OKEFENOKEE NATIONAL WILDLIFE REFUGE

Folkston, Georgia

ANNUAL NARRATIVE REPORT

Calendar Year 1983

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

INTRODUCTION

The Okefenokee National Wildlife Refuge is situated in the southeastern Georgia counties of Ware, Charlton and Clinch and the northeastern Florida's Baker County. The refuge was established by Executive Order in 1937 and consists presently of 395,858 acres. The primary purpose of the refuge is to protect the ecological system of the 412,000-acre Okefenokee Swamp. Approximately 371,000 acres of the Okefenokee Swamp are incorporated into the refuge, and 353,981 acres within the swamp were designated as wilderness by the Okefenokee Wilderness Act of 1974. The refuge headquarters is located at Camp Cornelia, which is 11 miles southwest of Folkston, Georgia.

Three primary entrances and one secondary entrance exist for the refuge. The Suwannee Canal Recreation Area, an entrance which is located near the refuge headquarters, is managed solely by the Fish and Wildlife Service. The Stephen C. Foster State Park is the refuge's western entrance which is located 18 miles northwest of Fargo, Georgia. The state park is operated on refuge lands under the provisions of a long-term agreement with the Georgia Department of Natural Resources. The refuge's northern entrance is the Okefenokee Swamp Park which is located about 13 miles south of Waycross, Georgia. The Park is administered by a non-profit organization on refuge and state forestlands. Kingfisher Landing located between Folkston and Waycross is considered the secondary entrance into the refuge.

The eight predominant habitat types include swamp islands, prairies (fresh-water marsh), shrub swamp, mixed cypress forests, blackgum forests, bay forests, pure cypress forests, and managed upland pine forests. These habitat types are discussed in detail in the Habitat Management section of this report.

PERSONNEL

1.	John D. Schroer (EOD 03/20/83)	Refuge Manager (GS 13, PFT)
2.	John R. Eadie (EOD 08/07/72) Transferred to Washington, D.C. 01/09/83	Refuge Manager (GS 13, PFT)
3.	Lloyd A. Culp, Jr. (EOD 12/04/78)	Asst. Refuge Manager (GS 11, PFT)
4.	Royce R. Huber (EOD 12/30/79) Transferred to Noxubee NWR 02/05/83	Asst. Refuge Manager (GS 9, PFT)
5.	Algie L. Jolly, Jr. (EOD 05/29/83)	Asst. Refuge Manager (GS 9, PFT)
6.	Kimberly A. Johnson (EOD 06/01/83)	Asst. Refuge Manager (GS 7, PFT)
7.	Ronald A. Phernetton (EOD 01/09/74)	Forester (GS 11, PFT)
8.	Tony R. Gooch (EOD 08/18/80)	Biological Technician (GS 6, PFT)
9.	James A. Burkhart (EOD 06/11/78)	Chief Outdoor Recreation Planner (GS 11, PFT)
10.	William C. Kent (EOD 06/03/79) Transferred to Parker River NWR 08/20/83	Outdoor Recreation Planner (GS 7, PFT)
11.	Thomas C. Worthington (EOD 10/07/79) Transferred to Minnesota Valley NWR 05/01/83	Outdoor Recreation Planner (GS 7, PFT)
12.	Cheryl Branagan (EOD 11/27/83)	Outdoor Recreation Planner (GS 5, PFT)
13.	Douglas E. Nuss (EOD 01/16/77)	Biological Technician (GS 8, PFT)
14.	Augustus H. Saville (EOD 07/22/80)	Biological Technician (GS 8, PFT)
15.	Omer L. Bowen (EOD 03/11/63) Retired 06/30/83	Biological Technician (GS 8, PFT)
16.	Cecile M. Davis (EOD 10/16/72)	Administrative Clerk (GS 6, PFT)
17.	Dartha L. Pittman (EOD 12/06/76)	Clerk-Stenographer (GS 5, PFT)
18.	Jay Burch (EOD 12/07/61)	Maintenance Mechanic (WG 9, PFT)
19.	Virgil Crews (EOD 01/05/69)	Engineering Equipment Operator (WG 8, PFT)
20.	Stiner Jones (EOD 09/19/83)	Maintenance Worker (WG 6, PFT)
21.	Iva Lee Chesser (EOD 10/08/79)	Laborer (WG 2, TAPER, Intermittent)
22.	Vannie Clark (EOD 07/14/78)	Laborer (WG 2, TAPER, Intermittent)
23.	Ralph Davis (EOD 03/30/76)	Laborer (WG 2, TAPER, Intermittent)
24.	Nell Snowden (EOD 07/14/77)	Laborer (WG 2, TAPER, Intermittent)
25.	Isiah Lee (EOD 12/28/82) Terminated 11/04/83	Laborer (WG 2, Temporary, NTE 1 Year)
26.	Gracie Gooch (EOD 12/26/82) Terminated 12/24/83	Laborer (WG 2, Temporary, NTE 1 Year)
27.	Roger L. Crews (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
28.	Billy C. Davis (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
29.	Donald J. Enfinger (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
30.	Herman C. Everett (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
31.	Denise L. Flink (EOD 06/20/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)

(continued)

PERSONNEL

32.	Ralph V. Boone (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
33.	Andy H. Gowen (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
34.	Baynard H. Gowen (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
35.	Robert L. Jones (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)
36.	Curtis J. Mitchell (EOD 06/12/83)	Laborer-Firefighter (WG 3, Temporary, NTE 1 Year)

REVIEW AND APPROVALS

John D Schroer 2/24/84
Submitted by Date

Frank H. McDaniel 2-28-84
Regional Office Review Date

(Left to Right) Back Row: 1,36,19,20,7,8
Front Row: 3,17,18,5,16,6,13
83-A-LAC (12/83)

(Left to Right) 9, 10,11
83-B-WCK (11/82)

14
83-C-LAC (12/83)

(Left to Right) Sitting: 21,24
Standing: 23,22
83-D-WCK (10/81)

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A. HIGHLIGHTS

The University of Georgia plans on developing a permanent laboratory and support facilities on or adjacent to the refuge. (Section D.5)

Seven (7) permanent positions were vacated and/or filled during the year. (Section E.1)

In addition to the regular staff, a ten-person fire crew was hired to assist during the fire seasons. (Sections E.1 and F.9)

Banks Lake is still in limbo, but the fate of this area may be decided in 1984. (Section E.8)

Special fire management funding permitted the acquisition of a considerable amount of fire equipment during the year. (Sections I.4 and I.5)

B. CLIMATIC CONDITIONS

Rainfall during 1983 was almost six inches higher than average. Two years of above average rainfall finally brought swamp water levels up to normal for the first time since the 1981 drought. During 1981, water levels reached the lowest point since 1951-1954 when ground and surface fires burned most of the swamp.

Summer daily high temperatures averaged in the mid-90's, about two degrees above normal. Summer low averages were in the high 60's. Winter daily highs averaged from 59 to 66 degrees, about three degrees lower than normal. Winter lows averaged about 40 degrees. Temperatures as high as 80 degrees occurred in February and during December, a Christmas morning freeze brought the temperature down to 11 degrees, the second lowest temperature ever recorded at the Camp Cornelia weather station. The summer high temperature of 101 degrees occurred during August.

Dry periods, such as the one that occurred in 1981, and the resulting low water levels encouraged encroachment of herbaceous and woody vegetation into areas which once were open water. Unfortunately, this encorachment was not reversed with the return of wetter periods. Wading bird and waterfowl populations which are dependent upon open water areas declined during 1981 and have not significantly increased with the return of wetter weather and higher water levels.

	RAINFALL (Inches)			TEMPERATURES					
				24-Year Average#		1983			
	20 year Average*	1983	1982	Average Daily High	Average Daily Low	Average Daily High	Average Daily Low	Monthly High	Monthly Low
JANUARY	3.44	4.69	3.58	66	41	59	36	72	23
FEBRUARY	3.79	5.34	3.17	69	43	66	42	80	26
MARCH	3.76	6.43	5.13	74	48	72	47	86	31
APRIL	3.22	6.89	4.99	81	55	78	48	90	30
MAY	4.47	1.76	5.36	87	62	87	60	92	48
JUNE	5.76	8.00	6.65	91	67	89	66	96	62
JULY	7.48	8.89	9.25	92	70	95	69	100	62
AUGUST	7.65	3.93	1.99	92	70	95	69	101	60
SEPTEMBER	5.40	2.15	5.77	88	67	87	64	98	51
OCTOBER	2.35	1.38	5.51	80	58	82	62	91	49
NOVEMBER	2.34	3.73	1.31	73	48	72	37	82	32
DECEMBER	3.37	5.83	3.52	67	42	62	41	83	11
TOTALS	53.03	59.02	56.23	* 1963 - 1982 # 1946 - 1969					

SUWANNEE CANAL RECREATION AREA
COMPARATIVE WATER LEVELS
(Feet Mean Sea Level)

	NORMAL 20-YEAR AVERAGE#		1983		1982		1954*	
	High	Low	High	Low	High	Low	High	Low
January	121.49	121.09	121.38	120.85	120.52	120.16	121.80	121.54
February	121.67	121.28	121.84	121.36	120.76	120.44	121.52	121.16
March	121.70	121.18	122.12	121.75	121.10	120.57	121.16	120.76
April	121.64	121.05	122.48	121.95	121.30	120.92	120.74	120.46
May	121.34	120.84	122.08	121.58	121.12	120.52	120.62	120.06
June	121.24	120.68	121.74	121.47	120.60	120.14	120.30	119.54
July	121.32	120.76	121.82	121.48	120.83	120.32	119.50	118.66
August	121.63	121.00	121.64	121.08	120.70	120.42	118.62	118.18
September	121.63	121.13	121.06	120.71	120.62	120.26	118.16	117.92
October	121.38	120.92	120.71	120.50	120.90	120.34	118.04	117.70
November	121.15	121.15	120.84	120.38	120.81	120.60	117.76	117.56**
December	121.23	120.90	121.46	120.78	120.82	120.54	117.90	117.64

*Year last fire-encouraging drought occurred and continued into 1955.
**Lowest water level records during 1954-55 fire year.
#1963-1982

C. LAND ACQUISITION

1. Fee Title

No acquisition occurred during the year. About 16,000 acres of swampland and inholdings still need to be acquired to round out the refuge boundary.

D. PLANNING

1. Master Plan

Although no actual work was done on the Master Plan, a review of refuge objectives took place with proposed revisions being submitted to the regional office. During the revision, public use objective levels were the only ones proposed for revision to better reflect current trends and future plans.

An informal review was made of the Development Plan. Proposed revisions which will be submitted in 1984 will include a reduction in the amount and type of public use facilities proposed for the west side entrance and Kingfisher Landing.

2. Management Plan

A considerable amount of time and effort was devoted to the formulation of the Fire Management Plan for this station. One of the major changes from the previous plan was the inclusion of a provision for the hiring of a temporary fire crew during the fire seasons.

