOME of visitors enjoys a game on Folkston's par-72 golf course.



PICNIC PAVILION is available for small family parties or large groups. Grills, tables and running water are provided.





WILDLIFE ABOUNDS in Okefenokee's 412,000 acres — deer, bear, and 40 other mammals, 225 species of birds, 37 fishes and 54 kinds of reptiles, including an alligator population of over 5,000!



THE BOAT BASIN (left) offers guided tours, souvenirs, rental boats, fishing tackle, a "Country Store" and public boat ramp.



A FRIENDLY RECEPTION awaits visitors in the Welcome Center and Museum, along with information about the Recreation Area and Okefenokee Wildlife Refuge.

OKEFENOKEE-

For information, write:

FOLKSTON-CHARLTON COUNTY
CHAMBER OF COMMERCE
Folkston, Ga. 31537

Or call (912) 496-2536



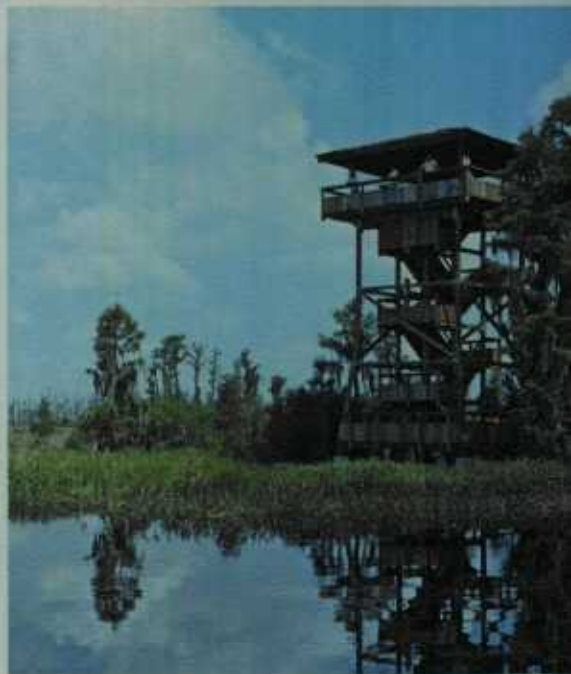
enchanted wilderness

Once part of the ocean floor, the great swamp was formed as an entrapped depression when the land around it rose out of the sea during the Pleistocene Age, one-half to one million years ago. Within its stable and protected environment, myriad forms of flora and fauna developed and flourished here over the centuries. As a national wildlife preserve, Okefenokee is dedicated as a perpetual haven for its natural inhabitants and the enjoyment of visitors.

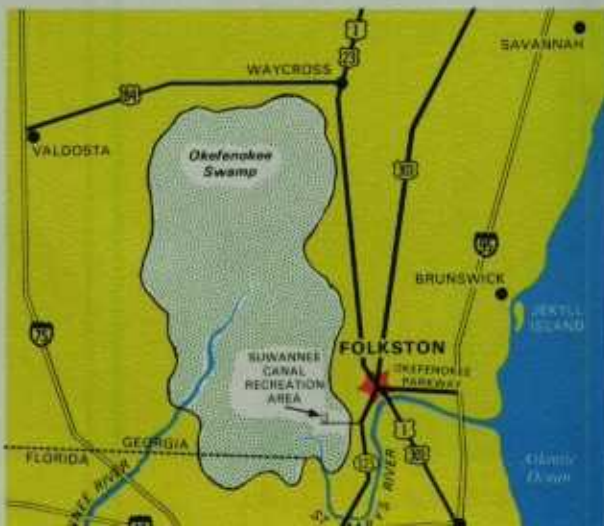
Okefenokee had magic connotations for the Indians who lived here and centuries ago gave it their name for "land of quivering earth," to describe the vast peat beds and "floating" islands, which shook under foot but supported great forest and entire tribal villages.

Today, Okefenokee still weaves a serene spell of "other world" quietude over those who immerse themselves in its vast silences, unbroken except for the lonely cry of a water bird, or a black bass taking its evening meal from the surface of a quiet pool.

Fed by innumerable springs, the dark waters of Okefenokee feed two great rivers — the famed Suwannee, flowing westward 270 miles to the Gulf of Mexico, and the St. Marys, which empties into the Atlantic 50 miles to the east.



TOWER WITH A VIEW (above) awaits visitors who follow the winding boardwalk (below) 4,000 feet through the swamp.



Wildlife

There is an abundance of wildlife to be seen and photographed. Over 389 wildlife species, including one of the nation's largest concentrations of American alligators, call Okefenokee home. White-tailed deer are common, and black bear may be seen occasionally. Bird life is often spectacular, with concentrations of white ibis and other wading birds. Florida sandhill cranes and the endangered red-cockaded woodpecker also may be seen.

FOR A UNIQUE



*Recreational
Experience...*

VISIT FABULOUS

OKEFENOKEE
NATIONAL WILDLIFE REFUGE



"Land of Trembling Earth"

NEAR

Folkston, Georgia

Access:

From Folkston, Georgia, on State Road 121, south 8 miles to Refuge entrance sign, then 4 miles west to Recreation Area. Major highways leading into Folkston include U.S. 1 and U.S. 301.

OKEFENOKEE NATIONAL WILDLIFE REFUGE
SUWANNEE CANAL RECREATION AREA

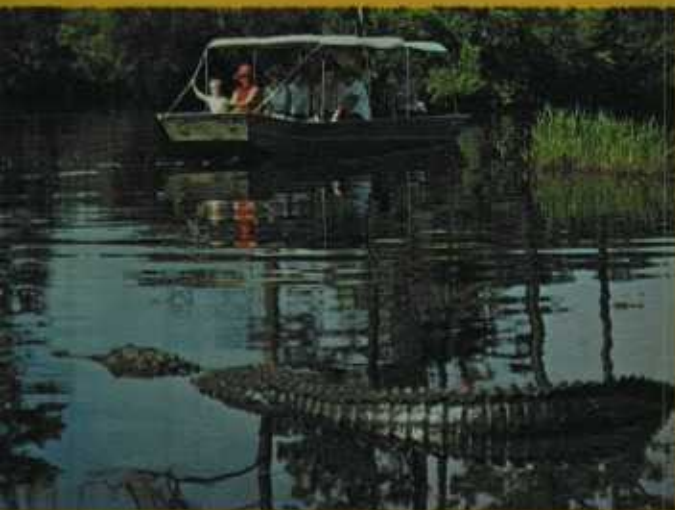
HARRY JOHNSON, Concessioner
ROUTE 2 • FOLKSTON, GA. 31537
PHONE (912) 496-7156

Administered by the

- *Wildlife Observation*
- *Canoeing*
- *Fishing*
- *Boating*
- *Hiking*
- *Guided Tours*

Suwannee Canal Recreation Area

Entrance to the Okefenokee National Wildlife Refuge is near Folkston, Georgia. There is an Information Center to help plan your visit. A Concession Center offers picnicking supplies, refreshments, souvenirs, fishing tackle, and rental equipment.

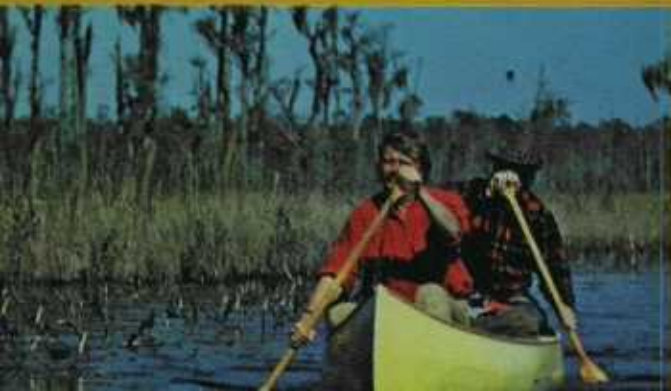
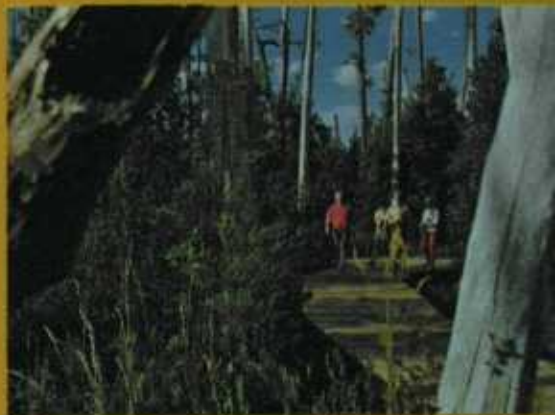


Guided Boat Tours

One- and two-hour trips into the swamp leave at frequent intervals daily. Four-hour guided boat tours are available by reservation.