Prior to the close of 1983, two other plans were begun. The major task of preparing a Habitat Management Plan was initiated with hopes of having a final draft by the end of FY 1984. In addition, the Management Plan for Visitor Center Operations should be completed early in 1984.

3. Public Participation

Negotiations between the Fish and Wildlife Service, the University of Georgia, and the citizens of Charlton, Ware and Clinch Counties on the final location of a Long Term Ecological Research (LTER) facility continued throughout the year. Numerous phone calls and one luncheon occupied many staff hours without any firm decisions being made. Hopefully, the LTER station will eventually become a reality. A location should be finalized in 1984.

4. Compliance with Environmental Mandates

A Section 7 consultation/evaluation was completed for the installation of a radio tower on the west side of the refuge. No endangered species would be impacted, and the project received approval.

5. Research and Investigations

A variety of research projects continued on Okefenokee Refuge this year. The University of Georgia's Institute of Ecology is conducting the most comprehensive study with a National Science Foundation grant which establishes a Long Term Ecological Research (LTER) station at Okefenokee. In December, Dr. Bernard Patten of the University of Georgia's Institute for Ecology and his research staff conducted a research update for the refuge staff and officers of the National Science Foundation. The University of Georgia is proceeding with plans to develop a permanent laboratory and support facilities on the refuge. University of Georgia President Fred Davidson and other UGA officials met with refuge staff in March concerning the location of this facility. No final decision has been made on a location; however, refuge personnel have indicated three possible locations on refuge lands.

Although not presently formal research, a proposal has been made to initiate a study to determine the feasibility of releasing whooping cranes on the refuge. This program would be conducted by the University of Georgia's Cooperative Wildlife Research Unit.

Okefenokee NR83 - "Ecology and Natural History of the American Alligator" (41590-3) Atlanta Zoological Park

Howard Hunt, Curator of Herpetology for the Atlanta Zoological Park, is conducting this research. Objectives of the study are as follows: (1) locate nests; (2) observe parental behavior of alligators, identify predators of their eggs; (3) observe parental behavior and interactions between adult alligators; and (4) monitor young alligators.

Mr. Hunt found only two nests along Suwannee Canal this year as opposed to nineteen nests located last year. One of these nests was destroyed by bear(s). The other produced ten hatchlings. Water fluctuations and predators heavily impacted alligator nesting on the refuge. This research will continue in 1984.

Okefenokee NR83 - "Investigations of the Plant Ecology of the Okefenokee Swamp" (41590-4) Governors State University (Park Forest South, Illinois)

The goals of this research program, which is directed by Dr. Peter Gunther, is to study the seed bank ecology of the open marsh prairies and wooded swamp communities and to study the role of perennial plant parts on surface and subsurface peat formations.

Okefenokee NR83 - "Geologic and Coal Petrologic Investigations of the Peat Deposits of Okefenokee Swamp" (41590-6) University of South Carolina

Dr. Arthur Cohen has been studying various aspects of Okefenokee's peats since 1970. His research has resulted in many publications and is largely responsible for the generation of new theories about the geologic history of Okefenokee. Objectives of this research are: (1) to determine the botanical and mineralogic composition and physical structure of the peats

forming in the Okefenokee Swamp; (2) to reconstruct the geologic history of the swamp; (3) to evaluate some of the early physical changes in peat tissues as they are transformed to the substances observed in lignites and bituminous coals; (4) to establish the geometry and lateral relationships of peat deposits and mineral matter occurring in the swamp and (5) to use these geologic and petrographic characteristics to reconstruct the geologic history and depositional settings of ancient coal deposits.

Okefenokee NR83 - "Okefenokee Swamp Ecosystem Study" (41590-4) University of Georgia

This program, directed by Dr. Bernard Patten, is a comprehensive study of the structure and functions of the Okefenokee Swamp ecosystem and those factors essential to its maintenance. The objectives of this broad based study are to: (1) develop basic knowledge about Okefenokee as an ecosystem-species relationship in the development of basic ecological knowledge about the swamp, to investigate the hydrology of the swamp, the patterns and control of primary productivity, and the basis of food webs and (2) integrate this knowledge into a comprehensive whole ecosystem model which should be able to assess various long-term effects of natural and human disturbance.

E. ADMINISTRATION

1. Personnel

Personnel management during 1983 was one of almost constant change. Refuge Manager John Eadie, after over ten years in the "swamp", transferred on January 9 to become the Deputy Chief, Division of Refuge Management in Washington. His replacement, John Schroer, transferred from Blackwater Refuge, effective March 20. The assistant manager position on the west side was vacated on February 5 when Royce Huber transferred to Noxubee Refuge. This position was filled on May 29 by Sandy Jolly, who was displaced when Corning National Fish Hatchery was forced to close. Assistant Manager Kimberly Johnson reported on June 1 transferring from Hatchie Refuge.

Two outdoor recreation planners transferred during the year. ORP Tom Worthington transferred to Minnesota Valley Refuge on May 1, and ORP Bill Kent went to Parker River Refuge on August 20. One of these positions was converted to the refuge manager series and filled by Kim Johnson, and the other was filled on November 27 by ORP Cheryl Branagan from Crab Orchard Refuge.

After over 20 years of dedicated service, Biological Technician Neb Bowen decided to say "goodbye" to work schedules and "hello" to the fishing gear, as he retired on June 30. Forestry Technician Tony Gooch filled the vacated Biological Technician position. The year closed with the Forestry Technician position unfilled.

Prior to 1983, recruitment efforts began to fill a new maintenance position for the west side. To assist with maintenance projects prior to filling the permanent position, Ralph Boone was hired for two 30-day appointments.

Finally on September 19, Stiner Jones reported for duty as a maintenance worker. Two temporary laborer positions came to an end during the year; Isiah Lee's and Gracie Gooch's appointments were terminated on November 4 and December 24, respectively. One of these positions was filled by Curtis Mitchell and the other was vacant when the year ended. In addition to the above, Laborer Tommy Roberts was hired for two 30-day appointments early in the year to assist primarily with tree planting.

To assist with fire suppression activities, a ten-person fire crew was employed full-time from June 13 through September 9. Seven people were employed on the east side, and three on the west. Part of the crew returned on an intermittent basis in the winter to assist with fuel hazard reduction activities.

Due to the numerous moves and time lapses in filling vacancies, only 17.3 of the 19.4 FTE were utilized for FY 1983.

FIVE-YEAR COMPARISON
REFUGE STAFFING PATTERN

	PERMANENT			
	Full-Time	Part-Time	Temporary	TAPER*
FY 1983	16	0	2	4
FY 1982	15	0	2	4
FY 1981	15	2	2	4
FY 1980	16	2	4	4
FY 1979	17	2	6	4

*Temporary Appointment Pending Establishment of a Register

2. Youth Programs

Okefenokee Refuge hosted a 15-enrollee Youth Conservation Corps (YCC) camp during June 13 - August 5, with 11 enrollees working at the Camp Cornelia headquarters (Folkston) and 4 enrollees reporting to the Jones Island sub-headquarters (Fargo). The enrollees were selected by a public drawing on April 25, as Ms. Sheila Carter of Folkston, Georgia, drew the names of 15 selectees (8 females, 7 males) plus several alternates.

YCC activities were concentrated on the completion of a backlog of refuge maintenance activities which had accumulated since the elimination of YACC. These activities included trimming vegetation from walking trails, replacing bark in the paths of walking trails, maintaining lawns, buildings and grounds at the Suwannee Canal Recreation Area, and removing the unsightly fence

around Camp Cornelia. The major YCC construction project for 1983 was the completion of the last 260-foot section of boardwalk along the Ridley's Little Island Trail.

YCC enrollees played a major role in the construction of the Ridley's Little Island Trail boardwalk. 83-1-DLF (08/83)

The camp was a resounding success, as the local youth gained meaningful employment and work experience, and much work was accomplished for the refuge. Unfortunately, the camp was beset by a couple of nagging problems.

The most aggravating problem with YCC involved the recruitment and hiring of a group leader. The original plan involved recruiting locally for a group leader and placing him/her on board at least several days prior to the camp's opening in order to plan YCC activities. However, the refuge was informed about one month prior to the camp's opening that due to fund shortages, Ecological Services personnel from Brunswick, Georgia, would be detailed as group leaders to Okefenokee's YCC camp. Although this change in plans significantly curtailed pre-planning time with the group leaders, the inconvenience was not considered to be so significant that effective YCC planning and implementation would be prohibited. Thus, Messrs. Karl Schaffer and Ed EuDaly of Eco-Services opened the camp as Group Leaders and managed the camp quite satisfactorily during the first three weeks of YCC operations. However, Eco-Services suddenly discovered that their personnel were needed to work on COE projects, and their personnel pulled out of the YCC operation after the third week of camp. A mad scramble ensued to find a replacement Group Leader to take over during the fourth week of the camp. Fortunately, Ms. Taska Brantley of Folkston, who was a YCC Group Leader during the 1981

camp, agreed to assume the position. With her previous YCC experience and much initiative, Ms. Brantley managed the Group Leader transition as smoothly as anyone could reasonably expect and guided YCC through a productive summer's work.

The only other significant problem that was encountered by YCC involved the enrollees' pay. Most enrollees received their paychecks on schedule, but several enrollees were always several weeks behind schedule in receiving their checks. Apparently, the onslaught of YCC hiring in June bogged down the payroll system and made it difficult to correct any payroll problems.

3. Other Manpower Programs

The Georgia Department of Offender Rehabilitation periodically detailed several juveniles who had been convicted of misdemeanors to the Banks Lake Unit for grounds maintenance duties. These juvenile offenders were sentenced to this community service in lieu of other forms of punishment, and they were always under the direct supervision of Biological Technician Gus Saville.

Members of Explorer Post 91 of Tucker, Georgia, brushed and trimmed the Brown Canoe Trail to Craven's Hammock in early March in order to make the trail more navigable. Mr. Mike Timma directed this group which provided an outstanding service to the canoe trail program. Due to their efforts, the Brown Trail was opened in time for the peak canoe trail use period of March-April.

The Boy Scout Troop of Lake Wales, Florida, conducted their annual cleanup and repairs to the Floyd's Island Cabin in March. The group was directed by Mr. Thomas Costello, and their efforts helped assure the continued use of the cabin by wilderness canoeists.

4. Volunteers Program

Okefenokee's volunteer program received a real "boost" in attention as a result of an Atlanta Constitution news release in the spring of the year. A phone interview between Outdoor Recreation Planner Tom Worthington and a newspaper correspondent led to the erroneous claim in the article that Okefenokee was soliciting volunteers to do night canoe patrols through the refuge to count alligators. The lure of a night excursion into the "Swamp" to count these "dangerous" creatures generated considerable interest in the volunteer program. When the dust cleared, the assistance of five new volunteers was gained to help with the annual census of the red-cockaded woodpecker. The following table lists each volunteer, the total hours worked and major area of assistance:

VOLUNTEER PROGRAM

Volunteer	Hours Worked	Work Accomplishment
Joe Doherty	82	Refuge photography
Sheila Lewis	41	Special interpretive program planning and coordination
Sheila Willis	92	Night tours, owl prowls, slide file organization
Ralph Boone	93	General maintenance
G. E. Barnett	40	Red-cockaded woodpecker survey
William Barnett	40	Red-cockaded woodpecker survey
Christine Huff	40	Red-cockaded woodpecker survey
Howard B. Market	40	Red-cockaded woodpecker survey
W. C. White	40	Red-cockaded woodpecker survey
Christy Trowell	20	Historical research and interpretive programs
Howard Hunt	10	Research on alligator nesting
TOTAL	538	

Volunteers assisted with the red-cockaded woodpecker survey as well as other projects.
83-2-TRG (06/83)

The greatest hurdle to the success of the volunteer program continued to be finding volunteers with skills which could be used in refuge programs. Efforts in this area will continue in 1984.

5. Funding

The FY 1983 O & M budget was one of change. The fiscal year started with a total of $555,000 but was reduced to $535,000 in January. By the end of the fiscal year, $579,975 was showing up on the budget printouts. Unfortunately, the increase in funding was not simply an addition to the O & M base but was earmarked for special projects. An additional $1,000 (1994) was added for quarters maintenance; $26,675 (1520) for the operation of the Youth Conservation Corps program; and $17,300 (1220) was granted as Fire Management O & M, most of which was to be used to procure specific pieces of needed fire equipment. Although the "base" O & M funding for FY 1983 was barely adequate to make ends meet under normal conditions, this station faired very well considering the salary savings which resulted from the numerous personnel moves, the fact that the Regional Office covered the cost of two moves, and a $2,000 add-on fishery funding (1300) to cover part of the salary for a former hatchery employee Sandy Jolly.

FIVE-YEAR FUNDING COMPARISON

FY	1210	1220	1240	6820	8722	8340	1994	1520	TOTAL
1983	232,000	66,300	201,000	51,000	-	-	3,000	26,675	579,975
1982	274,400	42,000	174,000	51,000	-	-	8,700	-	550,100
1981	183,900	40,000	250,000	42,000	4,000	1,700	1,000	-	522,600
1980	157,300	20,000	213,000	42,000	4,000	5,000	-	-	441,300
1979	135,000	20,000	221,400	34,000	12,400	-	-	-	442,800

In addition to the O & M funding, this station utilized $39,800 of the Emergency Fire Suppression funds, Subactivity 1510. These funds were used to train and maintain a ten-person fire crew during the high fire danger season and for other fire emergency pre-suppression.

Two Jobs Bill projects were funded for this station in FY 1983. One of $30,000 was for rehabilitation of exhibits in the interpretive center, and the second for $90,000 was for rip-rapping around the water control structure in the Sill.

A total of $204,750 was also planned for fire-related purchases under Subactivity 2821. Of this total, $103,000 was actually obligated. The items procured are detailed in Section I, Equipment and Facilities.

6. Safety

Through monthly safety meetings, refuge employees were reminded of safety practices for a variety of work-related activities and exposed to new ideas throughout the year. Employees discussed accidents and near misses and ways these could have been or were prevented. All employees were encouraged to identify potential hazards in their work areas, correct those they could and report those they could not.

Special safety programs given this year included defensive driving, first aid and CPR. Several members of the staff participated in one or more fire management courses (see Other Items, page 14). A "surprise" refuge wildfire drill was held in the summer.

A new safety committee was organized in October 1983. Staff appointed to the committee were Sandy Jolly, Ron Phernetton, Jay Burch, Dartha Pittman and Kim Johnson, as Chairperson. This committee will serve for a one-year period.

Regional Safety Manager Kenneth Cooper conducted a safety inspection at Okefenokee on June 14. Recommendations which he made included grounding the wood dust collection unit, replacing the running cables on the mobile crane, replacing the emergency lighting system in the Visitor Center auditorium and installing guard bars across the glass front in the Visitor Center. Grounding for the dust collection unit and the emergency lights have been installed. Wooden rails are being custom-made for installation across the windows, and new cable will be installed on the crane before it is used.

Following is a summary of reported accidents:

Visitors

1. On January 17, Rhea Esposito was bitten on the arm by an aggressive raccoon at Stephen C. Foster State Park. Rabies shots were administered at Waycross Health Center.

2. On February 22, Elizabeth Dominque sustained a small cut on finger while feeding a raccoon at Stephen Foster.

3. On April 2, Cristian Lentz fell from the rear of a pickup truck and struck the pavement of the wildlife drive with his head. An ambulance was called and transported the boy to Charlton Memorial Hospital.

4. On March 31, Douglas Stewart and son explored an area of the swamp which could not be reached by an established trail. Unable to find their way back in and unreachable by refuge personnel, they spent the night. When found the next day, the boy showed early signs of hypothermia. He was examined by a park visitor who was a paramedic.

5. On April 5, Nancy Glace fell while exiting a boat and broke her leg. The family splinted the leg and transported her to Charlton Memorial Hospital.

Staff - Permanent

1. On February 16, Biological Technician Gus Saville slipped on wet clay and broke his right ankle.

2. On November 14, Mechanic Jay Burch got rust in his eye while installing a tailgate. The need for use of eye protection was discussed at the next safety meeting.

3. On December 12, Maintenance Worker Stiner Jones pulled a muscle in his back when making a quick movement.

Staff - Temporary

1. On July 11, Ralph Boone bruised his elbow on a highway marker while digging a hole next to the sign. He was urged to be more careful and to be aware of his surroundings.

2. On June 28, Denise Flink was stung on the arm while participating in a red-cockaded woodpecker survey. She was reminded to wear long-sleeved shirts while in the woods.

3. On August 18, Donald Enfinger came in contact with poison ivy while trimming vegetation. Medical attention was required.

7. Technician Assistance

Biological Technician Douglas Nuss was detailed for one week in August to Reelfoot Lake in Tennessee to test the feasibility of using Okefenokee Refuge's trailcutter to rehabilitate trails in Reelfoot Lake. This cooperative venture among Okefenokee NWR, Reelfoot NWR, and the Tennessee Wildlife Resources Agency was successful, as the trailcutter effectively cut trails in the lake. As a result of this test, the Fish and Wildlife Service is planning to acquire a trailcutter which is similar to Okefenokee's for Reelfoot NWR.

Mr. Wen-sheng Hsu, of the Tourism Bureau of Taiwan, visited the refuge in February as part of an orientation to land management in the United States. This orientation program, sponsored by the U. S. Department of Agriculture, permitted Mr. Hsu to visit several national wildlife refuges and parks over a four-month period. Mr. Hsu was primarily interested in learning about methods of managing the public's use of wildlands with a minimum of adverse impacts to these areas.

Mr. Roger Die Gbande, Assistant Director of Azagny National Park, Ivory Coast, Africa, visited the refuge to receive assistance in determining ways of providing controlled public use in wildlife viewing areas in his country.

8. Other Items

The administrative headquarters for this station was relocated from Waycross to the Camp Cornelia facilities near Folkston in October 1982. The first year was to be an evaluation period to determine which location would be most effective in managing the refuge. The new location which puts the administrative office in the same place as most of the staff and major management activities has proved very successful, and the office will remain on the refuge for the foreseeable future.

Administrative Clerk Cecile Davis was notified in July that her GS-6 position was improperly classified. At the request of Personnel Management, a new position description was formulated and submitted in early September. At the close of 1983, no apparent action had been taken on this reclassification.

This refuge received two audits by the Office of the Inspector General during the year. An audit by telephone was conducted concerning overtime use on the refuge. The second audit concerned the fire management program on the refuge. At the close of 1983, no results were made available to the refuge concerning either audit.

The following training sessions/workshops were attended by refuge personnel during 1983:

Law Enforcement Refresher Training - Brunswick, Georgia. All employees with law enforcement authority.

Fire Management Seminar - Boise, Idaho; September 18-24, 1983, attended by Ronald A. Phernetton and John D. Schroer.

Nine Week Law Enforcement Training Course - Brunswick, Georgia; attended by Algie L. Jolly, Jr., and Cheryl Branagan.

North Carolina Forest Service Advanced Equipment Operator's School - Kinston, North Carolina; September 26-30, 1983, attended by Jay W. Burch and Virgil Crews.

Pine Bark Beetle Workshop - Herty Building, Georgia Forestry Commission, Waycross, Georgia; July 27, 1983, attended by Ronald A. Phernetton and Tony R. Gooch.

Interagency Helicopter Management Course - Merritt Island NWR, Titusville, Florida; January 3-7, 1983, attended by Ronald A. Phernetton.

Biological Technician Douglas Nuss was selected to participate in the development of an equipment operations fire suppression course. Doug attended two meetings during the year and will continue to work on this project in 1984.

Banks Lake

On April 16, 1980, the U. S. Fish and Wildlife Service entered a lease agreement with The Nature Conservancy to manage a 3,450-acre portion of Banks Lake, located in Lanier and Lowndes Counties in southeastern Georgia. The original intent of the lease was to eventually establish a National Wildlife Refuge on this area. Changes in the emphasis of the land acquisition program resulted in no funds being appropriated for acquiring this land. This area remained in a state of limbo during 1982 and 1983 with the FWS maintaining a caretaker position over Banks Lake. However, the final disposition of this area may be determined in early 1984, as Regional Director James Pulliam and Deputy Assistant Regional Director Don Hankla toured the area on December 7 so they could formulate recommendations on the fate of Banks Lake.

F. HABITAT MANAGEMENT

1. General

The 412,000-acre Okefenokee Swamp has been classified into eight major habitats based on predominant types of vegetation. The habitat types and relative percentages of each were determined from ecological research conducted by the University of Georgia. More than 70 islands exist within the Okefenokee Swamp covering 61,775 acres and comprising 8% of the swamp. Prairies including aquatic macrophyte areas and grass-sedge areas cover 21% of the swamp. Shrub swamp dominated by hurrah bush, fedder-bush, titi, sweet spire, and poor man's soap cover 34%. Mixed cypress forests are the largest of the forested wetlands and cover 23% of the total swamp. Mixed cypress forests include pond cypress, blackgum, sweet bay, red bay, and loblolly bay. Blackgum forests contain blackgum and bay with blackgum being the dominant species. Bay forests are dominated by bay species and together with blackgum forests cover 6% of the swamp area. Some pure stands of pond cypress cover 6% of the swamp. Approximately 15,500 acres of managed upland pine forests, most of which are located around the swamp's perimeter, are included within the refuge boundaries.

2. Wetlands

The Okefenokee NWR contains 370,000 acres classified as wetlands. Wetlands management in the refuge is limited because of insufficient data on the swamp's complex ecosystem. The University of Georgia is conducting ecological research which will, hopefully, give refuge personnel a better understanding of the ecological processes unique to the swamp environment. At present, protection of the swamp flora and fauna, management of waterways for public use, and controlling the swamp's water level by means of the Suwannee River Sill are the only types of wetland management being conducted.