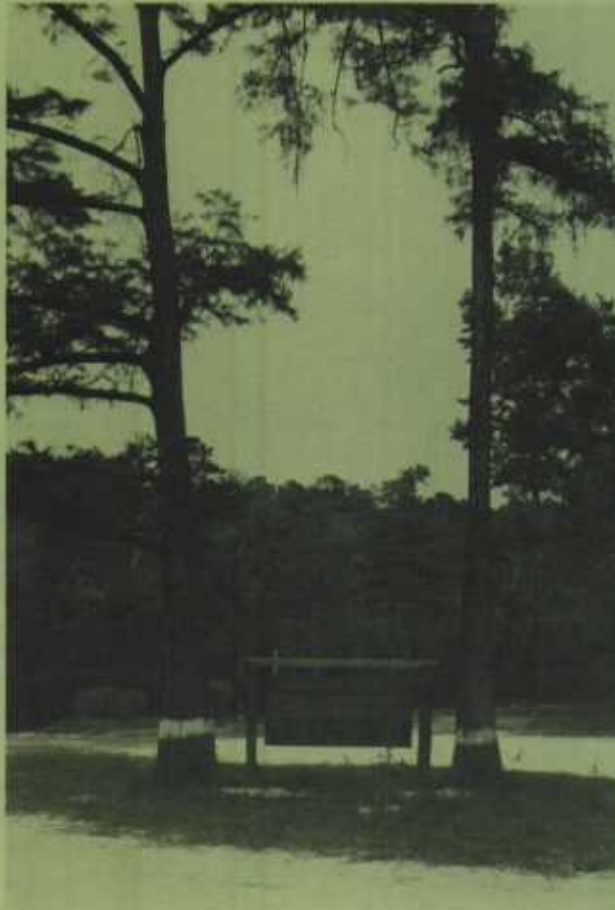
Swamp Walk

A 4 1/2-mile drive winds along the edge of the swamp, leading via a 4,000-foot boardwalk into the swamp to a 40-foot observation tower for a breathtaking view of Okefenokee. This is the Chesser Prairie and Seagrove Lake area. Several other walking trails along the drive offer additional opportunities for wildlife and scenic observation.



Boating

Boats with and without motors are available for travel on 28 miles of marked waterways for fishing, sight-seeing and wildlife observation. Canoes can be rented for day-use trips into the swamp anytime, and for overnight trips on a system of wilderness canoe trails, by pre-arranged reservation and permit.



Historically Speaking

Trader's Hill was established in the 18th Century and defended by a stockade garrisoned with U.S. Troops. More formally known as "Fort Alewife" in area history books, Trader's Hill was a refuge for settlers during the Indian Wars of the 1700s.

At the head of navigation on the St. Marys River, it was also one of the most important trade centers in the Southeast.

In 1854 it became the county seat of Charlton County and maintained this distinction until 1901, when a flourishing Folkston, built along the old S. F. & W. Railroad from Savannah to Jacksonville was made the new county seat.

Trader's Hill Park has been developed at the site of the old courthouse. Rich in history, the park is within hiking distance of the Okefenokee Swamp National Wildlife Refuge and the historic Suwannee Canal.



*For Further Information
Contact:*

**CHARLTON COUNTY
BOARD OF COMMISSIONERS
P.O. Box 98
Folkston, Georgia 31537**

Telephone 912/496-2289

Traders Hill Recreation Area — Phone 496-9992

Traders Hill

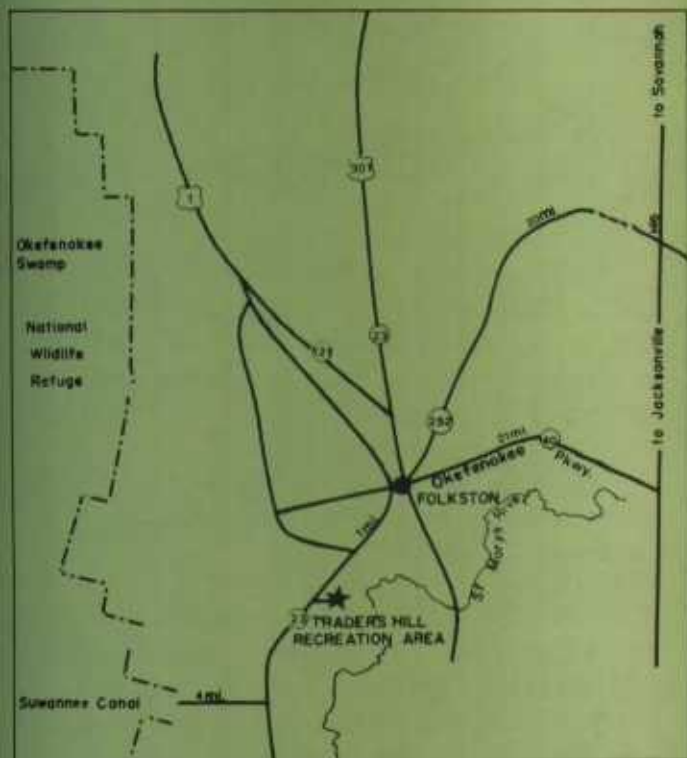
Recreation

Area



CHARLTON COUNTY,

GEORGIA



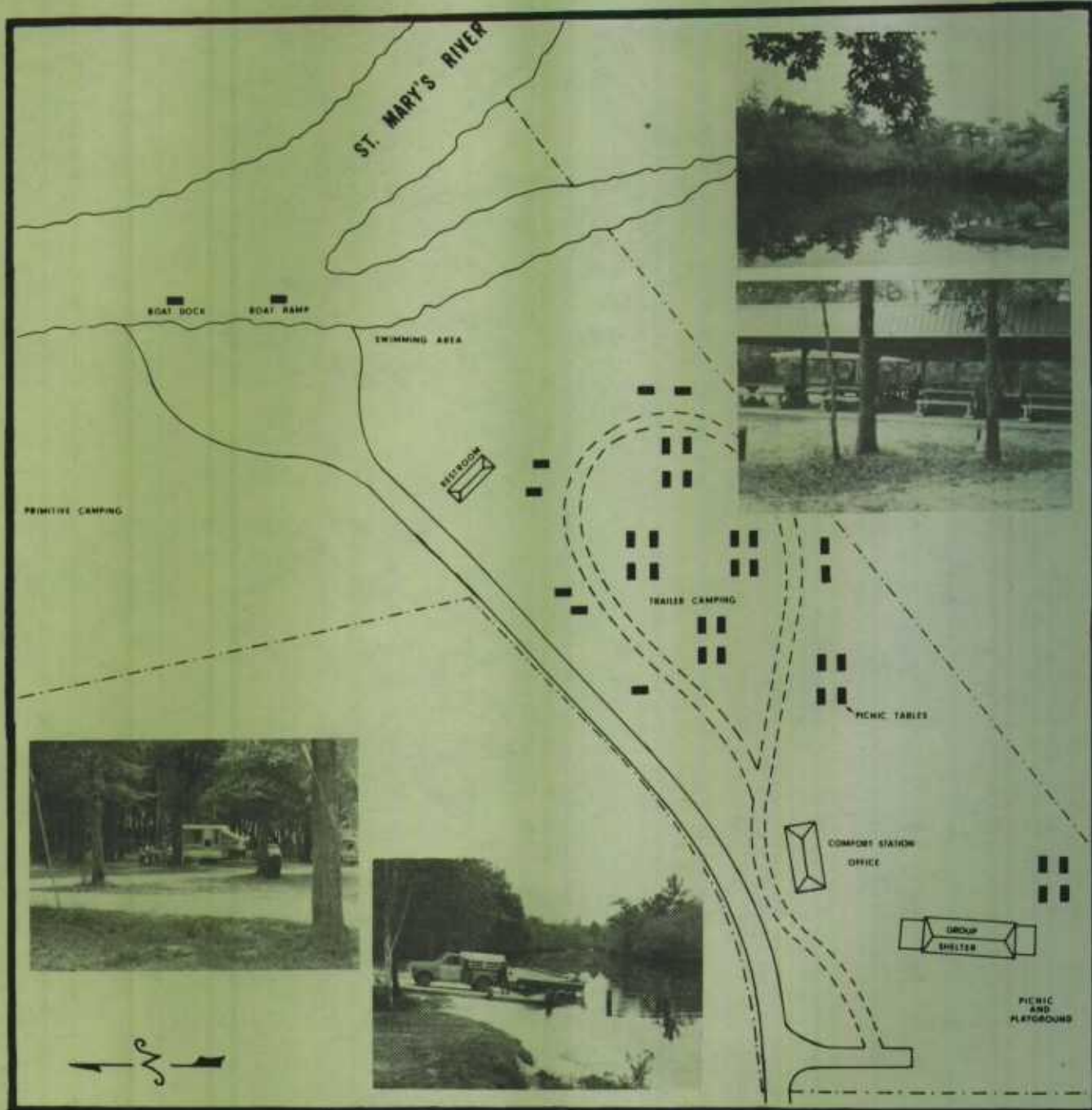
- CAMPING
- BOATING
- FISHING
- HIKING
- PICNICKING

There's No Better Place for Outdoor Recreation Than...

TRADERS HILL RECREATION AREA In Charlton County, Georgia

This scenic county park is built on 32 acres of land along the St. Mary's River only seven miles south of Folkston on Georgia Routes 23 and 121.

You'll find the finest in outdoor recreation facilities including camping, marine boat docking, a boat ramp, a fishing pier, picnic tables, barbecue pits, nature trails, a group picnic shelter, rest room facilities, a concession building, and parking areas.



Charlton County, located on Georgia's southern border, has a year-round outdoor climate. Abundant opportunities exist for family vacations and recreation. In addition to the local attractions which include the world-famous Okefenokee Swamp and the scenic St. Marys River (Georgia-Florida

border) Traders Hill Recreation Area is within commuting distance of seashore attractions on Georgia's Golden Coast. The Folkston-Charlton County Chamber of Commerce, P.O. Box 756, Folkston, Georgia 31537, will be happy to furnish more detailed information.