The Suwannee River Sill was originally constructed in early 1960's to retain higher water levels during drought, thus reducing the probability of fire. Fire has played a major role in the evolution of the swamp by

setting back plant succession and preventing the conversion of marsh areas to swamp forest. The long-term effect of the sill and reduced fire potential during low water conditions is not known at this time. The ecological studies being conducted at present should enable wetland management decisions to be made that would be conducive to the preservation of the Okefenokee Swamp.

Waterway management within the swamp is limited to canoe trails. Although the main purpose of clearing trails is to enhance public use, this practice also allows better flow of water through the swamp. The increase in rate of flow of water through the swamp discourages eutrophication and slows down plant succession.

Tall cypress trees surround the boat trail north of Dinner Pond. 83-3-TRG (08/82)

Gerardia (Agalinis spp.) dot the foreground of this view of Chesser Prairie. 83-4-UNK (unknown)

3. Forests

Approximately 29,500 acres of upland forest lie within the boundaries of Okefenokee National Wildlife Refuge. The refuge forest habitat management program includes 15,500 acres of forestlands, most of which lie just outside or near the swamp line. These managed forestlands are divided into 15 compartments ranging from 150 acres to 1,800 acres. Their locations are shown on the map on page 18. Most of the remaining 14,000 acres of upland forest are located within National Wilderness Area boundaries and are not managed except as noted in the section Unmanaged Forestlands.

Objectives of management of refuge forestlands are:

1. To provide habitat beneficial to a wide variety of native wildlife species with special emphasis on threatened and endangered species.

2. To enhance forest-wildlife oriented recreation, appreciation and educational opportunities.

3. To demonstrate the benefits of forest-wildlife management on forestlands.

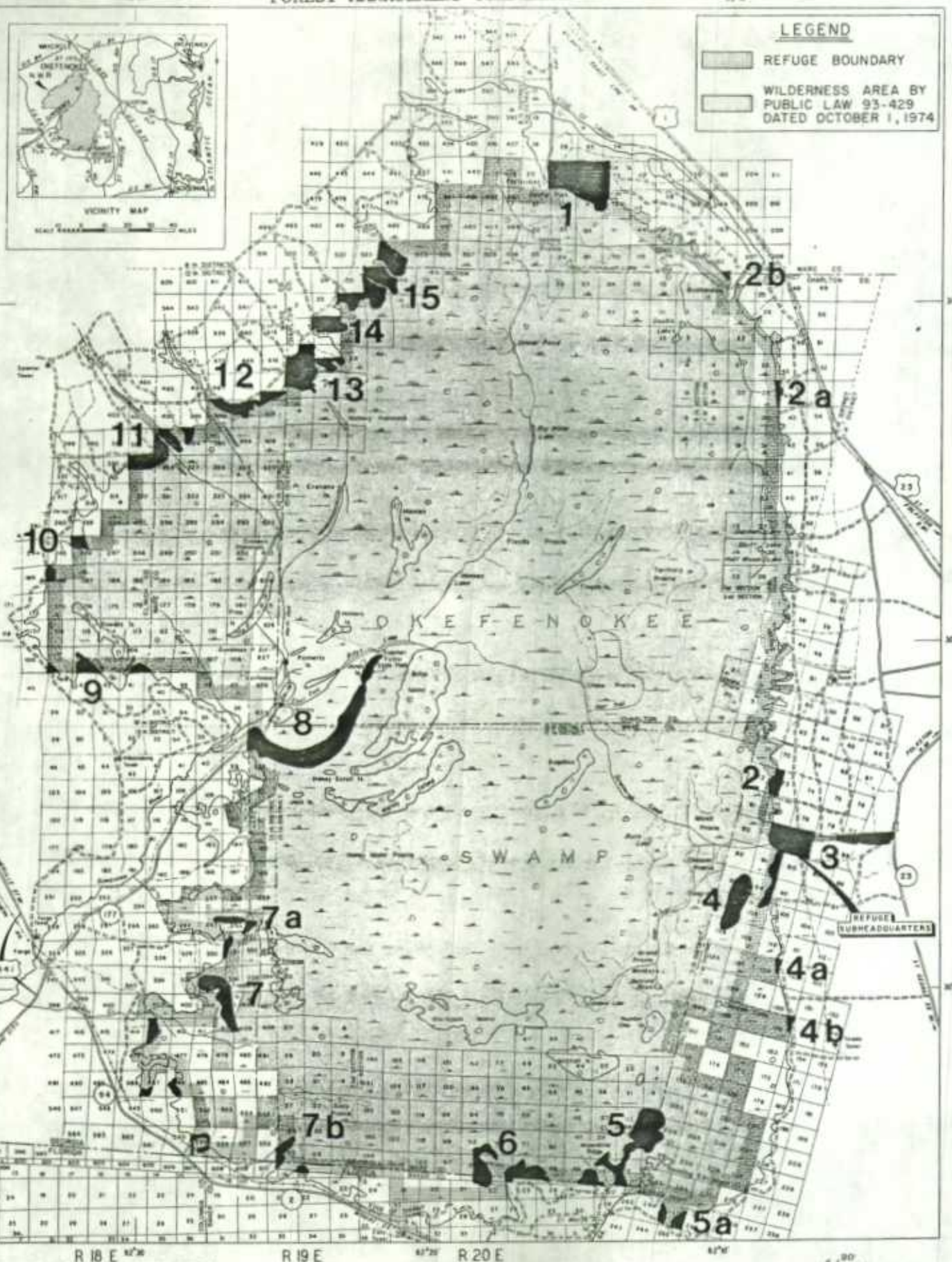
OKEFENOKEE NATIONAL WILDLIFE REFUGE

FLORIDA AND GEORGIA

FOREST MANAGEMENT COMPARTMENTS

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE



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4. To preserve unique vegetative types for scientific study and enjoyment.

5. To manage forest resources on a sustained yield basis.

Management techniques used to accomplish these objectives are:

1. Long rotation (100 years or more) to provide a variety of age classes including overmature stands.

2. Uneven aged stands (no rotation) in some red-cockaded woodpecker support areas and scenic areas.

3. Selective thinning on an eight to ten-year cycle to maintain the canopy density desired for each particular stand.

4. Small irregular stand size to provide more diversity and edge effect.

5. Wildlife openings and hardwood stands located throughout the pine stands to provide a greater variety of habitat types and edge effect.

6. Prescribed burning on various cycles to maintain desired habitat types and to stimulate production of wildlife understory species.

These management techniques, used in conjunction with no management at all, provide the wide variety of habitat types necessary to meet the needs of an optimum number of wildlife species as well as to provide an aesthetically-pleasing variety of forestlands.

Timber Harvest

Five active harvesting permits were issued this year including the sale of pulpwood, sawtimber, poles and stumpwood. Table No. I (page 20) shows a breakdown of forest products receipts for CY 1983. Table No. II (page 21) is a ten-year summary of forest products removed.

Timber Stand Improvement and Other Forest Management Techniques

The following operations were completed this year:

Compartment 1 - Natural regeneration was accomplished in a 16-acre stand using the shelterwood method. The seed trees were removed this year.

Compartment 3 - A timber harvesting permit for thinning was awarded with work beginning in the northern part of the compartment prior to the end of the year. Timber marking was begun on the second sale. When complete, several red-cockaded woodpecker support stands will have competing mid-story trees removed and the rest of the compartment will have received a light thinning.

TABLE NO. 1
FOREST PRODUCTS RECEIPTS - CY 1983

SPECIAL USE PERMIT NO.	PERMITTEE	PERMIT DATES	PRODUCT	VALUE/UNIT	TOTAL VOLUME	TOTAL VALUE	VALUE CREDIT TO CY 1983
OKE 77	Hercules, Inc.	02/23/83-03/30/83	Stumpwood	$6.50/ton	114.95 tons	$ 747.18	$ 747.18
OKE 80	South Georgia Timber Company	06/20/83-08/31/83	Sawtimber Pulpwood	41.09/cd 25.00/cd	102.40 cds 14.15 cds	4,207.97 353.75	4,561.72
TRESPASS	Suwannee Timber Company	--	Pulpwood	24.00/cd	7.00 cds	168.00	168.00
OKE 81	L. C. Shave	09/01/83-08/30/85	Pulpwood	35.25/cd	800.00 cds	29,000.00	12,699.47
OKE 82	W. B. Register	09/23/83-10/23/83	Pulpwood	6.50/cd	10.00 cds	65.00	0.00
TOTAL RECEIPTS FOR CY 1983							$18,176.37

TABLE NO. II

TEN YEAR FOREST PRODUCTS REMOVAL SUMMARY

CY	SAWTIMBER (MBF)	PULPWOOD (CDS)	STUMPWOOD (TONS)	POSTS (EA)	TOTAL VALUE
1974	-	18	357	-	$ 3,637
1975	217.4	296	-	1,400	21,988
1976	-	1,243	1,286	4,309	28,890
1977	-	83	430	20,184	4,761
1978	-	33	551	30,754	5,044
1979	-	743	-	46,964	12,428
1980	-	525	560	-	13,370
1981	-	2,777	74	9,745	48,591
1982	92.3	788	282	22,133	25,180
1983	51.2	371	114.95	-	18,176

Tree Planting

Slash and longleaf pine seedlings were planted on 30 acres of a 80-acre tract destroyed by wildfire in Compartment 5. Site preparation was completed on the remaining 50 acres. Site preparation was begun on 83 acres in Compartment 11 which were destroyed by wildfire. Maple, oak and other hardwood species were replanted in a hardwood plot in Compartment 5.

Obtaining longleaf pine seedlings has been very difficult for the past three years. None at all were available for FY 1984 so no tree planting will occur in 1984.

Unmanaged Forestlands

Unmanaged forestlands include 14,000 acres of pine islands located within the swamp and 165,200 acres of swamp forest. The islands and most of the swamp forest are included within natural wilderness boundaries. The only management activities which take place in these areas are protection, fire management, wildlife surveys and habitat surveys. Wildlife surveys conducted on the wilderness include a red-cockaded woodpecker survey. Billy's and part of Blackjack Islands were surveyed in 1983. Mitchell, Number One, Bugaboo and Honey Islands are also surveyed periodically. Osprey and other water and shore bird surveys are conducted in the forested swamp areas. None of these areas received prescribed fire this year.

A brief description of the unmanaged forest areas follows:

Managed Forestlands (15,500 acres - 4% of refuge area)

Lakes and Prairies (75,994 acres - 19% of refuge area)

Shrub Swamp (125,202 acres - 31% of refuge area)

Unmanaged Islands (14,000 acres - 4% of refuge area) - These islands are very similar to the refuge uplands on the perimeter of the swamp, dominated by pine with hardwood hammocks scattered throughout the higher areas. Major tree species include longleaf pine, loblolly pine, slash pine, pond pine and several species of oaks. On higher areas where longleaf pine dominates, grasses, palmetto, several species of ground oaks and dwarf blueberry and huckleberry are found in the understory. On wetter areas, gallberry and fetter-bush are more predominant.

Black Gum Forests (22,027 acres - 6%) - Black gum dominates the canopy with cassine holly occasionally attaining canopy height. Cassine holly and Carolina ash are dominant understory plants.

Bay Forests (22,027 - 6%) - Loblolly bay is the major species with an occasional cypress or black gum found in the canopy. The understory consists of fetter-bush with some grasses and sphagnum moss.

Mixed Cypress Forests (84,436 acres - 21%) - Canopy and subcanopy are primarily cypress with a slight mixture of black gum and bay in the sub-canopy.

Pure Cypress Forest (36,712 acres - 9%) - These are areas dominated by a cypress canopy. The understory is sparse or non-existent.

9. Fire Management

Prescribed Burning

Some of the many benefits of prescribed burning when properly applied 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.

Prescribed burning is of particular importance in the management of Okefenokee's longleaf pine upland which is used by the endangered red-cockaded woodpecker. Burning helps to maintain these open park-like stands of longleaf pine by killing back the understory and by removing less desired, competing pine species which are less tolerant to fire.

During 1983, 1,229 acres of upland were burned, all on managed forestland. Overall, burning costs were $4.62 per acre.

Several wilderness islands were scheduled to be burned this year using one of the aerial ignition methods. During the entire burning season, however, burning weather, an ignition device, and a helicopter were never available on the same day. These islands were rescheduled for 1984. During the year, a Premo MKIII Aerial Ignition Device was ordered and will be available for the 1984 burning season. This device is expected to receive a great deal of use on these wilderness islands.

A summary of 1983's prescribed burning activities can be found on the following page. Burning costs were unusually high because of the small size of some of the areas burned and unusually high labor costs.

Wildfire

Above average rainfall during June and July and little lightning activity in August and September resulted in a very inactive fire season. During 1983, only one wildfire occurred. This wildfire and a reportable false alarm are described below.

Fire 4027 - FA1 -- This action-type false alarm occurred on September 28, 1983. Ashes and smoke were observed in the vicinity of the "Pocket" on the west side of the refuge. The smoke and ashes were determined to be coming from a prescribed burn on state lands 25 miles to the northeast.

Fire 4030 - Jones Island Fire -- This fire occurred on October 8, 1983 in the vicinity of Stephen C. Foster State Park. The fire was apparently started by a discarded cigarette. Refuge personnel extinguished the fire before it exceeded one acre in size.

A 10-person seasonal fire crew was hired and trained for the refuge fire seasons. The crew worked on fire pre-suppression work during the summer and a few crew members worked on an intermittent basis during the winter wildfire and prescribed burning season. Although Okefenokee had no wildfires, the crew did fight one wildfire on Warsaw Island National Wildlife Refuge.

10. Pest Control

Pest control at Okefenokee consisted primarily of the spot applications of herbicides to maintain the navigability of the 120 miles of boat/canoe trails. Dalapon and 2,4-D were applied as needed along the boat trails to control maidencane and spatterdock. In addition to the treatment of boat trails, spot applications of Pramitol 5PS and Parmitol 25E were conducted to control johnsongrass and nutgrass.

12. Wilderness and Special Areas

Some 353,981 acres of Okefenokee were designated in 1974 for preservation under the Wilderness Act. Preservation consists primarily of regulatory enforcement and monitoring the biological and physical features within the swamp.

The Okefenokee Wilderness legislation mandates the maintenance of approximately 120 miles of boat and canoe trails which were in existence prior to the wilderness legislation. These trails were maintained, and the details of their maintenance are described in the Maintenance Section of this report.

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

1.	Threatened Community Research Natural Areas	
	Pond Cypress Research Natural Area	14,989 acres
	Sweet Bay Research Natural Area	2,560 acres
2.	Research Natural Areas	
	Floyd's Island (swamp island)	160 acres
	Pine Island (swamp island)	90 acres
	Territory Prairie (marsh and bog)	1,450 acres
	Blackjack Island (sphagnum bog)	15,027 acres
	Cowhouse Island (hardwood hammock)	10 acres
	Number One Island (swamp island)	126 acres
3.	Public Use Natural Areas	
	Chesser Island Bay (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

PRESCRIBED BURNING ACCOMPLISHED
(FY 1983 SEASON)

COMPARTMENT	ACRES BURNED	STAFF-HOURS	TOTAL COST	COST PER ACRE
1	989	189	$3,020	$ 3.05
3	28	46	625	22.32
4a	1	8	101	101.00
5	0	18	254	--
8	8	24	264	33.00
12	203	88	1,418	6.99
TOTALS	1,229	373	$5,682	$ 4.62

Stringing fire is a favorite pastime of refuge staff during winter months. Curtis Mitchell, a fire crew member, assisted with fuel hazard reduction activities. 83-5-RAP (12/83)

G. WILDLIFE

1. Wildlife Diversity

The natural habitat diversity of the Okefenokee Swamp provides a home to over 420 vertebrate species according to a biotic study completed by the University of Georgia. These species include 36 fishes, 37 amphibians, 66 reptiles, 233 birds, and 48 mammals.

2. Endangered and/or Threatened Species

Okefenokee is host to five endangered and two threatened species of wildlife.

1. American Alligator -- The alligator is the animal visitors show the most interest in at Okefenokee. Usually, visitors have no problem viewing these animals whose population is estimated at 12,000+.

   The Cooperative Alligator survey was conducted by refuge personnel August 5-11. This year's survey produced 518 'gators over 77 miles of survey routes. This number is less than the 1982 figure of 856 alligators. Low water conditions in 1982 concentrated the alligators in boat trails and lakes resulting in more being observed during the counts. The high water levels in 1983 enabled the alligators to disperse into areas that could not be surveyed.

2. Florida Panther -- No sightings of the panther were reported this year. Usually, several undocumented sightings are made, but none have been confirmed.

3. Bachman's Warbler -- This rare songbird of southern swamps is thought to be found at Okefenokee, but no known sightings have been made in recent years.

4. Bald Eagle -- Okefenokee does not have any known bald eagle nesting sites. Eagles have been a transient species on this area during recent years. Eight mature bald eagles and two immature eagles were spotted during the year. This number includes one bald eagle sited during the mid-winter survey January 3-7 at Minnie's Lake.

5. Indigo Snake -- This large and docile serpent inhabits the upland portions of the refuge. Designated as threatened in 1978, this reptile is a popular item in illegal blackmarket trade. Although Okefenokee has over 14,000 acres of suitable habitat for the snake, no sightings occurred in 1983.

6. Ivory-billed Woodpecker -- Although several sightings are usually reported each year by refuge visitors, none have been documented. Often the suspected ivory-billed woodpecker turns out to be a pileated woodpecker, which is fairly common in the swamp.

   Judging from old reports, it appears the ivory-billed woodpecker was rare even when there were documented sightings in the swamp.

John M. Hopkins reported having seen several while cruising timber for the Hebard Cypress Company in 1901-1903. Although he spent 40 years in the swamp, first as superintendent of the Hebard Cypress Company and then as manager of Okefenokee National Wildlife Refuge, he never saw an ivory-billed woodpecker alive in the woods after 1903.

7. Red-Cockaded Woodpecker

This small woodpecker can be found in several areas of the upland forest surrounding the swamp and on several of the islands within the swamp. The refuge has an estimated population of at least 225 red-cockaded woodpeckers.

The annual red-cockaded woodpecker nesting survey was completed in May with extensive assistance from refuge volunteers. Based on the number of colonies where young were noted during the survey, at least 18 young were produced during 1983. Other colonies may have had young that were not observed. The survey results are summarized below:

COMPARTMENT	CAVITY TREES LOCATED	ACTIVE CAVITY TREES	PERCENT ACTIVE	ACTIVE COLONIES	OBSERVED NESTING ACTIVITY
2	1	0	0%	0	0
3	26	11	42%	3	0
4	1	0	0%	0	0
5	11	6	55%	3	2
7	16	6	38%	2	1
8	1	0	0%	0	0
10	2	0	0%	0	0
12	15	3	20%	2	1
13	3	1	33%	1	1
15	18	9	50%	4	0
Billy's Island	97	56	58%	15	3
TOTALS	191	92	49%	30	8

Woodpecker colonies have also been observed on Blackjack Island, Number One Island, Mitchell Island and Bugaboo Island. A partial survey of Blackjack Island was completed in September.

3. Waterfowl

Okefenokee Swamp does not have large concentrations of waterfowl. Surveying the area is difficult due to its size and the dense vegetative cover. Waterfowl censuses are conducted bi-monthly during the winter months. Peak wintering populations are estimated at 10,000 birds. Wood ducks comprise most of the use with mallards, ring-necks, and blue and green winged teal also seen during the winter months.

Use of wood duck boxes was up from last year with 76% of the boxes being used in the year compared to only 45% in 1982. The 116 boxes are located on the west side of the swamp. Woodpecker and rat snakes cause the greatest predator problems even though the boxes are protected with predator guards.

Outdoor Recreation Planner Bill Kent conducting waterfowl survey in Chesser Prairie. 83-6-JD (02/83)

4. Marsh and Water Birds

The most commonly observed birds in this category are white ibis, great egrets, wood storks, sandhill cranes, anhingans and great blue herons. The rookery which usually occurs on Mack's Island did not develop this year.

Florida sandhill cranes are frequently observed in the swamp's prairies. 83-7-JD (01/83)

Only seventy-two sandhill cranes were sighted during the crane surveys on October 28 and November 1. Over three hundred and fifty cranes were sighted during a waterfowl survey during mid-December. Migratory birds were late arriving this year as compared to the previous year when a population of over 1,000 birds was recorded in the first quarter.

5. Shorebirds, Gulls, Terns and Allied Species

Okefenokee does not have enough open water to attract large numbers of these birds. Killdeer, woodcock and snipe comprise most of the use. Occasionally, gulls and terns are observed.

6. Raptors

Bird surveys and incidental sightings showed no significant change in the raptor populations at the refuge. The most common raptors observed were red-shouldered hawk, barred owl, black vulture and turkey vulture with an estimated population of 400-500 each.

The osprey population was up slightly in 1983 over last year with 30 being counted this year compared to 22 last year.

Swallow-tail kites were observed frequently in the early summer.

7. Other Migratory Birds

The only other migratory birds surveyed were mourning dove and ground dove with estimated populations of 2,000 and 100, respectively. The University of Georgia's Museum of Natural History completed a survey of all vertebrates. That survey listed 233 species of birds which inhabited the swamp.

Refuge personnel assisted members of the Okefenokee Bird Club of Waycross in conducting the annual Audubon-sponsored Christmas Bird Count on December 30. Approximately 3,000 individuals of 45 species were counted within the refuge. American robins, tree swallows, yellow-rumped warblers, eastern meadowlarks, and red-winged blackbirds were the most frequently observed species.