Okefenokee Swamp Park

Waycross, Georgia

Okefenokee Swamp Park

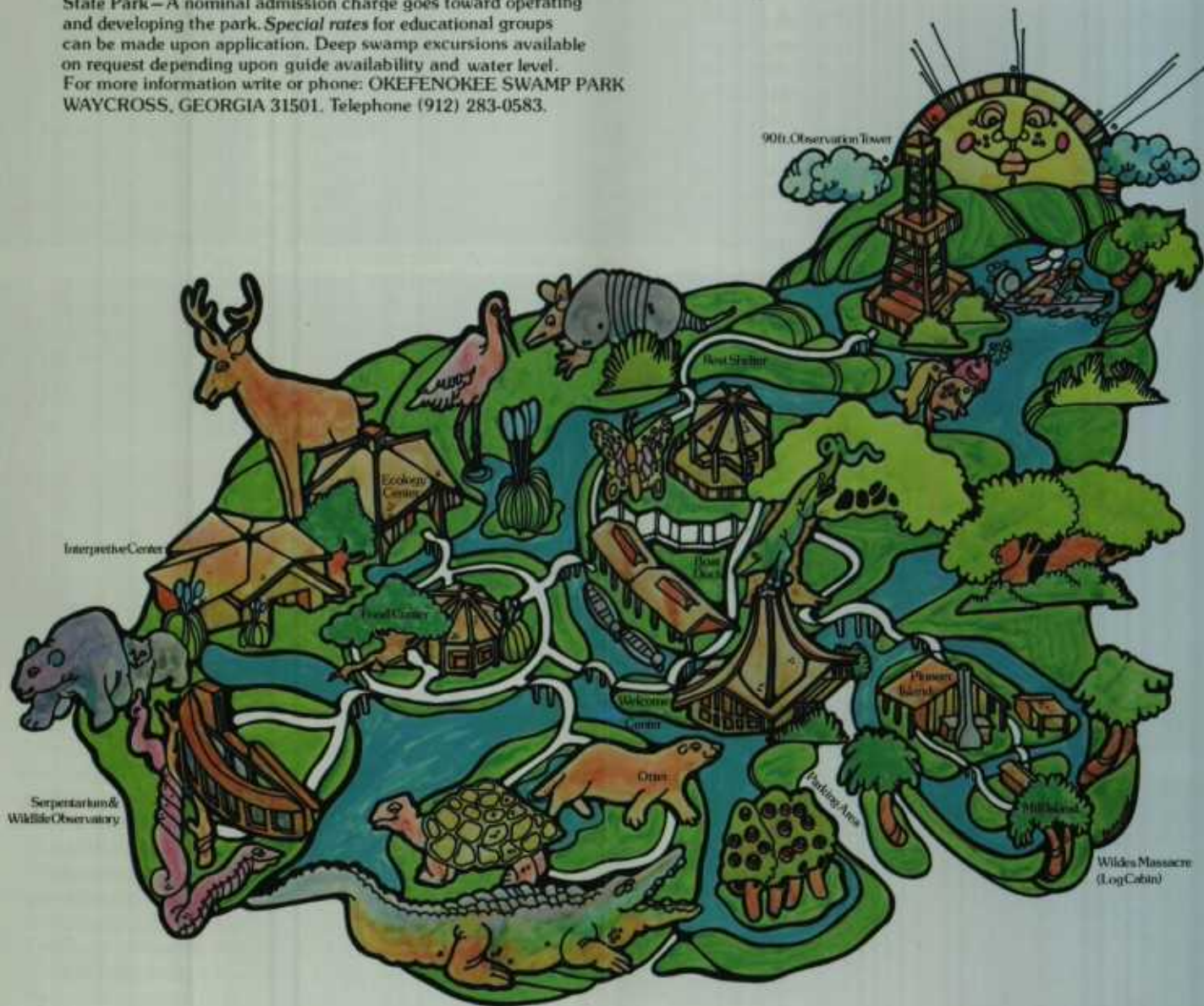
Waycross, Georgia



"Source Waters of Suwannee"

"Land of Trembling Earth"

THE OKEFENOKEE SWAMP PARK, a non-profit development operating under a long-term lease, now makes this awesome and mysterious swampland accessible to you where for many generations only stouthearted adventurers and trappers dared to go. The park is easy to reach from anywhere in the South, located 8 miles south of WAYCROSS, GEORGIA on highways U.S. #1 and U.S. #23. There are no night activities or overnight accommodations in the park, a wildlife sanctuary, but admirable facilities are available in the Waycross area, including camping facilities at nearby Laura S. Walker State Park—A nominal admission charge goes toward operating and developing the park. *Special rates* for educational groups can be made upon application. Deep swamp excursions available on request depending upon guide availability and water level. For more information write or phone: OKEFENOKEE SWAMP PARK WAYCROSS, GEORGIA 31501. Telephone (912) 283-0583.



Okefenokee provides protection for many forms of plant and animal life, some of which are bordering on extinction in a modern world. Mammals, reptiles and birds abound under a program of rigid federal protection in Okefenokee's expansive area of more than a half million acres. Alligators, otters, birds of prey, migratory birds of many species, wildcats,



bears, deer, many species of turtles and frogs, small furry animals and a wide variety of reptiles inhabit the land which the Indians called "Trembling Earth." Plant life is unbelievably abundant and Okefenokee has been appropriately called "America's greatest natural botanical





Recent developments in the Park, designed to provide historical and environmental background, include: a new Serpentarium and Wildlife Observatory, which features native bears in their natural environment and an interpretive



exhibit of Okefenokee reptiles, as well as a year-round lecture auditorium; an Interpretive Center highlighting the history and pertinent information on the "Land of Trembling Earth"; an Ecology

Center, spotlighting the flora and fauna of Okefenokee, with a live deer observatory. Pioneer Island with an original swamp homestead, demonstrating the self-sufficiency of pioneer swamp families and exhibiting rare artifacts and relics of the Okefenokee wilderness islands.

The Wonderworld of Okefenokee is a significant part of America's heritage, a beautifully preserved segment of what was here when America began. Headwaters of the Suwannee and St. Mary's Rivers, Okefenokee is a National Wildlife Refuge and an impressive recent addition to the National Wilderness System. Okefenokee Swamp Park is a convenient point of entry and a magnificent show-window for this natural wonderland. From the park lily-decked water trails, with their miraculously reflective waters mirroring overhanging beauty, lead to all points in this vast wilderness of islands, lakes, jungles, forests and prairies.

Okefenokee Swamp Park is a rare experience for every member of the family. The swamp itself, extravagantly beautiful, carries you back into the world's prehistory. Interpretative exhibits, lectures, wildlife shows, boat tours on original Indian Waterways, wilderness walkways, observation tower, Pioneer Island, native animals in their own habitat, all combine to weave a spell of pioneer American life. You witness in real life the place where primitive man ruled the wilds, where Indians hunted and fished, where early settlers sought



HOURS:

Spring and

Summer - 9-6:30 P.M.

Fall and Winter - 8-5 P.M.

peace and communed with nature. You see, for real, how nature still controls the environment and nature's balance assure the perpetuation of the flora and fauna and the swamp itself.

Since accessibility has been provided through Okefenokee Swamp Park, providing regulated visitation, the "Land of Trembling Earth" has become one of the most acclaimed wilderness areas in the United States. It has been the locale of many Hollywood motion pictures, and has been featured on television and radio, in newspapers and magazines, the Pogo comic strip, in documentary and fictional books, in song and art. Its glory is its pristine beauty, making it a photographer's dream.

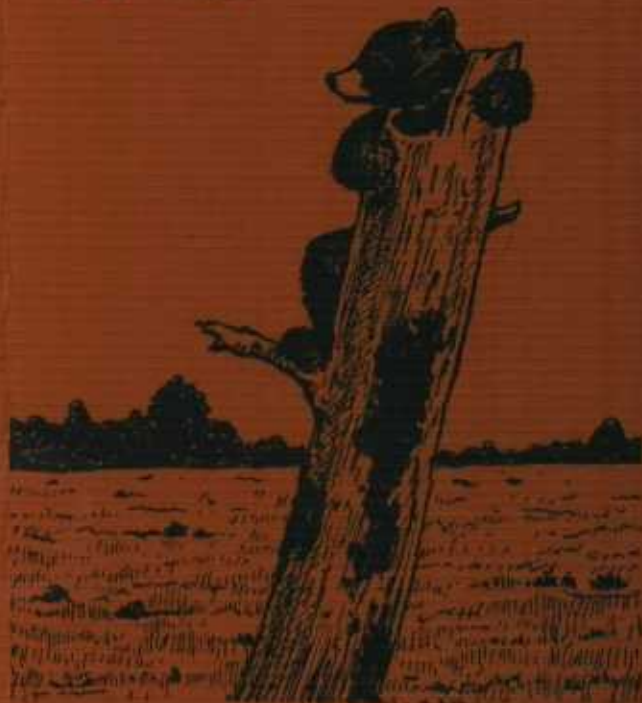
EASTERN COTTONTAIL (*Sylvilagus floridanus mollurus*). Common around clearings and in the more sparse pinewoods on the uplands surrounding the swamp and on some of the islands.

MARSH RABBIT (*Sylvilagus palustris palustris*). Fairly common on the swamp edge.

WHITE-TAILED DEER (*Odocoileus virginianus*). These deer are to be found on the upland entirely around the swamp and on the islands within the swamp. Occasionally they may be seen from the Deer Stand observation platform, and in time of low water they may be seen in the prairies.

ARMADILLO (*Dasypus novemcinctus mexicanus*). This unusual "armored" mammal was first seen on the refuge in 1963. Since then it has become more numerous and is commonly seen along roadways and trails.

MAMMALS of the



OKEFENOKEE
national
wildlife
refuge



U.S. DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
RF-441590-3-August, 1976

SOUTHERN FOX SQUIRREL (*Sciurus niger niger*). Uncommon in the pine forests surrounding the swamp.

FLORIDA FLYING SQUIRREL (*Glaucomys volans quereoti*). This species is rarely seen but is probably fairly common. It has been collected on Floyd's and Billy's Islands and Chesser Island.

GEORGIA POCKET GOPHER (*Geomys pinetis pinetis*). Uncommon on dry, sandy sites on the east side of the swamp.

CAROLINA BEAVER (*Castor canadensis carolinensis*). The first record of beavers actually in the swamp was in 1969. Apparently they have disappeared since then, probably because of alligators.

COTTON MOUSE (*Peromyscus gossypinus gossypinus*). Common throughout the area.

SOUTHERN GOLDEN MOUSE (*Peromyscus nuttalli aureolus*). This species is probably rare. It has been found in the cypress bays and in hammocks on the islands.

SWAMP RICE RAT (*Oryzomys palustris palustris*). A fairly common mammal throughout the swamp.

HISPID COTTON RAT (*Sigmodon hispidus hispidus*). A common mammal in the pine woods and old fields on the upland around the swamp.

FLORIDA WOOD RAT (*Neotoma floridana floridana*). Fairly common throughout the swamp and in the hammocks on the upland.

ROUND-TAILED MUSKRAT (*Neofiber albigrescens*). Common in the prairies.

HOUSE MOUSE (*Mus musculus musculus*). Formerly common around habitations but now that few people live within the swamp, it has probably disappeared from the area. Very likely it is still common around human habitations in the vicinity of the swamp.

NORWAY RAT (*Rattus norvegicus*). Like the above species, this mammal has probably disappeared from the area with the cessation of human habitation.

BLACK RAT (*Rattus rattus rattus*). This and the following subspecies were the common barn rats when farming was practiced on some of the islands within the swamp. It probably occurs now at farmsteads in the vicinity of the swamp but not on the refuge.

ROOF RAT (*Rattus rattus alexandrinus*). See above.



The varied habitat of Okefenokee Swamp forest and prairie, of swamp edge and of moist and dry upland affords a home for most mammalian species that are known to the southeastern coastal plain.

Most mammals are night prowlers and difficult to observe. Sometimes their tracks, or other signs of activity, are all that is visible to remind us that they do exist. A few kinds such as squirrels, otters, deer, rabbits, bobcats and bears are often or sometimes seen during daytime. However, early morning and late afternoon are the best times to observe mammals.

The following list includes 42 species that now live or have recently lived in, or in the immediate vicinity of, Okefenokee Swamp. This list is based upon specimens and substantiated evidence collected by Dr. Francis Harper and refuge personnel. Most of the species listed are supported by specimens that are preserved in the Cornell University Museum and in the U.S. National Museum.

Mammals to look for in or near Okefenokee are:

FLORIDA OPOSSUM (*Didelphis marsupialis pigra*). Common on the swamp edge and on the islands within the swamp. A night prowler, "Pogo" is often seen by campers at Stephen C. Foster State Park.

STAR-NOSED MOLE (*Condylura cristata*). Apparently rare. Has been collected in the swamp near Mixon's Ferry and on Chesser Island.

FLORIDA MOLE (*Scalopus aquaticus australis*). Generally distributed on the upland adjacent to the swamp and has been found on some of the islands within the swamp.

LEAST SHREW (*Cryptotis parva parva*). Rarely seen but probably fairly common. Specimens have been collected on several of the islands, on the swamp edge and in the pine woods around the swamp.

CAROLINA SHORT-TAILED SHREW (*Blarina brevicauda carolinensis*). A specimen was collected on Floyd's Island June 12, 1921.

EVENING BAT (*Nycticeius humeralis*). One of the most common bats of the Okefenokee. This and other bats are seen at dusk on warm nights in search of flying insects.

GEORGIAN BAT (*Pipistrellus subflavus subflavus*). A fairly common species in the area.

BIG BROWN BAT (*Eptesicus fuscus fuscus*). An uncommon species in the area.

NORTHERN RED BAT (*Lasturus borealis borealis*). An uncommon species in the area.

SEMINOLE RED BAT (*Lasturus borealis seminolus*). A common bat of the Okefenokee.

FLORIDA YELLOW BAT (*Dasypterus floridanus*). Apparently a rare species in the area. Two specimens were collected at King's Canal.

RAFINESQUE'S BIG-EARED BAT (*Corynorhinus rafinesquii*). A rather uncommon species in the area.

FREE-TAILED BAT (*Tadarida brasiliensis cynocephala*). An uncommon species in this area although it has been collected at Camp Cornelia.

FLORIDA BLACK BEAR (*Ursus floridanus*). Bears range throughout the refuge. While they are rarely seen, their signs are found in all habitats.

FLORIDA RACCOON (*Procyon lotor elucus*). The most abundant large mammal on the refuge. It is found in all habitats but is most numerous on the swamp edge. They are commonly seen at the Stephen C. Foster State Park camping area and occasionally along boat trails.

LONG-TAILED WEASEL (*Mustela frenata olivacea*). This species is probably more common than the few observations would indicate. Specimens have been collected on Billy's Island and on Chesser Island.

FLORIDA RIVER OTTER (*Lutra canadensis vega*). Occasionally observed along the water courses, especially during the winter.

FLORIDA STRIPED SKUNK (*Mephitis mephitis elongata*). This species is generally distributed on the upland surrounding the swamp and is found occasionally on the islands.

RED FOX (*Vulpes fulva fulva*). This species is rare but occurs occasionally on the upland in the vicinity of the swamp.

FLORIDA GRAY FOX (*Urocyon cinereoargenteus floridanus*). Fairly common on the upland around the swamp.

RED WOLF (*Canis niger niger*). Formerly this was the species of wolf native to this area. It is believed not to be present here now.

FLORIDA BOBCAT (*Lynx rufus floridanus*). Common throughout the swamp and on the surrounding upland. Occasionally seen along the nature drive.

FLORIDA PUMA (*Felis oncolor coryi*). Apparently this species was never more than of rare occurrence in the vicinity of the swamp.

SOUTHERN GRAY SQUIRREL (*Sciurus carolinensis carolinensis*). Abundant in the blackgum-bay forests in the swamp and in the oak woodlands on the upland.

	S	S	F	W
House Sparrow*	a	a	a	a
Bobolink	r		r	
Eastern Meadowlark*	c	c	c	c
Red-winged Blackbird*	c	c	c	c
Orchard Oriole*	u	u	u	
Northern Oriole	r		r	r
Rusty Blackbird	u		u	u
Brewer's Blackbird	o		o	o
Boat-tailed Grackle	r		r	r
Common Grackle*	c	c	c	c
Brown-headed Cowbird	o	o	o	o
Scarlet Tanager	r	r		
Summer Tanager*	u	u	u	
Cardinal*	c	c	c	c
Rose-breasted Grosbeak	r		r	
Blue Grosbeak	r	r	r	r
Indigo Bunting	u	o	u	
Painted Bunting	o			
Purple Finch	u		u	u
Pine Siskin	r		r	r
American Goldfinch	c		c	c
Rufous-sided Towhee	c	c	c	c
Savannah Sparrow	u		u	u
Grasshopper Sparrow	o		o	o
Le Conte's Sparrow	r		r	r
Henslow's Sparrow	o		o	o
Vesper Sparrow	u		u	u
Bachman's Sparrow*	c	c	c	c
Dark-eyed Junco	r		r	r
Chipping Sparrow	u		u	u
Field Sparrow	u		u	u
White-throated Sparrow	c		c	c
Fox Sparrow	u		u	u
Swamp Sparrow	c		c	c
Song Sparrow	c		c	c

These additional 23 species are of very rare or accidental occurrence:

White Pelican	Arctic Tern
Rosate Spoonbill	Burn Owl
Whistling Swan	Ivory-billed Woodpecker (formerly)
Snow Goose	Gray Kingbird
Vermilion Flycatcher	Western Kingbird
European Wigeon	Bachman's Warbler
Golden Eagle	Lark Sparrow
Limkin	Tree Sparrow
Semipalmated Plover	Connecticut Warbler
Whimbrel	Clapper Rail
Laughing Gull	
Forster's Tern	

OKEFENOKEE SWAMP, a huge, shallow, peat-filled depression of flooded and semi-flooded forests and prairies, located in southeastern Georgia and a small part of adjacent Florida, is one of the most primitive wilderness areas in the Nation. This swamp covers approximately 435,000 acres. About 377,528 acres of this area with 12,000 acres of peripheral upland are included in the *Okefenokee National Wildlife Refuge*.

Most of the swamp is covered with cypress, black gum, and bay forests. About 15 percent is flooded or semi-flooded prairie, and islands make up another 6 percent. The prairies are dotted with little lakes and ponds and various sized clumps of trees and shrubs, locally called "houses." The peripheral upland and the islands within the swamp are forested with pine interspersed with hardwood hammocks.