8. Game Birds

The refuge bobwhite quail population remained stable at 2,500. The upland pine forests and islands in the swamp provided good quail habitat. Bobwhite quail habitat was not managed as such, but the refuge's prescribed burning program enhanced the quail population by allowing new growth of food plants.

The turkey population was estimated at 100. Turkey were frequently observed on the wildlife drive at Suwannee Canal Recreation Area.

10. Other Resident Wildlife

The deer population on the 28,000 acres of upland habitat was estimated at 1,000. Direct management of the deer herd was by controlled hunting. In 1980, research conducted by the Southeastern Cooperative Wildlife Disease Study revealed a high abomasal parasites count. The high APC's confirmed the hypothesis that the deer herd was overpopulated. The refuge has been opened to controlled hunting for four years. Visual observation of internal organs of deer killed on the refuge produced no noticeable parasite load. The hunts seem to be successful in managing the deer herd, while providing additional recreation for the public.

Black bear were frequently seen on the refuge. The black bear population was estimated at 150 and appeared to be relatively stable.

The other resident wildlife were not surveyed; however, casual observation by refuge personnel indicated stable population of most other resident wildlife. Mammals frequently observed on the refuge included white-tailed deer, black bear, raccoon, river otter, opossum, bobcat, striped skunk, Florida water rat, gray squirrel, and eastern fox squirrel.

White-tailed deer are plentiful in the upland areas. 83-8-JD (02/81)

11. Fisheries Resources

Sport fishing was popular in the Okefenokee Swamp. The most common fish sought after by fishermen was the warmouth, although many visitors fished for largemouth bass and chain pickeral (jackfish). Flier sunfish were caught in large numbers in the fall. The swamp contains 36 species representing 13 families of fish.

Based on informal interviews with local fishermen, it has been theorizied that several years of low water have had a negative impact on the fisheries in the swamp. Low water congregated fish making them more vulnerable to predation, as well as reducing the area available for spawning.

When the warmouth such as this one are biting, fishermen flood to the refuge. 83-9-Reichelt (01/83)

16. Marking and Banding

Banding continued to be a problem at this refuge. Several years of low water forced refuge personnel to abandon several trapping sites. Areas for duck trapping must be fenced to eliminate predation. Alligators were the chief predators on trapped ducks. Reduction of trapping areas combined with lower waterfowl populations during banding season due to low water seriously affected refuge trapping efforts. During 1983, only six wood ducks were banded.

H. PUBLIC USE

1. General

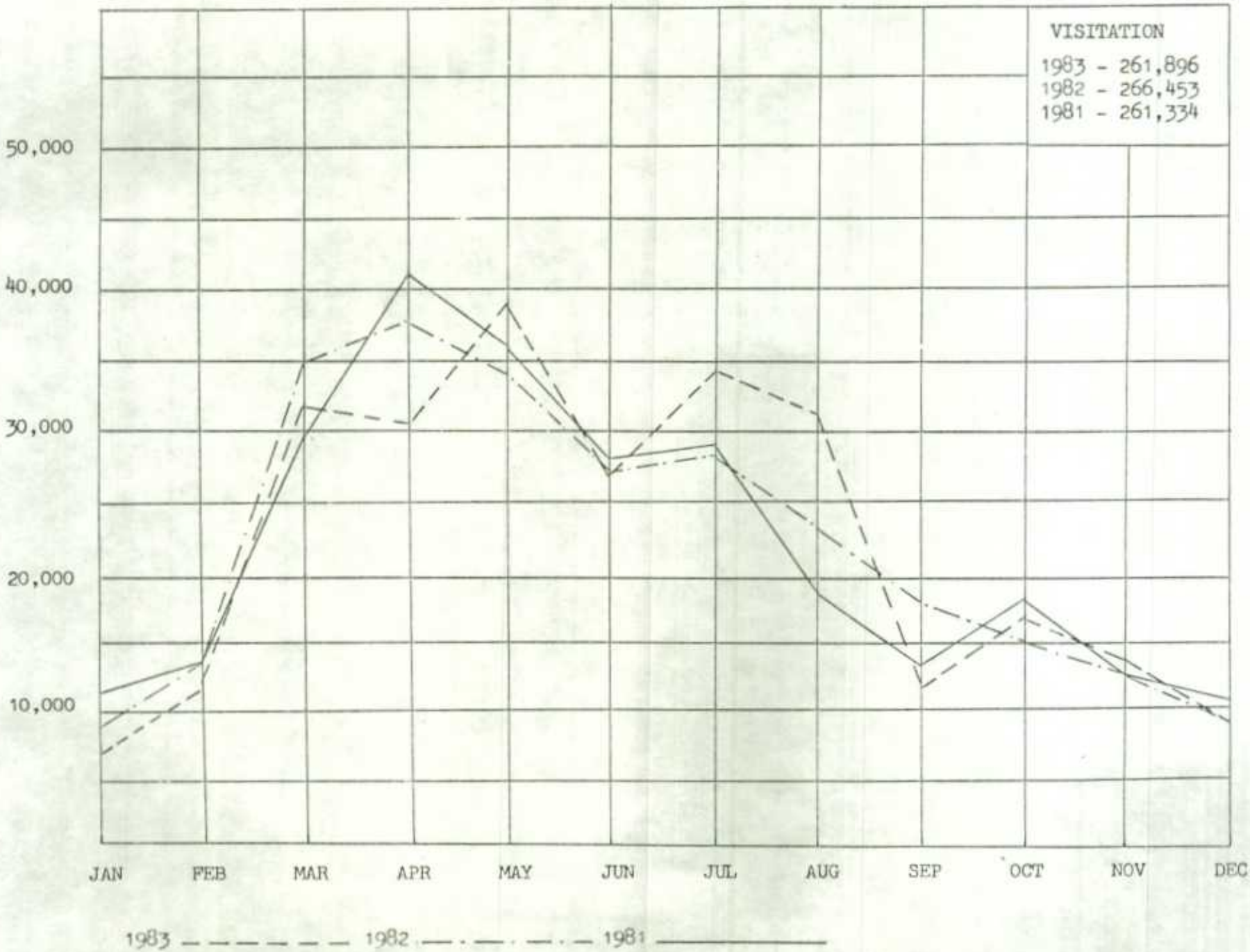
Public use of the refuge decreased in spite of a return to normal water levels in the swamp. The total number of visitors to Okefenokee during 1983 totaled 261,896 -- a 2% decrease in visitation from previous years. The single largest contributor to this decrease was a noticeable absence in fishing pressure. Refuge fish populations have still not recuperated from the droughts of 1980-1981. It's a matter of simple economics, -- when fishermen do not catch fish, they do not return very often.

ANNUAL VISITATION -- OKEFENOKEE NATIONAL WILDLIFE REFUGE

1983 - 1973

YEAR	VISITORS
1983	261,896
1982	266,453
1981	261,334
1980	268,984
1979	277,771
1978	344,262
1977	373,384
1976	361,217
1975	335,058
1974	341,995
1973	314,462
TOTAL	3,406,816

TOTAL REFUGE VISITATION BY MONTH



NUMBER OF VISITORS TO REFUGE

a. News Releases: A total of 78 news releases concerning refuge activities were issued during 1983.

c. Television, Radio, Motion Pictures: 1983 was a much less active year for film makers and journalists than 1982. A summary of those media activity is as follows:

-- Dennis Holt's film on the Okefenokee done for Ted Turner and WTBS aired in May, June and December of 1983. It received very good reviews.

-- Forest Sawyer and a television crew from Channel 5 in Atlanta filmed for several days attempting to put together a television special on the refuge.

-- Channel 5 in Atlanta filmed a special segment for television on the use of our volunteers to aid with the red-cockaded woodpecker survey.

-- J. C. Crimmins and Company of New York used the Swamp to make an audio visual production for educational purposes relating problem solving to the natural environment.

2. Outdoor Classroom - Students

The environmental education program here at Okefenokee was a mixed bag. A total lack of interest and support by the local school administration has severely limited outputs at Suwannee Canal Recreation Area. Don Berryhill of the state's Cooperative Education Service Agency (CESA) operated an outdoor classroom at the Okefenokee Swamp Park entrance on the northern end of the refuge. Schools from throughout southeast Georgia participated in half-day "hands on" activities. Budget constraints throughout many of the involved school districts limited this valuable activity.

ENVIRONMENTAL EDUCATION

	No. Visits	Activity Hours
Students	1,777	7,108
Teachers	174	696
TOTAL	1,951	7,804

3. Outdoor Classroom - Teachers

Dr. John Finley of the Cooperative Education Service Agency for Atlanta brought 25 teachers to the Suwannee Canal Recreation Area for a refuge orientation and program on using facets of the outdoors in the classroom.

Outdoor Recreation Planner Jim Burkhart elaborates on outdoor classroom techniques with a group of school teachers from Atlanta. 83-10-UNK (06/83)

4. Interpretive Foot Trails

Construction of low level boardwalk on the Ridley's Little Island Trail was completed by Youth Conservation Corps enrollees assisted by refuge staff. The official opening of this trail is scheduled for the summer of 1984. The opening of this stretch of trail will permit visitors to traverse 5.75 miles of swamp, upland pine, and hardwood hammock between the Swamp's Edge Interpretive Center and the Owl's Roost Tower at the south end of the boardwalk by foot.

General maintenance of the hiking trail system was an immense undertaking. Without the aid of our youth group programs in keeping the trails clean and trimmed, many would be impassable and deprive visitors of excellent wildlife viewing opportunities.

5. Interpretive Tour Routes

a. Watercraft Tours: The above average water levels of the spring and early summer receded to marginal boating conditions by July. The concessionersat each of the three major entrances operated guided boat tours. One hour guided tours proved to be the norm as falling water levels limited boat access to established canoe and lake areas.

GUIDED BOAT TOURS

	CY 83	CY 82
Suwannee Canal Recreation Area	10,352	10,885
Stephen C. Foster State Park	3,977	5,734
Okefenokee Swamp Park	8,314	7,959

Once again marginal water levels contributed to a decline in use of the wilderness canoe camping trails. Portions of several of the key trails included in the four, five and six-day loops were closed for the major portion of the year.

Administration of a sub-contractor conducting guided wilderness canoeing trips into and through the swamp continued as planned. Unfortunately, the popularity of this service was very low (total of 69 people for the year). Based on the volume of outfitters which two years ago operated illegally within the refuge, this low volume was surprising. Hopefully, time and increased advertising will remedy the situation.

The popularity of our night tour boat has never been in doubt. Without question, this service offers a unique opportunity to view the swamp. Operating only once per month from April to August, no major problems were experienced in filling the boat to capacity.

b. Automobile Tours: The Swamp Island Wildlife Drive was open year round and accommodated 52,297 visitors. During the year, some increase in resistance was experienced to the policy of closing the wildlife drive before the official gate closing hours. Programs to deal with the problem of after hours' use included the night tour boat program and guided owl prowls along the drive and boardwalk. While helping to some degree, these programs do not seem to have satisfied the volume of visitors requesting this type of service. The next step is to set aside specific time blocks lasting as long as two weeks when visitors may be on the refuge after normal visiting hours to view wildlife and our "rosy" "moss draped" sunsets.

INTERPRETATION -- CY 1983

	No. Visits	Activity Hours
Wildlife Trails -- Non-motorized		
Self-guided	84,422	216,436
Conducted	791	2,126
Wildlife Tour Routes - Motorized		
Self-guided	43,699	39,369
Conducted	27,464	39,566
Interpretive Center	31,118	13,648
Visitor Contact Station	59,812	15,581
Interpretive Exhibits - Demonstrations		
Self-guided	158,581	34,904
Conducted	16,579	9,242
Other On-Refuge Programs	44,951	21,780
TOTAL	467,417	396,652

6. Interpretive Exhibits/Demonstrations

Okefenokee is again looking forward to some rehabilitation set for early 1984. Considerable time was spent this year planning for the rehabilitation of several of the interpretive center exhibits as well as the addition of five new exhibits. Construction has been contracted through Wilderness Graphics of Tallahassee, Florida. Many who have visited the Okefenokee and seen our interpretive center will no doubt turn up their nose at this revelation. However, after 10-12 years of dust, insects, and climatic chance, these exhibits were definitely ready for rehab.

Again in October of this year, the refuge participated in the local community's Okefenokee Festival by hosting an open house and folk crafts and exhibits at the restored Chesser Island Homestead. Volunteer Sheila Lewis assumed and carried out the major planning duties. In spite of inclement weather at time (the first in six years), the refuge hosted in excess of 800 people. The refuge's cooperative efforts with the local Chamber of Commerce and the Charlton County Historical Society have certainly propelled this program into the limelight as one of the popular fall traditions.

This was the second year at instituting a Yule Log Christmas Program at the Chesser Island Homestead. The efforts were jointly coordinated with the historical society and proved to be as popular with the locals as any program around. In excess of 250 people attended this year's ceremony. The warmth of the bonfire, hot cider and cookies coupled with the warm Christmas cheer of the visitors added a festive glow akin to holidays once past.

Professor Chris Trowell of South Georgia College presented a slide/tape program centering on his historical research of the early Suwannee Canal Company. The program was a follow-up to the Yule Log Ceremony and was attended by more than 115 people. Audience response was overwhelmingly favorable.

VISITATION

SWAMP'S EDGE INTERPRETIVE CENTER

CY 1983	CY 1982	CY 1981
32,485	35,210	36,251

CHESSER ISLAND HOMESTEAD

CY 1983	CY 1982	CY 1981
16,515	17,244	17,794

8. Hunting

White-tailed deer hunts were held at two locations on Okefenokee this year. Much interest was expressed in these hunts before the season opened; therefore, considerable staff time was spent issuing advance permits. When less than sixty percent of the permit holders showed up, stand-by permits were issued at the hunt site to replace most of the "no-shows."

The hunts at the Pocket Unit consisted of a one-day archery hunt and three separate one-day primitive weapons hunts. Because the hunt area was near the state park boundary, hunters were closely monitored by refuge personnel.

The Cowhouse Island hunts went smoothly with a minimum of refuge staffing. Participation in the archery hunt dropped off from the previous year, possibly because no deer were killed during the hunts. Shotgun hunters were more successful with 28 deer being taken by 198 hunters for a success rate of 14%.

HUNTING RESULTS 1983

	COWHOUSE ISLAND		POCKET UNIT	
	Archery	Shotgun	Archery	Primitive Weapon
# Hunt Days	15	6	1	3
# Hunters	212	198	21	54
# Doe Killed	0	16	0	1
# Buck Killed	0	12	0	3
# Wounded	3	2	1	0
Hunter Success	0	14%	0	7%

9. Fishing

A paltry 15,282 fishermen for the year as compared to 65,000+ fishermen in a good year explains the modest declines in total refuge visitation. Fluctuating water levels during critical spawning seasons is blamed for the poor fishing success rates. Hopefully, several stable water level years and a return to healthy fish populations of the past will bring the fishermen back.

The west side attracted the majority of the fishermen this year with 82% fishing from either the Sill Area or Stephen C. Foster State Park. Many areas on the eastern side of the swamp were unreachable again this fall due to low water conditions.

This angler was happy to show off this largemouth bass caught at the Suwannee Canal Recreation Area. 83-11-JAB (07/83)

11. Wildlife Observation

With the return of marginal water levels to the swamp, observations of wading birds on the refuge increased. The boardwalk observation towers as well as foot and boat trails proved to be very adequate modes for wildlife observation. The fall return of the migratory sandhill crane coupled with the annual feeding binge of the black bear provided ample opportunities for wildlife viewing and provided many thrills for our visiting public.

The refuge recorded 13,846 visitors/9,125 activity hours for foot trail observations, 137,453 visitors/34,459 activity hours for land vehicles and 15,157 visitors/48,193 activity hours for boat and canoe observers.

12. Other Wildlife-Oriented Recreation

Although wilderness canoe trail camping provides for superior wildlife observation, visitors to the developed campground at Stephen C. Foster State Park and at primitive campsites for organized youth groups at Mixon's Hammock and Camp Cornelia are also exposed to a myriad of wildlife species during their visit. In 1983, 16,970 people generated 243,980 activity hours on this category. 12,793 picnicikers generated one activity hour each while 4,043 photographers generated four activity hours per visit.

13. Camping

See Section 12 above.

14. Picnicking

See Section 12 on the preceding page.

17. Law Enforcement

A total of 39 cases were made and processed in Federal Courts this year. Twenty-six of these cases have been closed. The majority of these cases dealt with trespass -- usually in violation of posted hours at Suwannee Canal Recreation Area and Stephen C. Foster State Park.

Resource protection along the remote southern and northwestern boundaries continued to be a problem in 1983. Illegal hunting and trapping were common in these areas. Apprehension of these violators is almost impossible without sacrificing time on other vital refuge operations. However, these areas were patrolled and occasionally staked out when a reasonable probability of successful apprehension existed. Unfortunately, no apprehensions were made during these operations.

Refuge personnel learned that illegal commercial fishing activities may be occurring at the Kingfisher Landing vicinity. Several trotlines were found in the area and removed during periodic patrol of the area. No apprehensions were made.

Perhaps, the most aggravating cases involved those apprehensions of canoeists who failed to comply with the terms of their canoe trail permit. Occasionally, these canoeists would arbitrarily decide to take a route for which they had no permit. When this occurred and they failed to arrive at their designated campsites or destination, refuge personnel initiated search and rescue activities, as the canoeists were presumed to be lost or suffered other problems. Obviously, such violations which resulted in "false alarm" could result in assistance not being available for someone who really needed it, and the "false alarms" were an expense to the refuge. Fortunately, these incidents were not too numerous in 1983, and incidents of lost or injured canoeists were rare.

18. Cooperating Associations

The cooperative agreement with Eastern National Park and Monument Association continued on a day-to-day basis. Thus far, the bookstore has been maintained, but no word is available on how long the ENPMA will continue to be involved with refuges. A representative of Eastern National Park and Monument Association performed an audit on the cooperating bookstore.

Visitors to our interpretive center found over fifty-one books, eighteen topographic maps and two interpretive brochures available for purchase. Total sales for 1983 were $4971.49.

Outdoor Recreation Planner Cheryl Branagan, who arrived in late December, prepares to answer many unusual questions asked by visitors as she reviews books sold at the refuge's bookstore sponsored by a cooperating association. 83-12-UNK (12/83)

19. Concessions

Okefenokee's three major entrances provide the visiting public with concession operations. Of these three, only the concessioner at Suwannee Canal Recreation Area pays a percentage of his gross income to the government. This concessioner's gross income for CY 1983 was $150,742. Total visitation at this entrance was 80,772.

Total visitation to the Stephen C. Foster State Park entrance which operates under a leasing agreement with the Fish and Wildlife Service had 66,599 visitors.

Okefenokee Swamp Park, operated by a private, non-profit corporation, tallied 91,077 visitors for the year.

Mr. Ron Dorsey, Interpretive Specialist, Washington, D. C., toured the refuge investigating concessioner operations on refuges for future policy changes.

I. EQUIPMENT AND FACILITIES

1. New Construction

A 260-foot boardwalk was completed along the Ridley's Little Island Trail. The completion of this boardwalk, which is the second of two boardwalks of similar length along the Ridley's Trail, concluded all new boardwalk construction for the walking trail system at the Suwannee Canal Recreation Area. Refuge personnel and YCC enrollees battled the heat, humidity and insects to complete this project that involved driving the pilings, installing the decking supports and placing the five-foot wide cypress decking on the boardwalk.

2. Rehabilitation

The bottom three-four logs of the log residence at Camp Cornelia were replaced with new, pressure treated pine logs. The old logs in this building, which is a national historic site, had rotted to the point that the structural integrity of the building was threatened. The painstaking process of carefully raising the building, removing the old logs, and notching/installing the new logs was time-consuming. However, the completion of this project should assure that the building will be structurally sound for many years.

3. Major Maintenance

Boat/canoe trail maintenance was an on-going project which consumed more time than any other single maintenance project on the refuge. The maintenance of these trails is mandated by the Okefenokee Swamp Wilderness Legislation of 1974. The trails were checked periodically to assure that they were navigable, that all directional signs were in place, and that all campsites were in adequate repair for use by refuge visitors. The trailcutter removed peat and vegetation from about 50 miles of boat trails in Carters, Sapling, Mizell, Chessers, Chase and Floyd's Island Prairies. Spot applications of herbicides were accomplished along sections of trails in Carters and Sapling Prairies in order to keep the trails open. The chemical toilets were serviced monthly, as the wastes were pumped/hauled from the sites and the needed chemicals were added to the toilets. Fallen trees, limbs, and vines were chopped out of the trails when necessary.

The sewage treatment plant at Suwannee Canal Recreation Area malfunctioned for several weeks during June and July. The system failed to automatically lift the sludge to the aeration/holding tank. After numerous and varied attempts to repair the system, which included removing from the pipes and valves a variety of objects which had been flushed down the toilets, the system resumed normal function. An apparent explanation for the malfunction was that some object prohibited a value from operating properly.

Refuge personnel continued, as time permitted, to mark the refuge boundary along the areas that were donated to the refuge by Union Camp Corporation in 1978. Approximately six miles of the southern and western boundary were cut, marked and painted during 1983.

The various maintenance projects which were accomplished in the forest management compartments are summarized as follows:

Compartment 1: Six miles of roads were graded; all firelines were maintained.

Compartment 2: Graded one mile length of road and maintained all firelines.

Compartment 3: Graded eleven miles of roads and maintained firelines.

Compartment 4: Graded five miles of roads and maintained firelines.

Compartment 5: Graded eight miles of roads.

Compartment 8: Constructed one-half mile of additional firelines.

Compartment 12: Maintained all firelines.

Compartment 14: Maintained all firelines.

This "homemade" log puller was constructed by refuge personnel using excess materials and was very effective in removing logs from the canal. 83-13-JAB (03/83)

Maintenance of forest compartment roads was necessary for access for wildlife and fire management activities. 83-14-UNK (12/78)

4. Equipment Utilization and Replacement

Special fire management funding during FY 1983 permitted the acquisition of new fire management equipment during the year. The new equipment included a 4x4 pickup with water pumper, Rome fireline maintenance harrow, Mathis 2-disk fire plow, Mathis 4-disk fire plow, new radios (which are discussed in more detail under Communications Systems), and a hygrothermograph which records relative humidity and temperature.

The acquisition of the plows, radios, and weather equipment added significantly to fire management capabilities. Unfortunately, the acquisition of a medium class fire suppression tractor was a major disappointment. Forester Ron Phernetton spent considerable time in formulating tractor specifications which would provide the most effective fire suppression tractor for the money. These specifications included direct drive transmission for better drawbar pull, heavy duty drawbar to accommodate fire plows, bulldozer blade with manual angle/tilt functions to reduce the tractor's dependence on hydraulic systems and allow easier removal of the blade, and drawbar hydraulic system to attach to fire plows. However, the Class 1150C tractor, which was delivered in August, was equipped with a torque converter transmission which is slower and more likely to overheat during drawbar applications, a light duty drawbar which could not accommodate the fire plows, hydraulic tilt/angle functions for the blade, and no drawbar hydraulics. Some $3,000 were spent on the new tractor to strengthen the drawbar, add drawbar hydaulics, and install disconnection points in the blade's hydaulic hoses. Yet, despite these additions, the tractor remains ineffective as a fire suppression unit, because the tractor does not have the power and

and speed to pull fire plows during a suppression operation. Concisely, the tractor would be an excellent tractor for construction projects, but the unit is almost worthless for fire suppression operations. At the close of 1983, gears were still in motion to solve this dilemma and prevent such mishaps in the future.

The hull of the Stossel airboat was replaced at a cost of over $6,000. The swamp's acidic water had dissolved the original hull to half its original thickness at certain points. Thus, the hull was severely weakened and had begun to crack. The new Stossel hull was made of heavier gauge metal, and the airboat is no longer stored in the boathouse where it would be in contact with swamp water, except during periods of heavy use.

One of the two propeller shafts and bearings on the trailcutter broke during trailcutting operations in February. The other shaft had broken and was replaced during 1982. The cost of the new shaft exceeded $1,000, because these heavy duty shafts are specially made for these trailcutters and require a set of large, heavy duty bearings which are pressed on the shafts.

Several safety modifications were installed on tractors. A certified Roll-Over Protection System (ROPS) was installed on the IHC TD-9 dozer. The TD-9 had a field fabricated ROPS that did not meet certification requirements. A one-quarter inch diameter wire cage was installed on the Caterpillar D-4, the refuge's primary fire suppression unit, to protect the operation from limbs and other debris which may strike the cab. In addition, the drawbar hitch on the D-4 was raised to reduce the amount of dirt and other debris that accumulates in front of the hitch during fireline construction. In the past, the hitch would pile up so much dirt/debris that the tractor's movement would be impeded.

Several pieces of mowing equipment were replaced during the year. Two John Deere 16-horsepower riding mowers were procured to replace worn-out units. Two tractor-pulled mowers (one side-mounted) were procured for forest compartment access road maintenance.

A "Mud-King" outboard motor was acquired in an attempt to reduce the refuge's dependence on airboats, which are expensive to operate and maintain. The new outboard consists of a 20-horsepower air-cooled engine with the propeller extended about six feet behind the boat and motor. During operation, the propeller glides just under the surface of the water behind the boat, thus the boat can travel through much shallower water than a standard outboard motor. The primary drawbacks for the "Mud-King" is that it is more difficult to turn and slower than a standard outboard of similar engine size. However, the new outboard has proven to be very useful in navigating boat/canoe trails that are shallow and/or choked with vegetation. Thus, the unit has proved to be useful for checking the condition of boat trails and conducting waterfowl surveys.

Biological Technicians Doug Nuss and Tony Gooch designed and fabricated a "V" blade for the D-4. Military surplus metal and grader blades were used for materials, and the blade has performed well in site preparation and fireline maintenance.

Biological Technicians Doug Nuss (right) and Tony Gooch designed and fabricated this V-blade from excess material for the D-4 dozer. 83-15-WCK (01/83)

5. Communications Systems

As the year ended, radio technicians were in the process of revamping the refuge's radio system. The fire management program provided the funds to rehabilitate the system, and the changes in the system are in accordance with recommendations by radio technicians from the Boise Interagency Fire Center. The new radio system should provide much better radio communications over the entire refuge area.

The old radio system was basically comprised of a base station with a 200-foot tower at Camp Cornelia, on the east side of the refuge, and a base station with a 100-foot antenna at Jones Island, on the west side, to communicate with mobiles and porta-mobiles throughout the refuge. With the old system, numerous "dead spots" occurred throughout the refuge area which made radio communications to the base stations difficult or impossible. Thus, a potentially hazardous condition existed for personnel involved in fire management or law enforcement activities, since sure communications with base stations did not exist. The new system will involve the installation of a repeater with a 200-foot tower at Jones Island, retaining the present base station at Camp Cornelia, and installing tractor radios on the fire suppression units that will include both refuge frequencies and the frequency for the Georgia Division of Forestry. Because a repeater will be in the new system, another low-band refuge radio frequency will be installed on the mobile and porta-mobile radios. The new system should be operational early in 1984.

6. Energy Conservation

Okefenokee Refuge achieved a 28% reduction in gasoline consumption in FY 1983 compared to FY 1982. Probably, the main reason for such a large reduction in consumption is that the refuge staff was smaller in 1983 due to the loss of the YACC program and several vacancies for permanent positions. However, refuge personnel also attempted to consolidate trips and use higher mileage vehicles when possible. In addition, the vehicle fleet has slowly acquired higher mileage replacement vehicles over the past few years.

The new Mud-King outboard motor (see Equipment Utilization) may significantly reduce the refuge's consumption of aviation fuel during 1984, since the motor can be a feasible alternative to using an airboat. With aviation fuel costs approaching $2.00/gallon, reductions in aviation fuel consumptions can result in significant money savings.

J. OTHER ITEMS

1. Cooperative Programs

Forestry students from Lake City Community College, supervised by J. Donald Lewis, Jr., Forest Engineering Technology instructor, continued the establishment of continuous forest inventory plots on the refuge forest management compartments. Once these plots are established, data is re-taken every five years. This year's plots were established in Compartments 3 and 4. Data were re-measured in Compartments 8 and 10.

Okefenokee Refuge has two weather stations located at Camp Cornelia and Jones Island. Temperatures and rainfall data from both stations were sent to the U. S. Weather Station monthly. Daily wind speed, direction and wind shift data were provided to them on a daily basis. Rainfall and temperature information was also provided to the U. S. Department of Agriculture and a State of Florida water management district.

2. Items of Interest

Quite a bit of unnecessary excitement was generated in the late spring and summer concerning oil and gas leasing within this refuge. Releases in national news media indicated erroneously that the Okefenokee Swamp was being opened for oil and gas exploration and development. Refuge personnel spent a considerable amount of time in being interviewed by newspaper, radio and television news people and in answering inquiries from concerned citizens. Although the confusion which was generated could have been avoided, the fact that numerous calls were received expressing their concern indicated that the swamp has a strong silent support group willing to lend their assistance if the swamp is threatened.

Biological Technicians Neb Bowen and Gus Saville received their 20-year Length of Service Awards during the year. As mentioned earlier, Neb retired from the Service on June 30.

For a 2-week period in July, Administrative Clerk Cecile Davis was detailed to the Washington Office, Division of Refuge Management. She assisted with the overall administrative duties of that office.

Biological Technicians Neb Bowen and Gus Saville receive their 20-year Length of Service Certificates from Assistant Manager Lloyd Culp. 83-16-TCW (04/83)

Joe Doherty, a refuge volunteer, was presented with a Volunteer Certificate for his photography work for the refuge over a three and one-half year period. He also was recognized in both the regional and national photo contests.

3. Credits

As in past years, the production of this narrative involved many staff members. The following individuals should receive all the credit, praise and/or criticism for the sections listed:

Section A -- Manager Schroer and Assistant Manager Culp
Section B -- Forester Phernetton
Section C -- Manager Schroer
Section D -- Manager Schroer, Outdoor Recreation Planner Burkhart, and Assistant Manager Johnson
Section E -- Manager Schroer, Assistant Managers Culp and Johnson, and Outdoor Recreation Planner Burkhart
Section F -- Assistant Managers Culp and Jolly, Forester Phernetton, and Outdoor Recreation Planner Burkhart
Section G -- Assistant Managers Johnson and Jolly
Section H -- Outdoor Recreation Planner Burkhart and Assistant Manager Johnson
Section I -- Assistant Manager Culp
Section J -- Manager Schroer and Assistant Manager Culp
Section K -- Manager Schroer

This narrative was edited by Manager Schroer, re-edited, typed and compiled by Clerk Pittman, and proofed by Clerk Davis.

K. FEEDBACK

The management of refuges over the past fifteen years or so has become more complicated for field personnel. Most people will agree to this statement with the need for environmental assessments/environmental impact statements, section 7 consultations, archeological surveys, public involvement and a number of other hoops that must be jumped prior to the initiation of certain projects. With this increased complexity, came higher grades for many professional positions. Likewise, the complexity of administrative matters has increased over the years especially in the areas of personnel management, procurement, accounting, etc. Unfortunately, the grade structure for these clerical positions has been lowered over the past years. Most of this downgrading was accomplished through attrition; however, one downgrade from a GS-6 to a GS-5 occurred in this region this year and the GS-6 Administrative Clerk on this refuge is presently being reclassified. When one reviews classification standards, the obvious conclusion is that most standards are specific to a particular type of job, i.e., personnel, procurement, accounting, etc. Clerical staff on refuges are required to be knowledgeable and competent in many different areas; unfortunately, this diversity and complexity are not reflected in the clerical grade structure. OPM and other personnel management offices need to realize that clerical positions on refuges do much more than type, answer the phone and file. They provide a vital part in the total operation of the refuge and should be paid accordingly.

The fire management program has been very effective over the past several years. Many refuges, including this one, have received a lot of new equipment which has in many cases replaced equipment which was unsafe. The ability to maintain a trained fire crew during the fire season has been of tremendous help to this refuge. The crew was used not only in actual firefighting work but also in maintaining fire equipment and firelines so that the refuge will be better prepared to suppress a wildfire when one occurs. The ability to bring a trained fire crew back every year is needed; however, the present appointment of not to exceed a year can only possibly be extended for one year but no more. Bringing a trained and experienced crew back each year improves the efficiency and safety of the program. Perhaps, a special type of temporary appointment should be created for fire crews to solve this problem.