This diversified habitat is attractive to a wide variety of birds. The following list contains 210 species recorded from the swamp and surrounding uplands by visiting ornithologists and refuge personnel. Those species denoted with an * nest in the area, or have been known to do so. Abundance symbols are coded as follows:

S—March-May
S—June-August
F—September-November
W—December-February

a—abundant
c—common
u—uncommon
o—occasional
r—rare



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

RF 4356500-2
May, 1975



BIRDS OF OKEFENOKEE



A CHECK-LIST OF BIRDS LIVING
ON THE OKEFENOKEE NATIONAL WILDLIFE REFUGE

	S	S	F	W
Common Loon	r		r	r
Horned Grebe	u		u	u
Pied-billed Grebe	c	r	c	c
Double-crested Cormorant	o	r	o	o
Anhinga*	c	c	c	c
Great Blue Heron*	c	c	c	c
Green Heron*	c	c	c	o
Little Blue Heron*	c	c	c	c
Cattle Egret*	c	c	c	c
Great Egret*	c	c	c	c
Snowy Egret*	u	u	u	o
Louisiana Heron*	o	o	o	o
Black-crowned Night Heron	c	o	c	c
Yellow-crowned Night Heron	u	u	u	u
Least Bittern*	o	o	r	
American Bittern	u	u	u	c
Wood Stork*	o	c	c	o
Glossy Ibis	r		r	r
White Ibis*	c	o	a	c
Canada Goose	o		o	o
Mallard	c		c	c
Black Duck	c		c	c
Godwall	o		o	o
Pintail	u		u	u
Green-winged Teal	c		c	c
Blue-winged Teal	u	u	u	
American Wigeon	u		u	u
Northern Shoveler	u		u	u
Wood Duck*	c	c	c	c
Redhead	o		o	o
Ring-necked Duck	c		c	c
Canvasback	r		r	r
Greater Scaup	r		r	r
Lesser Scaup	u		u	u
Common Goldeneye	r		r	r
Bufflehead	r		r	r
Ruddy Duck	o		o	o
Hooded Merganser*	c	r	c	c
Red-breasted Merganser	r		r	r
Turkey Vulture*	c	c	c	c
Black Vulture*	c	c	c	c
Swallow-tailed Kite	r	r	r	r
Sharp-shinned Hawk	r		r	r
Cooper's Hawk	o	r	o	o
Red-tailed Hawk*	u	r	u	u
Red-shouldered Hawk*	c	c	c	c
Broad-winged Hawk	o		o	
Bald Eagle	r		r	r
Marsh Hawk	o		o	o
Osprey*	u	u	r	u
Peregrine Falcon	r		r	r
Merlin	r		r	r
American Kestrel*	c	o	c	c
Bobwhite*	c	c	c	c
Turkey*	r	r	r	r
Sandhill Crane*	c	c	c	c
King Rail*	r	r	r	r
Virginia Rail	r		r	
Sora	r		r	

	S	S	F	W
Purple Gallinule*	u	u	u	u
Common Gallinule*	u	u	u	u
American Coot	c		c	c
Killdeer	c		c	c
American Woodcock	u	r	u	u
Common Snipe	c		c	c
Spotted Sandpiper	u		u	
Solitary Sandpiper	o		o	
Willet	r		r	
Greater Yellowlegs	u		u	
Lesser Yellowlegs	u		u	
Least Sandpiper	o	o	o	
Dunlin	r		r	
Dowitcher (species?)	o		o	o
Semipalmated Sandpiper	o	o	o	
Western Sandpiper	r		r	r
Sanderling	o		o	o
Herring Gull	r	r	r	r
Black Tern	r	r	r	
Mourning Dove*	c	c	c	c
Ground Dove*	c	c	c	c
Yellow-billed Cuckoo*	c	c	c	
Black-billed Cuckoo	r		r	
Screech Owl*	u	u	u	u
Great Horned Owl	u	u	u	u
Barred Owl*	c	c	c	c
Chuck-will's-widow*	c	c	c	
Whip-poor-will	o		o	r
Common Nighthawk*	c	c	c	
Chimney Swift	c	c	c	
Ruby-throated Hummingbird*	u	u	u	
Belted Kingfisher*	c	u	c	c
Common Flicker*	c	c	c	c
Pileated Woodpecker*	c	c	c	c
Red-bellied Woodpecker*	c	c	c	c
Red-headed Woodpecker*	c	u	c	u
Yellow-bellied Sapsucker	c		c	c
Hairy Woodpecker*	o	o	o	o
Downy Woodpecker*	c	c	c	c
Red-cockaded Woodpecker*	u	u	u	u
Eastern Kingbird*	o	c	c	
Great Crested Flycatcher*	c	c	c	
Eastern Phoebe	c		c	c
Acadian Flycatcher*	u	u	u	
Eastern Wood Pewee*	c	c	c	
Tree Swallow	c		o	c
Barn Swallow	c	c	c	c
Purple Martin*	r	u	o	o
Blue Jay*	c	c	c	c
Common Crow*	o	o	o	o
Fish Crow†	c	c	c	c
Carolina Chickadee*	u	u	u	u
Tufted Titmouse*	c	c	c	c
White-breasted Nuthatch	r	r	r	r
Red-breasted Nuthatch	r		r	r
Brown-headed Nuthatch*	c	c	c	c
Brown Creeper	o		o	o

	S	S	F	W
House Wren	u		u	u
Winter Wren	u		u	u
Bewick's Wren	r		r	r
Carolina Wren*	c	c	c	c
Long-billed Marsh Wren	o		o	o
Short-billed Marsh Wren	u		u	u
Mockingbird*	c	c	c	c
Catbird*	c	c	c	c
Brown Thrasher*	c	c	c	c
American Robin	c		o	o
Wood Thrush*	u	u	u	u
Hermit Thrush	u		u	u
Swainson's Thrush	r		r	
Gray-cheeked Thrush	r		r	
Veery	u		u	u
Eastern Bluebird*	c	c	c	c
Blue-gray Gnatcatcher*	u	u	u	o
Golden-crowned Kinglet	u		u	o
Ruby-crowned Kinglet	c		c	c
Water Pipit	o		o	o
Cedar Waxwing	c		u	c
Loggerhead Shrike*	c	c	c	c
Starling	o	o	o	o
White-eyed Vireo*	c	c	c	u
Yellow-throated Vireo*	r	r	r	
Solitary Vireo	o		o	o
Red-eyed Vireo*	u	u	u	
Black-and-white Warbler	u	o	u	o
Prothonotary Warbler*	c	c	c	
Swainson's Warbler*	r	r	r	
Warm-eating Warbler	u		u	r
Golden-winged Warbler	o		o	
Blue-winged Warbler	o		o	
Orange-crowned Warbler	u		u	u
Northern Parula Warbler*	c	c	c	o
Yellow Warbler	u		u	
Magnolia Warbler	r		u	
Cape May Warbler	u		u	
Black-throated Blue Warbler	u		u	
Yellow-rumped Warbler	o		o	o
Black-throated Green Warbler	r		r	
Cerulean Warbler	r		r	
Blackburnian Warbler	u		u	
Yellow-throated Warbler*	c	c	c	o
Chestnut-sided Warbler			r	
Blackpoll Warbler	u		u	
Pine Warbler*	c	u	c	c
Prairie Warbler	u		u	o
Palm Warbler	c		u	c
Ovenbird	u		u	
Northern Waterthrush	r		r	
Louisiana Waterthrush	o	r	o	
Kentucky Warbler	o		o	
Connecticut Warbler	o		o	
Common Yellowthroat*	c	u	c	c
Yellow-breasted Chat	r		r	
Hooded Warbler*	u		u	u
Canada Warbler	r		r	
American Redstart	c	r	c	

NOTE

Names of reptiles and amphibians taken from "A Field Guide to Reptiles and Amphibians of Eastern North America" by Roger Conant (Houghton Mifflin Company, Boston 1958). Names of fishes taken from "A List of Common and Scientific Names of Fishes from the United States and Canada" (American Fisheries Society, Box 483, McLean, Virginia, 1960).

Okefenokee Swamp, a 412,000-acre peat-filled bog in Ware, Charlton, and Clinch Counties, Georgia, and Baker County, Florida, is one of the nation's great unspoiled areas. Although a considerable amount of timber has been harvested here in past years, most of this great swamp is still little different from what it was when first seen by white men. About four-fifths of the swamp is included in the Okefenokee National Wildlife Refuge, which is administered by the Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, in the Department of the Interior.

Except for some fifty islands which total about 25,000 acres, Okefenokee Swamp is usually shallowly flooded. Most of the flooded area is more or less densely forested with cypress, blackgum, bay, and maple, with an understory and interspersal of a variety of heaths, smilax, titi, and cassena. About 60,000 acres is flooded marshland or "prairie," which is covered principally with waterlilies, neverwet, pipewort, ferns, maidencane, and a variety of sedges and grasses.

Open water areas are the water courses, the prairie lakes, smaller prairie ponds known as "gator holes," the twelve-mile-long Suwannee Canal which was dug in 1891-2, and the borrow pit of the Suwannee River Sill, which was constructed in 1958.

The islands and the adjacent upland on the periphery of the swamp are usually covered by pine forests.

This variety of wooded swamp, prairies, lakes, water courses, islands, and pine barrens supports a varied fauna. The following list of reptiles, amphibians, and fishes is based on specimens collected or reliably reported.

Most of the species listed are supported by specimens which are now in the United States National Museum or in the museums of Cornell University and the University of Michigan.

For further information write Refuge Manager, Okefenokee National Wildlife Refuge, Box 117, Waycross, Georgia 31501.



NOTES



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

Refuge Leaflet 405-R1
June 1972

REPTILES AMPHIBIANS AND FISHES OF OKEFENOKEE



A CHECK LIST OF ANIMALS LIVING
IN AND AROUND THE OKEFENOKEE
SWAMP ON THE OKEFENOKEE
NATIONAL WILDLIFE REFUGE

REPTILES

Crocodylians

American Alligator

Alligator mississippiensis

Turtles

Snapping Turtles
Alligator Snapping Turtle
Loggerhead Musk Turtle
Striped Mud Turtle
Eastern Mud Turtle
Spotted Turtle
Eastern Box Turtle
Gulf Coast Box Turtle
Yellow-bellied Turtle
Florida Cooter
Eastern Chicken Turtle
Gopher Tortoise
Florida Softshell Turtle

Chelydra serpentina serpentina
Macrocllemys temminckii
Sternotherus minor minor
Kinosternon bauri palmarum
Kinosternon subrubrum subrubrum
Clemmys guttata
Terrapene carolina carolina
Terrapene carolina major
Pseudemys scripta scripta
Pseudemys floridana floridana
Dierochelys reticularia reticularia
Gopherus polyphemus
Trionyx ferox

Lizards

Green Anole
Southern Fence Lizard
Six-lined Racerunner
Ground Skink
Five-lined Skink
Broad-headed Skink
Southeastern Five-lined Skink
Georgia Red-tailed Skink
Eastern Glass Snake
Island Glass Snake

Anolis carolinensis carolinensis
Sceloporus undulatus undulatus
Caenidaphorus sexlineatus
Lygosoma laterale
Eumeces fasciatus
Eumeces laticeps
Eumeces inexpectatus
Eumeces egregius similis
Ophisaurus ventralis
Ophisaurus compressus

Snakes

Florida Green Water Snake
Brown Water Snake
Red-bellied Water Snake
Banded Water Snake
Florida Water Snake
Glossy Water Snake
North Florida Swamp Snake
Florida Brown Snake
Florida Red-bellied Snake
Eastern Garter Snake
Southern Ribbon Snake
Rough Earth Snake
Eastern Earth Snake
Striped Swamp Snake
Eastern Hognose Snake
Southern Ringneck Snake
Rainbow Snake
Mud Snake
Southern Black Racer
Eastern Coachwhip
Rough Green Snake
Eastern Indigo Snake
Corn Snake
Yellow Rat Snake
Gray Rat Snake
Florida Pine Snake
Eastern Kingsnake
Scarlet Kingsnake
Scarlet Snake

Natrix cyclopiion floridana
Natrix taxispilota
Natrix erythrogaster erythrogaster
Natrix sipedon fasciata
Natrix sipedon pictiventris
Natrix rigida
Seminatrix pygocoe pygocoe
Storeria dekayi victa
Storeria occipitomaculata obscura
Thamnophis sirtalis sirtalis
Thamnophis sauritus sackeni
Haldea striatula
Haldea valerieae valerieae**
Liodytes ollenii
Heterodon platyrhinos
Diadophis punctatus punctatus
Abaster erythrogrammus**
Farancia abacura
Coluber constrictor priapus
Masticophis flagellum flagellum
Opheodrys aestivus
Drymarchon corais couperi
Elophie guttata guttata
Elophie obsoleta quadrivittata
Elophie obsoleta spilioides
Pituophis melanoleucus mugitus
Lampropeltis getulus getulus
Lampropeltis dollata dollata
Cemophora coccinea

Eastern Coral Snake
Eastern Cottonmouth
Dusky Pigmy Rattlesnake
Conebrake Rattlesnake
Eastern Diamondback Rattlesnake

Micrurus fulvius fulvius
Agkistrodon piscivorus piscivorus
Sistrurus miliarius barbouri
Crotalus horridus ericadatus
Crotalus adamanteus

AMPHIBIANS

Salamanders

Greater Siren
Eastern Lesser Siren
Broad-striped Dwarf Siren
Two-toed Amphiuma
Frosted Flatwoods Salamander
Central Newt
Striped Newt
Southern Dusky Salamander
Slimy Salamander
Rusty Mud Salamander
Dwarf Salamander

Siren lacertina
Siren intermedia intermedia
Pseudobranchius striatus striatus
Amphiuma means means
Ambystoma cingulatum cingulatum
Diemictylus viridescens louisianensis
Diemictylus parvirostris
Desmognathus fuscus auriculatus
Plethodon glutinosus glutinosus
Pseudotriton montanus floridanus
Manculus quadridigitus

Frogs and Toads

Eastern Spadefoot Toad
Southern Toad
Oak Toad
Southern Cricket Frog
Southern Spring Peeper
Green Treefrog
Pine Woods Treefrog
Squirrel Treefrog
Eastern Gray Treefrog
Barking Treefrog
Little Grass Frog
Southern Chorus Frog
Ornate Chorus Frog
Eastern Narrow-mouthed Frog
Bullfrog
River Frog
Pig Frog
Carpenter Frog
Bronze Frog
Southern Leopard Frog
Florida Gopher Frog

Scaphiopus holbrooki
Bufo terrestris
Bufo quercicus
Acris gryllus gryllus
Hyla crucifer barttramiana
Hyla cinerea cinerea
Hyla femoralis
Hyla squirella
Hyla versicolor versicolor**
Hyla gratiosa
Hyla ocellaris
Pseudacris nigrita nigrita
Pseudacris ornata**
Gastrophryne carolinensis
Rana catesbeiana**
Rana heckscheri
Rana gryllus
Rana virgatipes
Rana clamitans clamitans
Rana pipiens phenocopeata
Rana areolata oesopus



FISHES

Florida Gar
Bowfin
Eastern Mudminnow
Redfin Pickerel
Chain Pickerel
Lake Chubsucker
Spotted Sucker
Yellow Bullhead
Brown Bullhead
Tadpole Madtom
American Eel
Golden Topminnow
Banded Topminnow
Shearhead Topminnow
Mosquitofish
Pygmy Killifish
Pirate Perch
Mud Sunfish
Flier
Warmouth

Everglades Pygmy Sunfish
Okaloosa Pygmy Sunfish
Blackbanded Sunfish
Bluespotted Sunfish
Banded Sunfish
Lepomis auritus
Bluetail
Dollar Sunfish
Spotted Sunfish
Largemouth Bass
Black Crappie
Scalyhead Darter
Swamp Darter
Brook Silverside

Lepomis platyrhynchus
Anisba calva
Umbrina pygmaea
Esoc americanus americanus
Esoc niger
Emyrana luceta
Myxetris melanops
Ictalurus natalis
Ictalurus nebulosus
Noturus gyrinus
Anguilla rostrata
Fundulus chrysotus
Fundulus cingulatus
Fundulus notii
Gambusia affinis
Lepilucania ommata
Aphredoderus sayanus
Acanthichthys pantalis
Centrarchus macropterus
Chenobryttus gulosus
Elassoma evergladei
Elassoma okaloosae
Enneacanthus chaetodon
Enneacanthus gloriosus
Enneacanthus obesus
Lepomis auritus
Lepomis macrochirus
Lepomis marginatus
Lepomis punctatus
Micropterus salmoides
Pomoxis nigromaculatus
Etheostoma bartratti
Etheostoma fulvum
Labeocheilus sicculus



Okefenokee

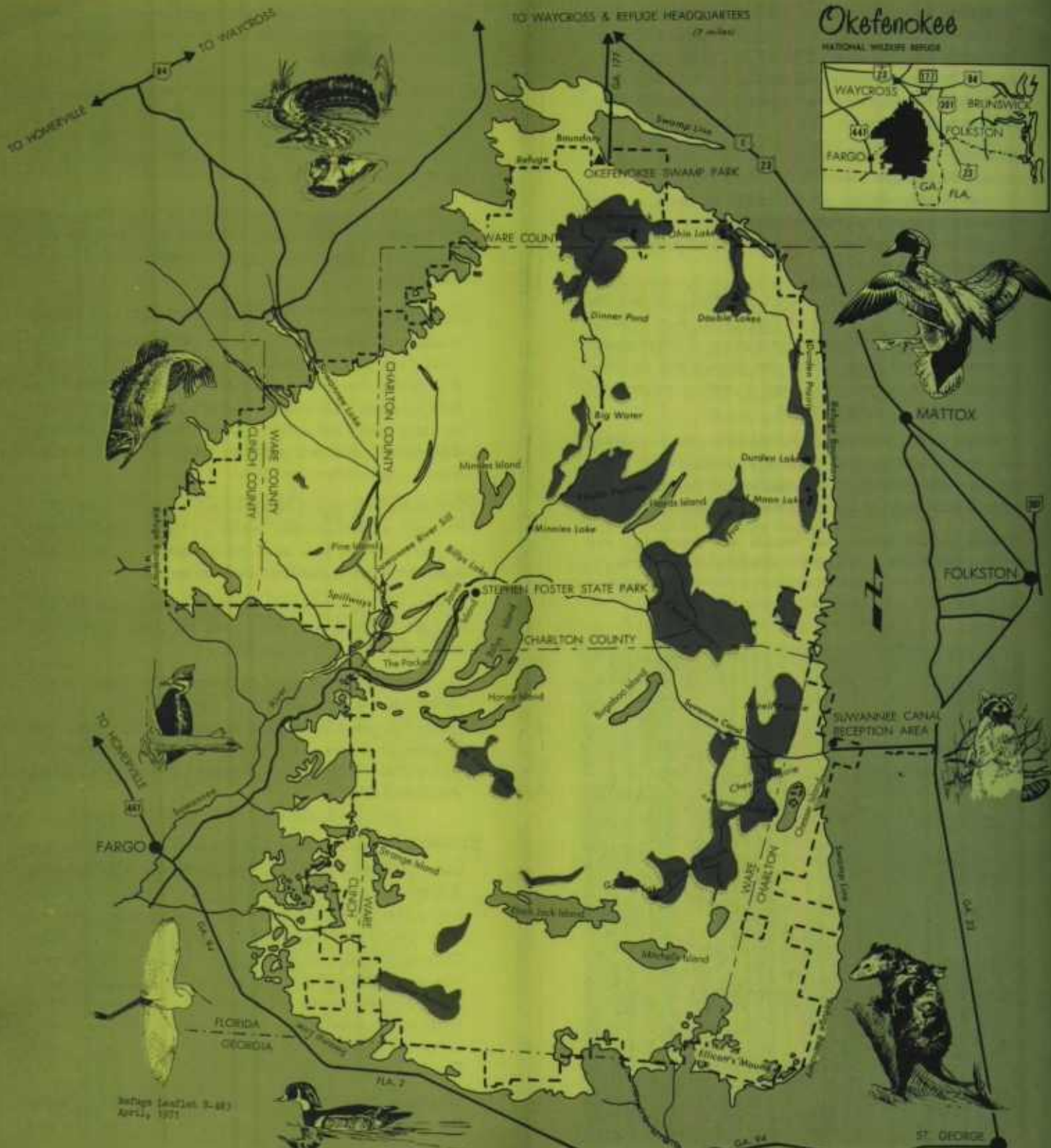
National Wildlife Refuge



As you travel through this country, you may see the sign of the flying goose—emblem of the National Wildlife Refuges. Wherever you meet this sign, respect it, for it means that those lands and waters have been dedicated to preserving as much of our native wildlife as can be retained along with our modern civilization.

Okefenokee

NATIONAL WILDLIFE REFUGE



TO WAYCROSS & REFUGE HEADQUARTERS
(7 miles)

TO WAYCROSS
TO WAREVILLE

TO WAREVILLE
FARGO

MATTOX

FOLKSTON

SWANEE CANAL
RECEPTION AREA

Design Leaflet 3-683
April, 1971

GA. 94

ST. GEORGE



Canoeing may also be enjoyed in Okefenokee. Six wilderness trails permit one- to six-day trips through the swamp. More canoeing information may be obtained by contacting the refuge manager.

REGULATIONS

Travel on the refuge is restricted to areas designated by the officer in charge. All visitors should register with the concessionaire before leaving the boat dock to enter refuge waters.

Visitors must be accompanied by a licensed guide when going into the more remote parts of the swamp.

Visitors are allowed to be on the refuge only during daylight hours, except where specified overnight accommodations are available.

Fires are prohibited on the refuge except in specially designated places.

Firearms are not allowed on the refuge.

Outboard motors larger than 10 horsepower are prohibited. Each occupant of a boat is required to have a Coast Guard approved life preserver with him.

Fishing is permitted in accordance with Georgia State fishing laws, except that no live fish may be used as bait.

Swimming is not permitted in refuge waters.

Pets must be kept in cars or on a leash not exceeding 6 feet in length. They are not permitted in boats.

Molestation or destruction of plants and animals on the refuge is prohibited.

OKEFENOKEE SWAMP, in southeastern Georgia near the Florida boundary, is one of the oldest and most primitive swamps in America. It extends about 38 miles from north to south and about 25 miles across at its widest part and contains some 412,000 acres. Okefenokee National Wildlife Refuge, established in 1937, occupies over nine-tenths of this fascinating region of water, woods, and wildlife.

Okefenokee is actually a vast peat bog, unique in geologic origin and history, with many unusual forms of animal and plant life. Once a part of the ocean, it is now more than a hundred feet above sea level.

The variety of life, as seen by a visitor to Okefenokee, changes throughout the day. Except during the quietness of noonday, the squealing cries of wood ducks and the discordant squawks of herons and egrets are heard repeatedly as you move along the glassy waterways. High overhead a turkey vulture may be soaring, while a flock of white ibis glides at tree top level. The persistent song of the Carolina wren and hammering of woodpeckers on shells of dead trees are most evident while you listen for rolling guttural notes of the Florida sandhill crane. In the spring the bellowing of the old bull alligators furnishes a background for amazing frog choruses.

In the tangled forest of cypress, bay, and gum — with hanging streamers of Spanish moss — are raccoons, bobcats, opossums, and otter. There are also abundant signs of bear and white-tailed deer.

The waters of Okefenokee move slowly, and as they make their lazy way through the cypress forests, they become stained the color of tea from the tannic acid of swamp vegetation. The principal outlet of the swamp is the Suwannee River, which starts deep in the heart of Okefenokee and flows southwest into the Gulf of Mexico. The St. Marys River empties some of the swamp water into the Atlantic Ocean.

Okefenokee's natural beauty was threatened in 1889 when attempts were made to drain the swamp to facilitate timber removal. Millions of board feet of cypress, pine, red bay, and gum were removed. Not until the best timber had been cut were the region's other values given much consideration.

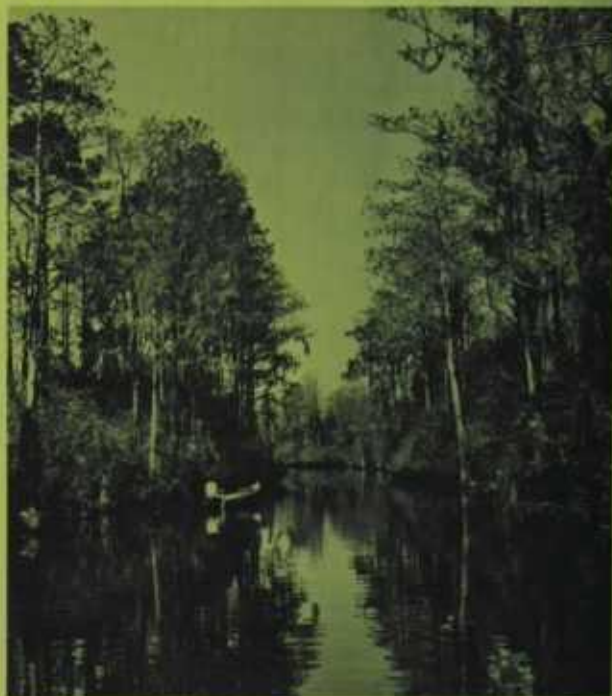
Okefenokee as a wildlife refuge is an attempt to preserve an area of primitive America; to protect fragile strands of the web of life against encroachment by the sprawl of economic progress; to hold a unique region in trust for the people who need peace, beauty, and quietness sometime during their lifetime.

In its management of the swamp, the Fish and Wildlife Service plans no development that might mar inherent attractions. Nature itself is the landscaper. Already stands of young cypress have hidden the stumps left by early loggers and eventually will rear a new generation of bearded giants to replace the old.

There are three public entrances. At each entrance guided boat tours, walking trails, swamp exhibits, and picnic facilities are available. Information on tour rates and other details may be obtained from the concessionaires.

Besides guided tours, boat rentals and launching, and fishing facilities are available. Privately owned outboard

U.S. DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service



motors of 10 horsepower or less may be used on either private or rented boats. Travel in the swamps is permitted during daylight hours.

Fishing may be done throughout the year with a Georgia State fishing license and in accordance with Georgia fishing regulations. No live fish may be used as bait. Largemouth bass, bluegill, warmouth, catfish, and pickerel are the fish most commonly taken.

Hunting and firearms are not allowed on the refuge. Dogs are permitted only at public entrances and must be kept on a leash. Collection or molesting wildlife or plants is prohibited.

STEPHEN C. FOSTER STATE PARK This area on Jones Island, managed by the Georgia Park and Historic Sites Division under a cooperative agreement with the U.S. Fish and Wildlife Service, is the west entrance to the swamp. It is from here that Billy's Lake, Minnie's Lake, and Big Water are most easily accessible. A trip through the winding watercourses connecting these lakes is a never-to-be forgotten experience.

The visitor may stop at Billy's Island, named for Chief Billy Bowlegs, a distinguished leader in the Seminole Wars. He may try his luck as a photographer, or relax and enjoy the solitude and beauty of the swamp.

This is the only entrance where overnight facilities are available. There are camp sites for tents, trailers, or campers as well as cottages for rent.

The Park may be reached by leaving U.S. Highway 441 about half a mile southeast of Fargo, Georgia, and following the paved road northeast for about 18 miles. For information on rates and reservations, write Stephen C. Foster State Park, Fargo, Georgia 31631. (Telephone 496-7509 AC 912)

SUWANNEE CANAL RECREATION AREA — This, the east entrance, is operated cooperatively by the U.S. Fish and Wildlife Service and a concessionaire. Here the visitor may follow the Suwannee Canal for 11 miles into the heart of the swamp. From the canal he may enter Chesser, Grand, and Mizell Prairies, the swamp's most extensive open areas. The little lakes and 'gator holes that dot the prairies offer some of the Nation's finest fresh water sport fishing. The prairies are also favorite areas for bird watching and are the home of the rare Florida sandhill crane.

Wildlife-oriented facilities include a wildlife drive, walking trails, a 4,000-foot boardwalk over the swamp and

observation towers from which wildlife may be observed in the scenic wilderness of the Okefenokee.

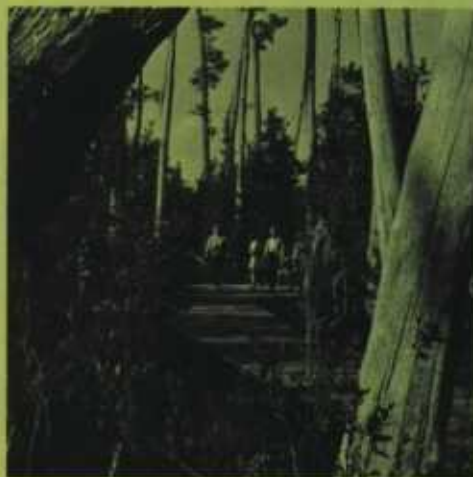
Many swamp stories are told on the boat tours and along the walks, trails, and drives.

This entrance may be reached by traveling State Highway 23 about 7 miles southwest of Folkston, Georgia, and proceeding west about 4 miles. For further information visit the Swamp's Edge Information Center located at the Recreation Area or write the U. S. Fish and Wildlife Service, P. O. Box 117, Waycross, Georgia 31501 (Telephone 283-2580 AC 912). For information dealing with guided tours, boat rentals, or fishing, contact the concessionaire, Suwannee Canal Recreation Area, Folkston, Georgia 31537 (Telephone 496-7156 AC 912).

OKEFENOKEE SWAMP PARK — This park, the north entrance to the swamp, is managed by the Okefenokee Swamp Park Association, Inc., a nonprofit private organization. The park is distinct from the Okefenokee National Wildlife Refuge, and most of it is located outside the refuge boundary. Here the visitor can take guided tours by boat along winding watercourses through part of the swamp's most beautiful cypress forest.

There is much to see during a stroll through the park grounds. The boardwalk, museum, animal habitats, botanical gardens, and the observation tower, which is high in the cypress trees, put a lot of Okefenokee in a compact package for all to see.

The park is open at variable hours throughout the year and is located about 8 miles south of Waycross, Georgia, and 5 miles off U. S. Highway 1 and 23. For further information write, wire, or call Okefenokee Swamp Park, Waycross, Georgia 31501, telephone 283-0583 AC 912.





ACCIDENTAL BIRDS OF THE OKEFENOKEE NATIONAL WILDLIFE REFUGE



Okefenokee National Wildlife Refuge, possessing a varied habitat of swamp forest, marsh, and pine-forested upland, attracts an interesting variety of birds. At least 233 species have been recorded on or near the refuge by the refuge staff and by visiting students. Many recorded observations were made in and near Okefenokee Swamp before the refuge was established in 1937. Some of these date back as far as early 1902.

The following list of 36 birds, considered very rare or accidental on the refuge, is designed as a guide for experienced observers. All species listed have been recorded fewer than four times in recent years. Admittedly, it includes some species which may be more common than records indicate, yet they have seldom been seen due to the absence of qualified observers at proper places and proper seasons.

If you see any of the species listed here, or any that are new to the refuge check list, please substantiate the record as thoroughly as possible and report it to the Okefenokee Refuge office, P.O. Box 117, Waycross, Georgia, 31501; telephone 283-2580.

ANNOTATED LIST OF ACCIDENTAL SPECIES

- White Pelican—One observed by J. T. Chesser, May 10, 1941.
- Roseate Spoonbill—One seen by Henry Holt, July 3, 1965.
- Whistling Swan—A mounted specimen owned by Lemuel Griffis was taken in the Swamp in 1934.
- Blue Goose—Two sighted by Raymond Johnson and Eugene Cypert, December 20, 1958.
- European Widgeon—One killed by a hunter, January 31, 1931; reported by F. V. Hebard.
- Common Goldeneye—Two killed on November 30, 1928; reported by F. V. Hebard. Two seen by Edward Collinsworth, December 21, 1964.
- Common Merganser—Six birds noted by H. A. Carter, January 13, 1941.
- Broad-winged Hawk—Observed December 2, 1934, by F. W. Hebard and Lucien Harris; May 24, 1954, by a group from Cornell University; and June 1, 1959, by Carl Zerbe.
- Rough-legged Hawk—Sighted March 13, 1931, by F. W. Hebard; November 17, 1959, by Paul Langheld; and March 12, 1964, by Marvin Hurdle.
- Pigeon Hawk—Identified on January 6, 1939, by Earle Greene, and on March 21, 1941, by H. A. Carter.

- Limpkin—This species is definitely an accidental transient in Okefenokee. Its sole food, snails, is absent from the swamp because of the acidic water. Has been seen in the swamp by Francis Harper, May 13, 1941; by R. I. Fulks and J. T. Chesser, June 4, 1959; and by William C. Cone, September 15, 1964.
- Clapper Rail—Noted on August 22, 1947, by R. J. Fleetwood, and on June 17, 1965, by Edward Collinsworth.
- Sora—Recorded on December 26, 1932, by F. V. Hebard, and on September 30, 1957, by Eugene Cypert.
- Semipalmated Plover—Two seen by Eugene Cypert, May 2, 1957.
- Whimbrel—One observed, April 18, 1947, by Willie Davis *vide* R. J. Fleetwood.
- Willet—One sighted by F. V. Hebard and Harry Chesser, December 3, 1932.
- Dunlin—Reported by F. V. Hebard as killed by hunters, one on November 2, 1932, and one on November 30, 1936.
- Dowitcher (species?)—Identified by F. V. Hebard, February 3, 1931, and by Marvin Hurdle and Eugene Cypert, February 14, 1964.
- Sanderling—Recorded by F. V. Hebard, February 3, 1931.
- Laughing Gull—Seen by Eugene Cypert, November 20, 1963, and January 21, 1964.
- Forster's Tern—Reported by H. A. Carter, September 21, 1941.
- Arctic Tern—One killed, May 12, 1921. The specimen was brought to Francis Harper, who prepared the skin and sent it to Cornell University.
- Barn Owl—A specimen collected by J. T. Chesser, November 16, 1922, is at Cornell University.
- Ivory-billed Woodpecker—This bird has doubtlessly been extinct in Okefenokee Swamp for many years. A mounted specimen, now at the Philadelphia Academy of Science, was collected in Okefenokee by Sam Mizelle in March 1912. John M. Hopkins reported seeing ivory-bills in the swamp four times in 1902-03. There have been several more or less doubtful records since then. Probably the most valid of recent records are those of singles seen on April 5, 1941 and April 16, 1942, by H. A. Carter, and one on March 25, 1948, by William R. Edwards.
- Gray Kingbird—Sighted by H. A. Carter, October 21, 1940.
- Western Kingbird—One identified by several members of the Georgia Ornithological Society, October 9, 1938. Another seen April 6, 1960, by B. J. Kincaid.

Red-breasted Nuthatch—Observed in Waycross, Georgia, by Roy Moore, May 4, 1962, and by Marvin Hurdle, February 1, 1964.

Bachman's Warbler—F. V. Hebard collected a specimen, December 31, 1929, and saw birds on December 1, 1929 and December 17, 1933.

Cerulean Warbler—One noted by H. A. Carter, April 5, 1941. One reported by group from Cornell University March 25, 1954.

Chestnut-sided Warbler—Four migrants were killed by flying into the Camp Cornelia radio tower, October 8, 1954; reported by Roy Moore.

Connecticut Warbler—Two killed on Camp Cornelia radio tower; reported by Roy Moore, October 8, 1954.

Painted Bunting—One observed by several members of the Georgia Ornithological Society, April 19, 1958. One killed on the radio tower at Camp Cornelia, found by Paul Langheld, April 21, 1960.

Le Conte's Sparrow—One observation, November 22, 1937, reported by F. V. Hebard, was in Charlton County but not on the refuge.

Henslow's Sparrow—Two sighted by Sam Grimes, December 20, 1958. Three reported on Christmas bird count, December 20, 1962.

Lark Sparrow—One found by Richard Roche, March 29, 1954. One was seen between Waycross and the Swamp, July 27, 1963, by Eugene and Mary Louise Cypert.

Tree Sparrow—One seen on January 1, 1930, by H. E. Tuttle.

NOTE: A number of species not yet seen on the refuge occur so erratically that their presence is always of interest. These unusual species are listed below. Again, if you see any of them, please report the observance to the refuge office.

Glossy Ibis	Golden-winged Warbler
Snow Goose	Blue-winged Warbler
Greater Scaup	Magnolia Warbler
Red-breasted Merganser	Black-throated Green Warbler
Golden Eagle	Kentucky Warbler
Bald Eagle	Yellow-breasted Chat
Peregrine Falcon	Canada Warbler
Virginia Rail	Boat-tailed Grackle
Herring Gull	Grasshopper Sparrow
Swainson's Warbler	

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of this department of natural resources.

The Department works to assure the wisest choice in managing all our resources so that each shall make its full contribution to a better United States now and in the future.

Refuge Leaflet 181A
March 1971

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE