



Okefenokee National Wildlife Refuge

Folkston, Georgia

REVIEW AND APPROVALS

OKEFENOKEE NATIONAL WILDLIFE REFUGE

FOLKSTON, GEORGIA

ANNUAL NARRATIVE REPORT

Calendar Year 2004




Refuge Manager

5-25-05
Date



Acting Refuge Supervisor, Area III

6-6-2005
Date



Chief of Refuges

6/13/05
Date

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INTRODUCTION

The Okefenokee National Wildlife Refuge is situated in the southeastern Georgia counties of Ware, Charlton and Clinch and northeastern Baker County in Florida. The refuge was established by Executive Order in 1937 and consists presently of 395,080 acres. The primary purpose of the refuge is to protect the ecological system of the 438,000-acre Okefenokee Swamp. Approximately 371,000 acres of the Okefenokee Swamp wetlands are incorporated into the refuge including 353,981 acres designated as wilderness by the Okefenokee Wilderness Act of 1974. In 1986, the Okefenokee National Wildlife Refuge received the designation as a Wetland of International Importance by the Wetlands Convention.

The natural beauty of the Okefenokee Swamp was first threatened in the 1890's, when attempts were made to drain the swamp to facilitate logging operations. The Suwannee Canal was dug 11.5 miles into the swamp from Camp Cornelia. After the failure of this project, known as "Jackson's Folly" other interests acquired the swamp and began removing timber in 1909, using a network of tram roads extending deep into the major timbered areas. When logging operations were halted in 1927, more than 423 million board feet of timber, mostly cypress, had been removed from the swamp.

The establishment of Okefenokee National Wildlife Refuge on March 30, 1937, marked the culmination of a movement that had been initiated at least 25 years earlier by a group of scientists from Cornell University who recognized the education, scientific and recreational values of this unique area. The Okefenokee Preservation Society was formed in 1918 to promote nationwide interest in the swamp. With the support of state and local interests and numerous conservation and scientific organizations, the Federal Government acquired most of the swamp for refuge purposes in 1936.

The Okefenokee Swamp is a vast peat bog filling a huge saucer-shaped sandy depression that was perhaps once part of the ocean floor. The upper margin of the swamp, or the "swamp line," ranges in elevation from 128 feet above sea level on the northeast side to 103 feet on the southwest side. The shallow, dark-stained waters of Okefenokee flow slowly but continuously across the swamp toward the two outlets, the famed Suwannee River on the west side and the historic St. Marys River on the southeast. The eight predominant habitat types on the refuge include prairies (freshwater marsh), scrub-shrub, mixed cypress forests, blackgum forests, bay forests, pure cypress forests and managed upland pine forests.

Three primary entrances and two secondary entrances exist on the refuge. The Suwannee Canal, located 11 miles southwest of Folkston, GA serves as the primary access on the east side and is the location of the refuge headquarters managed solely by the US Fish and Wildlife Service. The Stephen C. Foster State Park is located at the refuge's west entrance 18 miles northeast of Fargo, GA. This state park is operated on refuge lands under the provisions of a long-term agreement with the Georgia Department of Natural Resources. The Okefenokee Swamp Park, located about 13 miles south of Waycross, GA serves as the refuges north entrance. This park is administered by a nonprofit organization on refuge and state forest lands. Kingfisher Landing located between Folkston and Waycross and the Suwannee River Sill on the west side are considered secondary entrances into the refuge.

HIGHLIGHTS

- Biological staff banded 15 red-cockaded woodpecker nestlings during the 2004 breeding season. (Section 1.a.)
- A sudden rise in water level caused a large area of peat to break free and surface where sedges and grasses may become established. (Section 3.a.)
- Resource objectives and hazardous fuel reduction was accomplished with 25 prescribed burns for a total of 9,043 acres. (Section 3.e.)
- The refuge is awarded \$500,000 to fund a new concession building as a result of the Okefenokee Wildlife League's participation in the Friends Group Conference held in Washington, DC. (Section 5.e.)
- The refuge signed a Memorandum of Understanding with International Paper for cooperation in providing foraging habitat for red-cockaded woodpeckers on land adjacent to the boundary. (Section 5.e.)
- Refuge Law Enforcement Officer un-covers a possible Lacy Act violation while detaining suspects possessing 1200 pounds of palmetto berries taken from the refuge. (Section 6.a.)
- E.I. du Pont de Nemours & Company donate 16,000 acres to the U.S. Fish and Wildlife Service and The Conservation Fund. (Section 6.h.)
- Refuge staff and volunteers attend a Leave No Trace Trainer Course on the refuge (Section 8.a.)
- The development of a waterway trail from the Atlantic Ocean, through the refuge and out to the Gulf of Mexico is slow but steady. (Section 8.b.)
- In 2004, over 250 volunteers contributed 17,353 hours to the refuge (Section 9.g.)

CLIMATIC CONDITIONS

Climatic conditions are recorded at several locations throughout the refuge. The records of longest duration dating back to 1945 are from a manual National Weather Service station located at Camp Cornelia at the east entrance to the refuge. Since 1999, the data from a Forestry Technology System (FTS) fire weather station has replaced the manual station readings. The refuge also uses weather data from an FTS weather station located on Jones Island. Additional FTS weather stations are located at Eddy Fire Tower and Waycross airport.

The following nine FTS water monitoring stations are currently being used:

Suwannee Canal	Water level and water quality
Jones Island	Water level (addition to Fire Weather Station)
Suwannee Creek	Water level and precipitation
Kingfisher Landing	Water level and precipitation
Gannet Lake	Water level, precipitation, water quality, and fire weather/fuel moisture
Durbin Prairie	Water level and water quality
North Fork (Sill)	Water level
Cypress Creek	Water level and precipitation
Chase Prairie	Water level and precipitation

Precipitation during 2004 resulted in a total of 57.08 inches at Camp Cornelia on the east side of the refuge (Table 1). Rainfall in 2004 was higher than the 59-year average of 52.35 inches. The most significant rain fell in June and July which replenished the watershed after a five-year drought. Near average rainfall levels occurred the remainder of the year despite three Category 4 hurricanes (Charley, Frances and Ivan) passing nearby. Water levels remained high through the fall. Refer to Section 3.a. Water Monitoring.

The condition of the refuge is primarily gauged by the historical records from the east entrance; however, rain distribution varies depending on location. Jones Island located on the west side of the swamp received approximately 55.41 inches of rain through the year. Temperatures ranged from 24°F to a high of 99°F (Table 2).

Table 1. Monthly precipitation (inches) for 2004 compared with the 59-year monthly average at Camp Cornelia.

Month	2004	Average 1945-2003
January	0.67	3.50
February	6.18	3.45
March	1.11	4.30
April	2.60	3.25
May	0.63	3.67
June	13.13	5.83
July	13.11	7.43
August	7.54	7.27
September	6.20	5.37
October	1.73	3.22
November	2.11	2.18
December	2.07	2.87
TOTAL	57.08	52.35

Table 2. Mean and absolute minimum and maximum monthly temperatures (°F) for 2004 recorded at Camp Cornelia.

Year	Average Minimum		Average Maximum		Absolute Minimum		Absolute Maximum	
	2004	90-03	2004	90-03	2004	90-03	2004	90-03
January	40	42	67	67	24	16	82	84
February	43	45	64	71	28	13	82	88
March	49	50	79	77	32	21	87	90
April	52	54	82	82	38	34	90	95
May	63	62	91	89	46	38	98	103
June	70	68	94	92	66	54	98	104
July	71	71	94	94	68	63	98	106
August	71	70	91	93	67	61	99	104
September	71	68	88	89	62	50	95	98
October	63	58	84	82	47	36	95	95
November	42	43	77	75	37	24	89	89
December	39	44	67	67	27	19	84	84

1.

MONITORING AND STUDIES

1.a. SURVEYS AND CENSUSES

Biologist Dean Easton continued with his responsibilities related to red-cockaded woodpecker (RCW) management, breeding bird surveys and aerial surveys for osprey nests, colonial waterbirds and sandhill cranes.

Threatened and Endangered Species

Bald Eagles

Midwinter bald eagle surveys from Georgia are not included in the overall population trend analysis. The refuge has discontinued this formal survey since bald eagles have not historically been seen at the beginning of January. Incidental sightings will be reported if they fall within the surveys target dates and survey status will be evaluated if sightings increase. An adult bald eagle was seen along the entrance road in November and several other sightings near Folkston, GA were logged in 2004.

Red-cockaded Woodpeckers

Population Status

During 2004, all RCW cavity trees in perimeter compartments were evaluated. Billys Island was the only interior refuge island surveyed this year for activity and cavity suitability. The survey suggested the number of active RCW groups increased from 38 to 42 (Figure 1). Although surveys were not conducted on all interior islands, RCW populations have not experienced significant changes. The upland forest compartments contained 18 active and 29 inactive clusters (Table 3) and the interior islands contained 24 active and 21 inactive clusters (Table 4). Although long-term viability of fragmented RCW populations is being analyzed, the natural condition of interior island clusters is of significant regional value. The suitability of the habitat is critical in determining the limiting factors within these populations. Fire is essential in order to maintain understory plant species and improve habitat suitability.

2004 Red-cockaded Woodpecker Populations Okefenokee National Wildlife Refuge

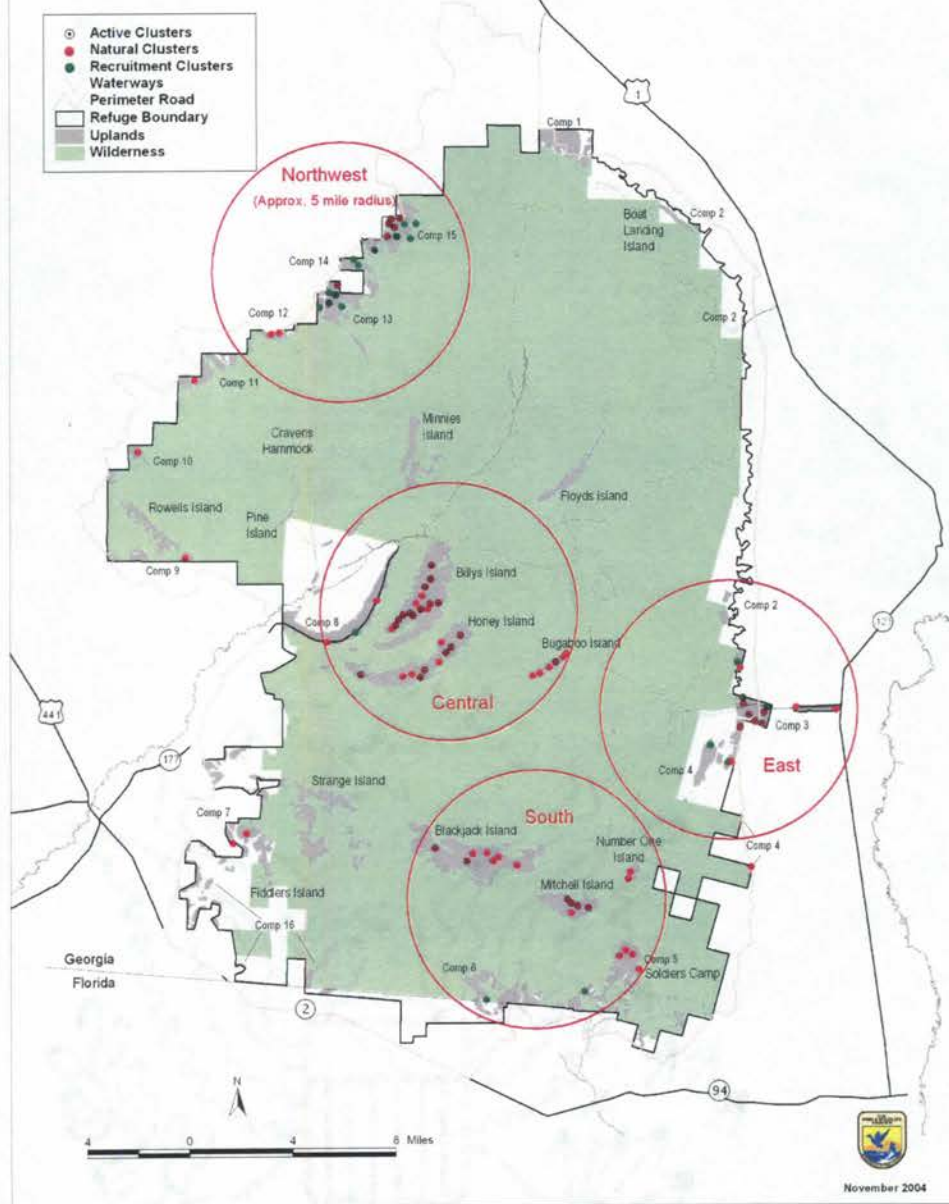


Figure 1. RCW cluster status within the four refuge populations in 2004.

Table 3. RCW clusters in upland forest compartments in 2004.

Compartment	All Clusters		Artificial Clusters	Artificial Clusters Occupied This Year	Inserts Installed This Year	Total Clusters
	Active	Inactive				
2	0	A, B	B	0	0	2
3	C, E, F, G, H, I, J, L	A, B, D, K	J, K, L	J, L	6 1 replaced	12
4	0	A, B	B	0	0	2
5	0	A, B, C, D, E	E	0	0	5
6	0	A	A	0	0	1
7	0	A, C	0	0	0	2
8	0	A, B	B	0	0	2
11	0	A	A	0	0	1
12	0	A, B	0	0	0	2
13	B, C, D	A, E, F	A, C, D, E, F	C, D	16 6 replaced	6
14	0	A, B	A, B	0	0	2
15	A, B, C, E, D, J, I	F, G, H	E, F, G, H, I	E, I	2	10
Totals	18	29	21	6	24 new 7 replaced	47

Table 4. RCW clusters on interior islands in 2004.

Interior Island	Active	Inactive	Total Clusters
Billys Island	A, B, D, G, H, I, J, L, P, Q, S	E, F, K, R	15
Blackjack	E, F	A, B, C, D, G	7
Bugaboo	C	A, B, D, E, F	6
Honey	A, B, C, F, G, J	D, E, H, I	10
Mitchell	B, C, D, E	A	5
Number One	0	A, B	2
Totals	24	21	45

Population Monitoring and Translocations

Northwest Population

In the northwest population five nests were initiated in Compartment 15 with clutch sizes ranging from 1-4 eggs (Table 5). A survey of nest cavities revealed four of the five nests produced young while the fifth nest failed. The cause of this failure is unknown. Cluster I, which was a recruitment site established in 1999, has a helper and breeding pair of RCW's using artificial cavities. Recruitment site 15E has one active cavity tree. The RCW occupying this cluster is likely a juvenile from 15D. No other recruitment stands have shown signs of activity.

Three adult RCW's, two males and one female, were captured for band replacement (Figure 2). One of the adult males was originally translocated from Apalachicola National Forest in 1998 and is the breeding male in cluster 15D. The other male was translocated from Ft. Stewart in 1999 and is currently the breeding male in cluster 15B. The female was translocated from Ft. Stewart in November 2000 and is currently the breeding female in cluster 15D.



Figure 2. Male RCW captured in Compartment 15, cluster D, 24 March 2004.

In November, three pairs of RCW's were translocated from Ft. Stewart to Compartment 13. The birds were released in clusters A, B and C. Throughout December, four of these translocated birds were observed foraging in clusters A and B. Three additional clusters were also established in Compartment 13 to serve as alternative sites for translocated birds.

East Population

Active clusters in the east population remained successful during the 2004 nesting season despite high competition for nest cavities from red-bellied woodpeckers (Table 5). Red-bellied woodpeckers produced young in three different RCW cavity trees in clusters 3C, 3F and 3G. Cluster 3C near the pond on the wildlife drive had 2 adult females earlier in the year but the cavities were abandoned during the nesting season. After the breeding season, two juveniles from cluster 3F near Pogo helibase moved to 3C and took up residence in inserts installed in March. In December, a juvenile female from 3I had taken up residence in 3L, a recruitment cluster established in 2003.

Table 5. Nesting and reproduction in perimeter clusters during 2004.

Cluster	Clutch size	No. Banded	No. Fledged	Sex	Adults
3C	No nesting – two active cavities				2
3E	2	2	2	2 males	2
3F	3	3	3	2 female, 1 male	3
3G	3	3	3	2 female, 1 male	3
3H	2	2	2	1 female, 1 male	2
3I	3	3	3	2 female, 1 male	3
3J	2	2	2	2 males	3
15A	No activity				
15B	3	3	3	1 female, 1 male, 1?	3
15C	3	0	0		2
15D	3	2	3	1 female, 1 male, 1?	3
15E	Recruitment site - one active cavity but no nest				
15F	Recruitment site - no activity				
15G	Recruitment site - no activity				
15H	Recruitment site - no activity				
15I	2	2	2	1 female, 1 male	3
15J	3	2	3	1 female, 2 males	3

Biological staff banded 15 RCW nestlings in Compartment 3 during the 2004 breeding season (Figure 3). Although no adults were captured observations indicate that all these individuals in this compartment have been previously banded. Several cavity trees in Compartment 3 have either died or become unsuitable for RCW's. Following the 2004 breeding season, RCW fledglings were seen traveling between clusters to find suitable roost cavities and returning to natal clusters to forage with adults. An adult red-bellied woodpecker was seen forcibly removing a juvenile RCW from a cavity in cluster 3C. To provide an adequate number of suitable cavities, inserts will be replaced or installed in several clusters before the 2005 breeding season.



Figure 3. Three RCW nestlings with color bands from cluster 3I, May 2004.

Central and South Populations

With the exception of Billys Island, interior island clusters in the central and south populations were not surveyed during 2004. Eleven clusters on Billys Island had some activity while 4 clusters were inactive. Eleven new trees were found this year, in seven different clusters compared to two in 2003; one cluster had three new trees. Six of the new trees had active cavities, three were old cavities, and two were starts. The increased number of new trees may be due to the loss of 18 cavity trees from the Blackjack Bay Complex fires in 2002. Five cavity trees that were alive during the 2003 survey were found dead this year. Two RCW's were flushed from active cavities during the spring checks but no nest or eggs were found.

Habitat Management

Dormant season prescribed burning was conducted in recruitment and inactive clusters. In Compartment 15 prescribed burns effectively reduced fuel load and understory species in the majority of RCW clusters. In addition, thinning of forest stands to improve RCW habitat was completed in Compartment 1 and 15. Unsuitable conditions during the growing season placed prescribed fire operations outside of prescription parameters and resulted in minimal acres treated. As a result interior island clusters were not treated this year. Table 6 includes all growing and dormant season acres for 2004.

Table 6. Prescribed burns in RCW clusters in 2004.*

Burn Category	Active Clusters	Inactive Clusters	Recruitment Stands
growing season	C3-6 (78 acres)		
dormant season	C15-1,2,3,4 (1423 acres) C3-1 (209 acres)	C12-1 (280 acres)	C14-1 (230 acres) C11-1,2,3,4 (580 acres)

* Refer to Section 3.f. prescribed burn area maps.

RCW Habitat Partnerships

The refuge currently has agreements, Memorandum of Understanding (MOU), with two adjacent landowners to manage forest stands for RCW foraging or nesting habitat (Figure 4).

Approximately 8,500 acres of upland forest habitat adjoining refuge forest compartments 1, 2 and 3 are included in these MOU's. In December, the refuge signed a MOU with International Paper (IP) to manage approximately 6,300 acres of upland habitat along the eastern boundary of the refuge between Camp Cornelia and Cowhouse Island as foraging habitat for RCW's (Figure 5). Management of the property, which has been donated to The Conservation Fund, will include longer harvest rotations of thirty years and greater, thinning at 10-year intervals, and replanting suitable areas with longleaf pine.

The second MOU with the Georgia Forestry Commission (GFC) includes 2,258 acres of Cowhouse Island on the Dixon Memorial State Forest (DMSF). This year refuge staff met with the GFC staff at DMSF to discuss management of stands included in the MOU for RCW nesting and foraging habitat. DMSF has done some prescribed burning and replanted longleaf pine on a 58-acre site in 2003.

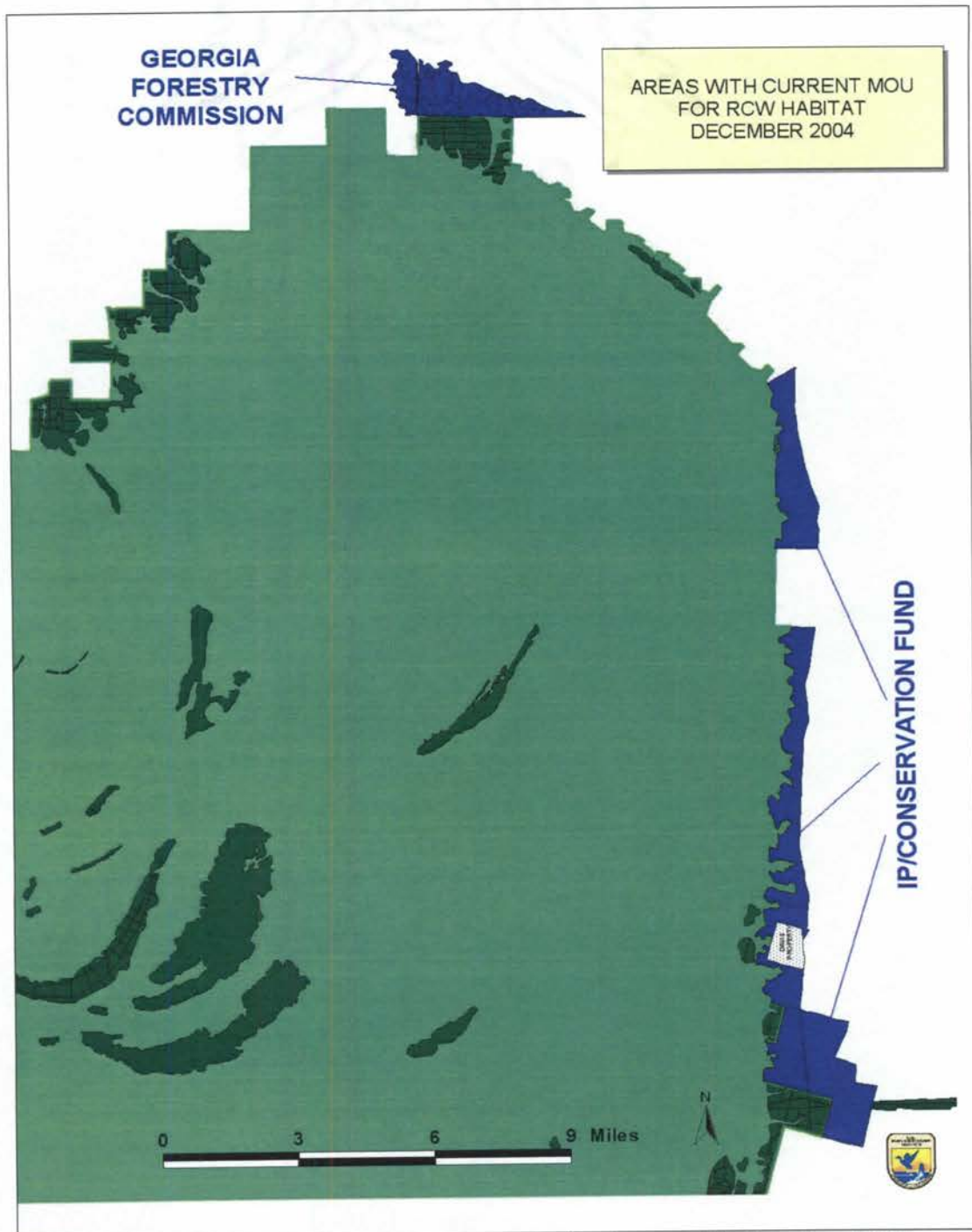


Figure 4. Map of MOU sites along the refuge boundaries that provide foraging (IP/Conservation Fund) or foraging/nesting (Georgia Forestry Commission) habitat for RCW.



Figure 5. Refuge Manager Skippy Reeves and I.P. Director of Sustainable Forestry and Forest Policy Dr. Sharon Haines sign agreement to provide additional RCW foraging habitat.

Recruitment Stands and Artificial Clusters

Four new clusters were established this year in Compartment 13 in preparation for translocations. Each site was provisioned with four new insert cavities. Additionally, six inserts were replaced in each of the two existing clusters in Compartment 13. Two new insert cavities were installed in Cluster 3K.

American Alligator

No alligator surveys were conducted in 2004.

Other Wildlife

Waterfowl

No formal survey of waterfowl was conducted during 2004. In the past, this information was obtained during monthly airboat surveys.

Marsh and Water Birds

Information on the distribution of marsh and water birds is important and may be correlated with other factors. Past monthly surveys by airboat tracked wading birds, including the migratory greater sandhill cranes and the resident Florida sandhill cranes. Airboat use is being evaluated in relation to the Wilderness guidelines. To correlate water levels and food availability with bird distribution this survey is ideally conducted in a short time frame utilizing routes not consistently accessible by motorboats. Through the CCP, other survey methods are being evaluated.

The colonial waterbird survey was conducted, in conjunction with the osprey nest survey, on May 11. One nesting colony of white ibis and great egrets, with approximately 40 nests located north of Stephen C. Foster State Park (SFSP), was found to be active this year following a several year period of inactivity. Previous colony locations were visited but no activity was found.

An aerial survey for sandhill cranes was conducted on November 1. Sixteen cranes were observed within Chesser, Grand, Mizell, Floyds and Chase Prairies. This national survey generally is too early to catch large flocks of the greater sandhill cranes. The birds counted are likely to be residents since most of the migrant population begins to arrive in late November.

Raptors

A helicopter was used to conduct the annual osprey nesting survey on May 11. Six nests were located east of the Sill; three were in good condition and three in poor condition. The three that were in good condition where viable structures and may have been used in 2004. Four other nests seen in 2003 were not found and are believed to have deteriorated naturally. One osprey was seen perched near a nest.

Swallowtail kite sightings were common from March through July in upland forest compartments and interior islands. They are commonly seen south of Folkston, GA near Traders Hill recreation area and St George, GA. Single individuals were seen flying above trees near RCW clusters in Compartments 3, 7 and 15. An aerial nest survey was not conducted in 2004.

Other Birds

Breeding bird point counts were conducted at the end of May and beginning of June at previously established upland habitat sites in Compartment 3 and 5. Counts along the wilderness canoe trails were conducted in Grand, Chesser, Durdin and Carter Prairies. The species recorded this year were similar to those from previous years. A total of 32 different species was identified this year compared to 36, 33 and 30 identified in 2000, 2001 and 2003, respectively. Carolina wrens were the most common species present at all of the 19 survey points.

The annual Christmas Bird Count was held on December 27 with nine participants. Eighty-nine species and 8,037 individual birds were observed, making it one of the highest counts for the area. Tree swallows and American robins were the most abundant species. Special reports were filed for a barn owl and a least sandpiper.

Mammals

The east entrance deer hunt in Compartments 3 and 4 was conducted on October 22 and 23. Due to low harvest numbers, check stations were not set up during the hunt to collect weight or age data. Chesser Island, designated as wheelchair-use only, had a quota of 10 hunters while the remaining area had a quota of 30. Seventy-seven people applied and 34 hunters were selected, four of which were wheel-chair hunters. A total of 18 hunters including at least one wheel-chair participant were recorded each day of the hunt. Eleven deer, nine females and two males, were

harvested.

The Cowhouse Island section of the refuge was open to deer hunting for the fourth year and administered by Georgia Department of Natural Resources (GA DNR) in conjunction with hunts conducted on Dixon Memorial State Forest. Refuge hunters were required to follow the 2004/2005 Georgia state regulation guide pertaining to the DMSF. GA DNR reported only one, 1.5 year old, male deer harvested on the Cowhouse unit. Small game hunting was open on Cowhouse in accordance with state seasons and regulations. There is no information currently available on the 2004 small game harvest.

The Pocket was opened for archery season for the third year from September 11 to October 15. Refuge hunters were required to follow the 2004/2005 Georgia state regulations. There were a total of 652 hunter visits, which was up from 324 hunter visits in 2003. Twenty-three female and 19 male, including one 10-point, ten 8-point, two 6-point and six with 4-point or less, for a total of 42 deer, were harvested.

Bear hunting is not allowed on refuge lands; however, during the 2004 season, 52 bears were taken in the five Georgia counties surrounding the refuge. Of the 52 bears harvested, 42 were male and 10 were females. Only one bear was harvested on DMSF.

Bear Bait Stations

Surveys of black bears visiting sardine bait stations were conducted from July 13-22. Bears visited 13 of the 33 sites for a total of 39 percent. Visits occurred at two stations on Moonshine Ridge, two stations on Fiddlers Island, two stations on Mims Island, four stations on Soldier Camp Island and three stations on the Pocket. Two bears were seen during the survey on Soldiers Camp Island Road and at a bait station on the Pocket. Gordon Jackson, a reporter from the Georgia Times Union, accompanied refuge staff and volunteers and later published a newspaper article on the survey.

Fisheries

The refuge contributes to the Suwannee and St. Marys River fisheries which originate within its boundary. The GA DNR and Panama City Fisheries Assistance Office performed the 2003/2004 winter sample in January (Table 7). The next sample of refuge fisheries is planned for early 2005.

A Ten-Year Assessment of the Unique Fishery of the Okefenokee Swamp was written by Steven Herrington, Karen Popp, Holly Blalock-Herod, Jeffrey Herod, and Laura Jenkins. It concentrated on the fisheries in the eastern portion of the swamp.

Table 7. Electrofishing results through January 2004 compared to previous years.

	East Side										West Side									
Species	Jan04	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Dec94	Jan94	Jan04	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Jan95	Dec93
Pedal Time	0	2.5	3+	4	6	6	6	4	6	6	6	3	3	4	6	6	6	2	6	6
Warmouth	No Sampling	38	26	28	17	4	5	6	21	7	27	66	84	99	65	27	15	9	5	20
Pickereel		18	28	27	34	8	15	43	57	19	87	27	28	34	31	12	25	47	15	37
Lake Chubsucker		35	41	14	16	9	1	1	0	0	0	2	1	0	1	0	0	2	0	0
Sunfish		20	0	0	0	0	0	0	1	2	25	12	3	0	0	0	1	0	0	3
Flier		90	113	171	178	60	98	387	634	427	87	14	10	67	133	35	77	137	29	157
Bowfin		317	719	725	258	123	85	67	169	308	97	1	4	24	181	68	142	41	66	135
Bullhead		3	17	5	15	2	1	0	3	4	16	24	35	25	41	10	52	0	9	39
Other		36	9	14	13	2	2	12	2	0	7	4	80	47	37	1	16	12	0	0
Total		557	953	984	531	208	207	516	887	767	346	150	245	296	489	153	328	248	124	391

1.b. STUDIES & INVESTIGATIONS

Ecological

Streamflow Characteristics Associated with Suwannee River Sill Alterations - Gary Mahon, USGS, Tallahassee, FL

This study was submitted to the refuge and the results were presented at the Suwannee River Basin and Estuary Integrated Science Workshop in Cedar Key, FL. The findings are described in Section 3.a.

Contaminants

Air Quality Monitoring - USFWS Air Quality Division, Denver, CO

Contractor Ron Phernetton operates the air quality station for the refuge. The station monitors air quality through the following programs:

- Interagency Monitoring of Protected Visual Environments (IMPROVE)

- National Atmospheric Deposition Program (NADP)
- Mercury Deposition Program (MDP)

Other Researchers

The following researchers obtained special use permits from the refuge to collect data for various studies:

- Tony Page with the Georgia Forestry Commission supervised the crew conducting and evaluating the Forest Inventory Analysis plots within the refuge. This was the start of a new five-year rotation schedule.
- Bert Deener from the Fisheries Management Division of GA DNR collected five redbfin and five chain pickerel for Michael Butler (Natural Resources DNA Profiling and Forensic Centre of Ontario, Canada) as part of an evolution study of *Esox* species using DNA sequence data.
- Jackie Clay, Interpretive Ranger at SFSP was issued a permit to catch, examine and photograph dragonflies and damselflies for identification and information for future visitor programs. However, during the year, Clay moved on to another position at a different park.
- Volunteer Carol Schneier, a self-taught botanist, searched for and documented rare plants on the refuge for the Georgia DNR Plants of Concern database.
- Mark Stowe investigated the presence of bolas spiders (*Mastophora*) in the vicinity of the Chesser Island Boardwalk to obtain knowledge of their range and biodiversity. He found no bolas spiders along the boardwalk which was expected since he has never seen them over water. He did find a *Mastophora archeri* and a net-casting spider (genus *Dinopis*) near the Chesser Island Homestead.

2.

HABITAT RESTORATION

2.a. WETLAND RESTORATION: ON-REFUGE

In 1998, an Environmental Assessment (EA) of the Future Management of the Suwannee River Sill was completed. The intended purpose of the structure was to hold water within the Okefenokee Swamp during periods of drought in order to reduce the spread of wildfires. The EA determined the Suwannee River Sill did not serve this purpose and if it did reduce fire occurrence, it would be detrimental to the swamp based on current management philosophy. The preferred action proposed by the EA recommended removing the two existing concrete water control structures and breaching the 4.8 mile earthen levee in four places pending the results of hydrologic monitoring. The Service contracted with the U.S. Geological Survey (USGS) to monitor potential downstream effects related to re-establishing a free-flowing river channel as it exits the watershed.

USGS determined:

- No significant changes in ground-water levels at wells measured downgradient from the sill.
- No significant change in concentrations of water-quality constituents in flows at the sill.
- No significant changes in stream water levels downstream from the sill.
- The sill increased the base water levels immediately upstream of the sill by about six feet.
- The sill decreased the peak flow from the structure to Fargo, GA.
- The sill increased the base flow due to reduced gradients within the refuge and leakage through the structure.

Based on these findings, the refuge will continue to pursue the preferred alternative. Approximately \$5 million will be needed to complete this wetland restoration project. Natural hydrologic conditions will be partially restored by allowing water to pass freely through openings created by the removal of the water control structures and additional breaches. The refuge will continue to provide shore fishing opportunities, access to the Suwannee River and promote other recreational opportunities at this location.

2.b. UPLAND RESTORATION: ON-REFUGE

Refer to Section 3.e. Upland Forests.

2.c. WETLAND RESTORATION: OFF-REFUGE

Nothing to Report.

2.d. UPLAND RESTORATION: OFF-REFUGE

Nothing to Report.

3.

HABITAT MANAGEMENT

The 395,080 acre refuge includes most of the 438,000 acre Okefenokee Swamp. To protect this sensitive ecosystem, the refuge has established a set of habitat management objectives:

- To protect the unique environmental qualities of the refuge by perpetuating the health and integrity of the ecosystem through the natural processes of fire and hydrology.
- To provide optimum habitat and protection for endangered and threatened species, including the American alligator, red-cockaded woodpecker and indigo snake.
- To provide optimum habitat for a wide diversity of birds, mammals, fish, reptiles and amphibians.

To meet these objectives, habitat management techniques include prescribed burning, wildfire, timber stand thinning, commercial timber harvest, planting, herbicide application, and trail cutting. The vastness, inaccessibility to most of the swamp, and wilderness designation places additional restraints on management practices.

The most intensive management occurs on the 33,602 acres of upland pine stands. These upland pine forests are managed primarily for the re-establishment of the native long-leaf pine/wiregrass community and the red-cockaded woodpecker. In 2001, retired Forester (Volunteer) Ron Phernetton revised the Habitat Management Plan to encompass all habitats and management. This document has become an integral part of the CCP and will be incorporated into the Habitat and Wildlife Management Step-Down Plan. The draft plan will also serve as a reference for the refuge since it contains details not covered by the CCP.

3.a. WETLAND MANAGEMENT

Water Monitoring

Wetlands comprise 371,000 acres within the refuge. Water levels influence prescribed burning on interior islands, travel and access into certain areas and the distribution of wildlife species. Nine Forestry Technology System (FTS) water monitoring stations are used to record water levels at Suwannee Canal, Jones Island, Suwannee Creek, Kingfisher Landing, Durdin Prairie, Gannet Lake, North Fork Suwannee River, Cypress Creek, and Chase Prairie. Six of the nine stations are also equipped with a precipitation tipping bucket to monitor rainfall in key areas of the refuge. In addition, water quality samples at Suwannee Canal, Durdin Prairie, and Gannet Lake determine pH, conductivity and dissolved oxygen. Durdin Prairie recorder experienced problems for most of 2004.

Water levels throughout the swamp were below the 14 year average for the first half of the year (Table 8, Figure 6, 7). Above average reading were observed for the remainder of the year due to 13 inches of rain recorded in June and July and an "active" hurricane season in August and September.

Table 8. Water levels (msl) at Suwannee Canal Recreation Area (SCRA) and Stephen Foster State Park (SFSP) for 2004.

	SCRA		SFSP	
	2004	Avg 90-03	2004	Avg 90-03
Jan 1	119.73	119.89	114.25	114.54 ₁₂
15	119.64	120.02	114.16	114.72 ₁₂
Feb 1	119.71	120.25	114.24	115.06 ₁₃
15	120.13	120.25	114.80	115.20 ₁₃
Mar 1	120.20	120.26	115.00	115.33 ₁₂
15	120.05	120.37	114.72	115.38 ₁₃
Apr 1	119.87	120.36	114.43	115.18 ₁₃
15	119.81	120.24	114.25	114.81 ₁₃
May 1	119.56	120.08	113.98	114.44
15	119.25	119.81	113.53	114.03
Jun 1	118.74	119.57	113.00	113.86
15	119.61	119.62	114.20	114.02
Jul 1	120.42	119.75	114.60	114.10
15	120.91	119.76	114.74	114.16
Aug 1	120.72	119.82	114.62	114.31
15	120.10	119.94	114.55	114.42
Sep 1	121.03	119.91	115.02	114.34
15	121.81	119.85	117.76	114.42 ₁₃
Oct 1	121.92	119.94	118.56	114.28
15	121.51	120.11	117.45	114.56 ₁₃
Nov 1	121.17	120.02	115.36	114.45 ₁₃
15	120.95	119.96	114.99	114.39
Dec 1	120.90	119.86	114.97	114.33
15	120.75	119.86	114.75	114.39

Subscripts indicate number of years included in the average due to missing data.

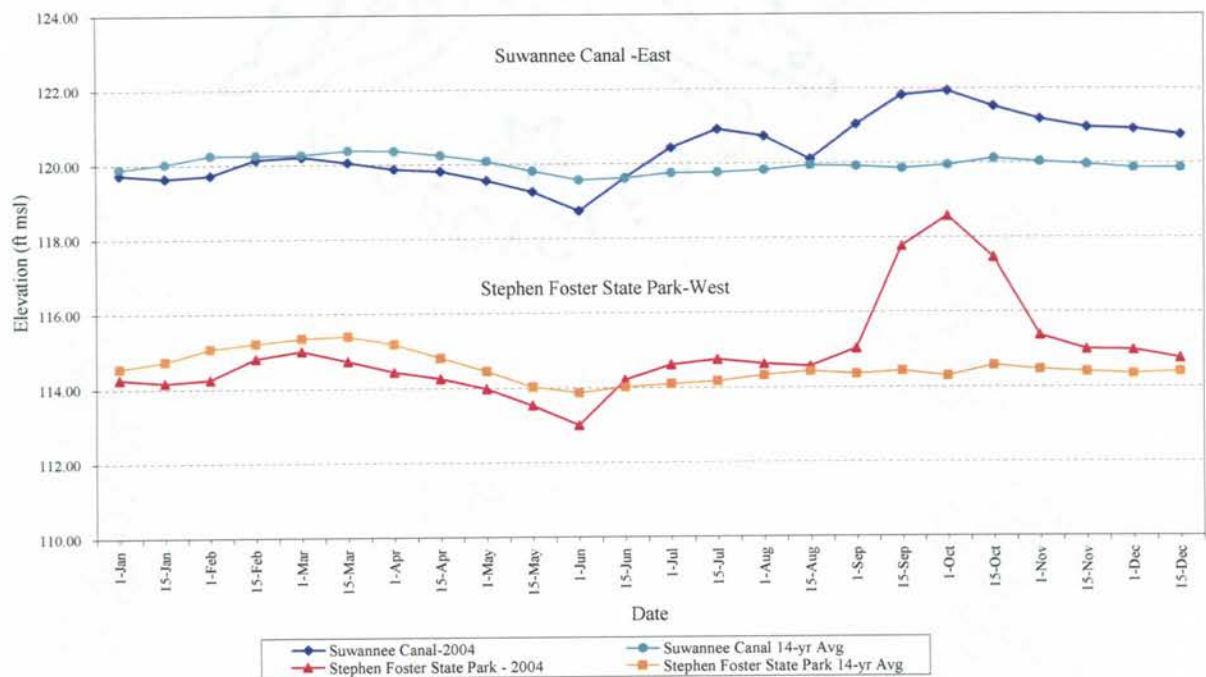


Figure 6. Water levels at Suwannee Canal Recreation Area and Stephen Foster State Park during 2004 compared to the 14-year averages.

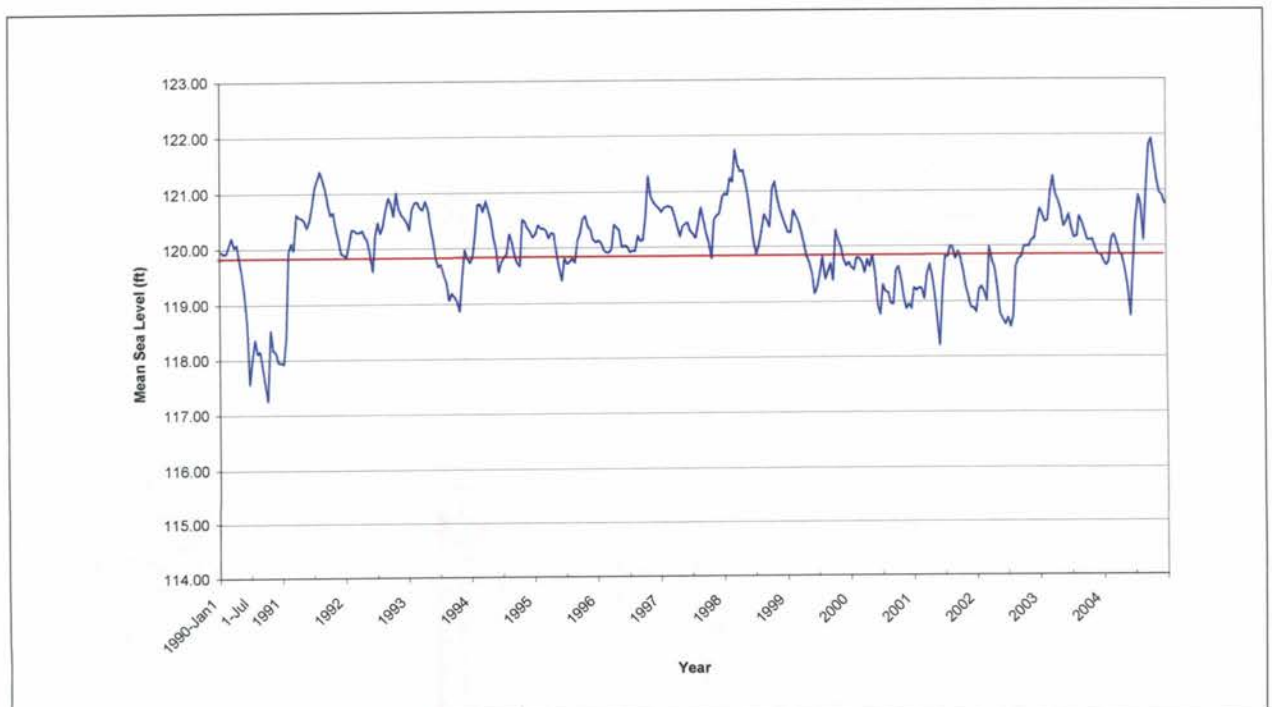


Figure 7. Water levels at Suwannee Canal from 1990-2004.

During fall trailcutter operations a curious condition was reported in Chase Prairie. With higher than normal water levels, it was anticipated that the trailcutter would move unobstructed through the prairie. However, at the north end of the purple trail, the trailcutter hit what felt like a large brick of peat about three feet deep. The prairie looked as if it was drying rapidly because the peat was exposed at the surface. Water lilies and neverwets were laying on the surface as if the water level had decreased suddenly (Figure 8). Probing found that there was a layer of peat approximately 3.5 to 3.75 feet, then a zone of approximately 2.25 feet of water before hitting another layer of peat at six feet. It was speculated that the sudden rise in water level on September 26 caused large areas of peat to break away from the less fibrous peat (approximately three feet below). The buoyancy of the water lilies may have helped pull the peat upward causing the large mats to float. This event may have happened in the past but no record has existed until now. Sedges and grasses are expected to become established on this exposed peat.



Figure 8. Water lilies and neverwets on the exposed peat surface after a 6" rise in water level.

Water Control Structures

The Suwannee River Sill contains two water control structures which remained open this year according to recommendations set forth in the 1998 Environmental Assessment. For more information refer to Section 2.a.

3.b. MOIST SOIL MANAGEMENT

Nothing to Report.

3.c. GRAZE/MOW/HAY

Nothing to Report.

3.d. FARMING

Nothing to Report.

3.e. FOREST MANAGEMENT

Okefenokee NWR contains 347,131 acres of forested land, including 313,529 acres of wetland hardwoods, cypress, and brush lands. The remaining 33,602 acres are upland forest stands of longleaf, slash, loblolly, pond pine, and scattered upland hardwoods. The uplands also contain many bog-filled ponds containing mixed stands of pine, cypress, and hardwoods. Approximately half of the upland forest area, 17,444 acres, is located on islands within designated Wilderness. The remaining 16,158 acres of upland forest are in areas designated as habitat management compartments. Commercial harvesting is permitted in the compartments as a tool to accomplish habitat management goals.

Upland Forests

Goals for upland forests on the refuge include the restoration of the longleaf pine community, which historically covered most of the refuge upland, and maintenance of this habitat through replication of the natural processes. This habitat was reduced throughout the Southeast due to turn of the century logging practices and disruption of the natural, frequent fire regime. Open longleaf pine stands hosted a diverse understory of warm season grasses and many low shrubs and forbs maintained by frequent, low intensity fires. The old growth longleaf pine community was replaced by dense stands of more prolific, less fire dependent overstory and understory species normally restricted to wetter areas. Only remnant stands of longleaf pine remain, representing less than five percent of its former range. Many wildlife species associated with this habitat, including the red-cockaded woodpecker, are either endangered or threatened.

By the time Okefenokee NWR was established in 1936, the habitat on the refuge consisted of a few pure stands of longleaf pine confined to sandy ridges, a few predominately longleaf pine stands, and many mixed pine stands with a few relic longleaf pine trees abandoned by the logging operations of 1920's. Because of the difficulty of re-establishing longleaf pine and continued exclusion of fire, native longleaf pine communities continued to decline in quality and quantity for many years. Understory conditions depreciated during this period, allowing dense hardwood shrubs to replace grasses, herbs and low shrubs common to this habitat. Table 9 lists the present distribution of longleaf pine and other species throughout the refuge uplands. Figure 9 shows the locations of the 16 habitat management compartments and the wilderness islands.

Table 9. Distribution of longleaf pine on upland forest stands.

Species Class	ACRES		Total
	Habitat Management Compartments	Wilderness Islands	
Mature Pine (> 9 " DBH)			
☐ Pure Longleaf Pine (>70%)	1,731	1,429	3,160
☐ Longleaf Dominant (>40%)	1,303	1,305	2,608
☐ Scattered Longleaf (<40%)	2,085	2,522	4,607
☐ Other Pine Species	3,471	8,976	12,447
Young Pine (< 9 " DBH)			
☐ Pure Longleaf Pine (>70%)	1,016	0*	1,016
☐ Longleaf Dominant (>40%)	182	0*	182
☐ Scattered Longleaf (<40%)	410	70*	480
☐ Other Pine Species	3,431	1,730	5,161
Upland Hardwoods	248	509	757
Bottomland Hardwoods	335	22	357
Bog Filled, Forested Ponds	1,894	820	2,714
Open and Administrative Areas	52	61	113
TOTALS	16,158	17,444	33,602

**While there are very few young longleaf pine stands on the wilderness islands, small patches of longleaf regeneration, not constituting a stand, are scattered on some wilderness islands and some compartments. As more of these patches accumulate, they will form multi-aged stands.*

Habitat management tools utilized to restore native longleaf pine communities include:

- Maintenance of multi-aged pine stands.
- Selective thinning on a 10-year cycle to favor longleaf pine.
- Removal of undesired mid-story stems.
- Dormant and growing season fire.
- Several methods of stand conversion include patch regeneration, shelterwood regeneration, direct seeding, planting of containerized seedlings, and mounding.

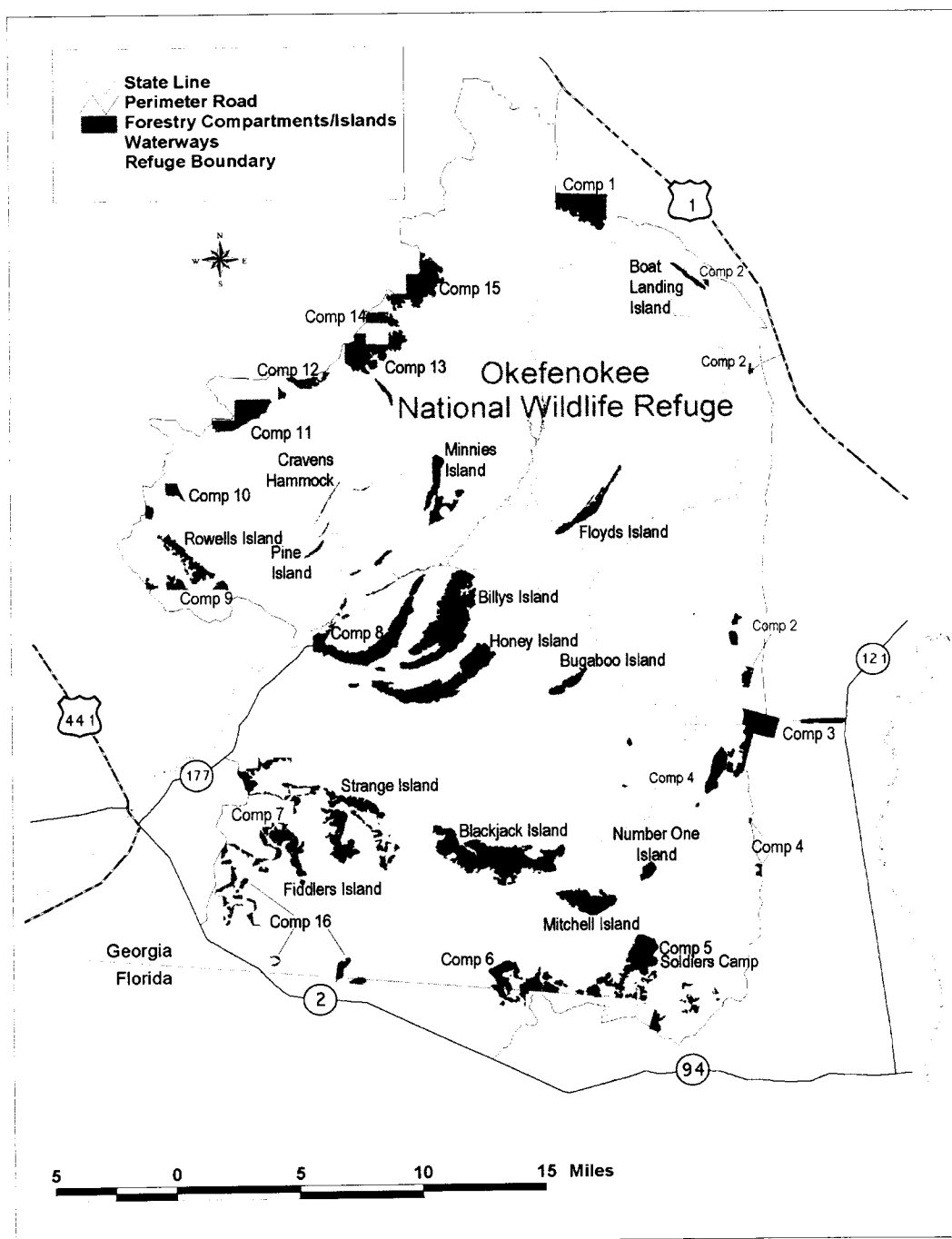


Figure 9. Habitat Management Compartments and Interior Islands.

Restoration activities for the understory component have been limited to dormant and growing season prescribed fire. Existing hardwood stands, openings and wetland areas within or adjacent to the longleaf pine community are included in pre-established burn units and allowed to seek a more natural condition under the influence of fire. These areas provide a variety of habitats to meet the needs of native wildlife and provide an aesthetically pleasing variety of forest lands. Only areas of special interest are excluded from fire.

Fire is the most effective tool available for habitat management on wilderness uplands. Fire may be used to thin young forest stands, remove midstory pines and hardwoods, reduce invading hardwood understory species, prepare seed beds for regeneration, and reduce slash pine and other unwanted pine seedlings. If used skillfully, fire can accomplish most of these tasks without damage to fire resistant longleaf seedlings. All distinguishable islands inside the refuge boundary receive periodic dormant or growing season prescribed fire. Other management activities conducted on the upland wilderness islands include RCW status surveys.

Habitat Management Planning

In 2002, a Habitat and Population Management Plan was drafted, combining management of uplands, wetlands, hydrology, wildlife and other disciplines into one comprehensive plan. This plan is expected to be included in the CCP as a Step Down Plan and evaluated through the NEPA process.

Forest Management Prescriptions

The prescription for Compartment 4 was completed and approved in November. Timber harvesting will start in January of 2005. A forest inventory cruise in Compartment 2 will begin around the middle of the year in 2005. A MOU between the Service and International Paper Company, Inc., will allow longer rotations of pine timber on lands adjacent to the refuge. These adjacent acres will provide a vital corridor between red-cockaded woodpecker populations in Compartments 2 and 3.

Timber Marking

Compartment 1 was divided into two sections and preparations were made for timber marking. Timber marking was completed in Compartment 1 West in February. The timber sale began in May and was completed in July. Timber marking in Compartment 1 East began April and will carry over into early 2005 (Figure 10). The cutter select method of timber harvesting will be used in Compartment 4, eliminating the need for forestry technicians to mark the area.



Figure 10. Timber marking in Compartment 1.

Timber Harvesting

Timber harvesting was conducted in Compartments 1 and 11. The timber producer completed the salvage of wind-damaged timber in Compartment 11. Harvesting began in the west management unit of Compartment 1 in May and was completed in July. Timber harvests play a significant part in restoring the historical longleaf pine ecosystem. More importantly, these harvests help restore and maintain habitat for the threatened and endangered species associated with this ecosystem. Receipts for forest products are listed in Table 10 and a ten-year summary of forest management activity is provided in Table 11.

Table 10. Forest products receipts for 2004.

Special Use Permit #	Permittee	Area	Product	*Value/ton	**2004 Volume Harvested	2004 Receipts
04-028	Mullis Logging	Compartment 1 (west unit)	Pine Timber	\$24.28 (all)	13,830 tons (5,029 cords)	\$335,787.31
03-029	M&G Logging	Compartment 11 Flint Rd. (wind damage)	Pine Timber	\$2.18 (all)	316 tons (115 cords)	\$689.23
TOTALS ALL PERMITS					14,146 tons (5,144 cords)	\$336,476.54

*pw = pulpwood, cs = chip-n-saw, po = poles

** Sale actually sold on weight basis by ton. Converted to cords for reference (2.75 tons = 1 cd.).

Table 11. Ten-year forest products removal summary.

CY	ALL TIMBER CATEGORIES (CDS)	POSTS (EA)	TOTAL VALUE
1995	1,486	--	\$ 77,559
1996	448	--	\$ 23,489
1997	283	--	\$2,778
1998	1,356	--	\$43,438
1999	2,937	--	\$94,619
2000	7,603	--	\$290,028
2001	5,001	--	\$147,693
2002	3,690	--	\$88,049
2003	2,499	--	\$47,285
2004	5,144	--	\$336,477

Status of Longleaf Pine Community Restoration

During the past 29 years, nearly 1,100 acres have been planted. The majority of these plantings were on poorly drained, difficult to plant areas. The forestry staff has experimented with several methods of planting including direct seeding, bare root seedlings and containerized seedlings. Site preparation has varied from clearing and harrowing, planting on natural rises, and mechanical mounding. In addition, seed stock from refuge stands has been collected to compare seedling growth with those supplied by vendors. Although natural regeneration is preferred hand planting containerized seedlings may achieve desired results. Direct seeding techniques, using genetically preferable native stock, may hold some promise.

Minimal site preparation is used in order to save remnant fire dependent plant species within the understory. Open sites receive prescribed fire prior to planting while shrub understories are chopped and burned. Heavy shrub sites may require several burns before they are strip harrowed or mounded to provide planting beds.

Prescribed fire is used within two years after planting to reduce understory competition, stimulate native ground cover and remove volunteer slash pine. Significant results from dormant and growing season fire and longleaf pine management are beginning to surface. Patches of natural longleaf pine regeneration are appearing throughout the upland forest management compartments. Many components of the native longleaf pine community are beginning to appear where growing season fire has occurred. It is apparent through the use of selective thinning and prescribed fire, longleaf pine communities can be restored on refuge upland forest management compartments without clear cutting and planting operations.

Reforestation

Twenty-two thousand containerized long-leaf pine seedlings were obtained from Meeks Farms in Kite, GA. The fire crew, AmeriCorps and Georgia College students from Milledgeville, GA planted seedlings in twenty-four sites throughout upland forestry compartments (Table 12). Location and number of trees planted are recorded on compartment maps and post site evaluations monitor the success of these restorations.

Table 12. Longleaf pine planting sites for 2004.

COMPARTMENT OR ISLAND	MGT UNIT	NUMBER OF SEEDLINGS	AREA (Acres)	REMARKS
Compartment 11	1	3,996	4.0	Trees were planted in several open areas that were created by 2003 wind storm. Also planted LLP patch regeneration area.
	1	381	.5	
	1	2,673	5+	
	1	297	.5	
Compartment 1	1	999	1.0	Trees were planted in logging decks and in patch regeneration sites.
	1	666	1.0	
	1	498	1.0	
	1	542	1.0	
	1	696	1.0	
	1	353	1.0	
	1	430	1.0	
	1	330	1.0	
	1	696	1.0	
	1	5,000	1.0	
Compartment 15	1	333	1.3	Trees were planted in logging decks and in patch regeneration sites.
	1	385	1.4	
	1	666	2.7	
	1	335	0.5	
	2	692	0.3	
	2	681	0.5	
	2	329	0.8	
	2	320	0.3	
	2	381	0.4	
	2	318	0.5	

Timber Stand Improvement

No timber stand improvement (TSI) was accomplished in 2004. Most of the TSI work completed in forest stands, particularly mid-story hardwood removal in RCW foraging stands, is achieved through the use of growing and dormant season prescribed fire.

Wetland Forest

Swamp forest areas include all refuge wetland forest inside the swamp edge and outside the perimeter of the interior islands. The wetland forest community is comprised of 313,529 acres which include:

- Scrub Shrub 230,187 acres
- Mixed (Bay, Cypress, Pine) 55,359 acres
- Broad Leaved Hardwoods 15,424 acres
- Cypress 11,831 acres
- Scrub Pine 728 acres

The basic goal of wetland management is to maintain the mosaic of wetland habitat types including wetland forest. Because most of the wetland area is located within national wilderness boundaries, habitat management activities are limited to natural and prescribed fire, habitat monitoring, and wildlife surveys.

3.f. FIRE MANAGEMENT

Traditional upland fire dependent communities are valuable to many species of native wildlife. This habitat has been drastically altered by changes in the fire regime. Understory fuel loads vary from moderate to extremely heavy and typically recover rapidly after fuel reduction fires. Although upland habitats are fire dependent, fire must be carefully managed to prevent destruction of valuable habitat while reducing unnatural understory fuels. Until upland fuel types are restored, mismanaged fire or wildland fire may destroy valuable habitat.

Within the swamp interior, fire management has a greater complexity. Intense fire is desirable and beneficial under proper conditions, but the probability of fire leaving the swamp and negatively impacting adjacent property is likely to occur. Growing involvement of adjacent landowners in the Greater Okefenokee Association of Landowners (GOAL) resulted in the success of the 124,110 acre Blackjack Bay Complex Fire in 2002/2003 and the continued cooperative ventures, such as relocation and maintenance of the Swamps Edge Break (SEB) and the establishment of 80 helicopter dip sites. These enhancements, along with the cooperative spirit of GOAL members, allow greater flexibility in the use of prescribed and wildland fire for natural resource benefit in the maintenance of upland and wetland habitats with less negative impact on private property. Plans are currently underway to conduct training sessions in 2005 for the identification and removal of invasive and exotic plant species in the GOAL area. GOAL members are also considering writing a Fire Management Plan for the GOAL area.

Prescribed Burning

During the past 32 years, dormant season fire has been used to reduce existing fuels. As understory woody shrub fuels are reduced, growing season fire has been applied to alter the fuel types from woody shrubs to warm season grasses and other ground cover associated with the longleaf pine community. As more acres in upland forest management compartments and wilderness islands are converted to growing season prescribed fire, natural wildland fires will benefit rather than harm the habitat.

A basic fire academy was taught on the refuge in October. Forty-seven AmeriCorps students participated in the class and Team 7 returned to the Refuge to assist in prescribed burning (Figure 11).



Figure 11. AmeriCorps and cadre during S-130/190.

In 2004, hazardous fuel reduction and resource objectives were accomplished with 25 burns for a total of 9,043 acres (Table 13, Figure 12). All burns were completed during the dormant season. A lack of rain (and heavy wildland fire activity) early in the growing season and too much rain starting in June were contributing factors leading to no growing season burns. A backlog of proposed growing season prescribed burns will be rolled over into the 2005 burning schedule. Prescribed fire MOU's were completed with International Paper, Superior Pine, and Rayonier in 2004. Figure 13 depicts the first helicopter burn conducted on IP property under the new MOU.

Table 13. Summary and evaluation of burning activities for 2004.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval.	Total Cost	Cost/Acre	Remarks
C1-1	-	650	0	-	-	-	-	-	Unable to schedule.
C1-2	-	600	0	-	-	-	-	-	Unable to schedule.
C2-1	-	154	0	-	-	-	-	-	Unable to schedule.
C2-2	-	114	0	-	-	-	-	-	Unable to schedule.
C2-3	D743	70	70	02/05/04	G	3B	3,520	50.28	Good burn.
C2-4	-	20	0	-	-	-	-	-	Unable to schedule.
C2-5	D742	24	24	02/05/04	G	3B	3,450	143.75	Good burn.
C3-1	4328	209	209	12/11/04	G	3A	4,400	21.05	Great burn.
C3-4	-	109	0	-	-	-	-	-	Unable to schedule.
C3-6	4185	78	0	-	-	-	-	-	Unable to burn.
C3-9	-	40	0	-	-	-	-	-	Unable to schedule.
C3-10	-	20	0	-	-	-	-	-	Unable to schedule.
C3-11	-	20	0	-	-	-	-	-	Unable to schedule.
C3-MISC (Trash Pile)	D754	1	1	02/08/04	G	3A	3,770	3,770	Great burn.
C4-1	-	287	-	-	-	-	-	-	Unable to schedule.
C4-2	-	285	-	-	-	-	-	-	Unable to schedule.
C4-3	-	98	-	-	-	-	-	-	Unable to schedule.
C5-1	-	1065	0	-	-	-	-	-	Unable to schedule.
C5-2	-	188	0	-	-	-	-	-	Unable to schedule.
C5-3	-	114	0	-	-	-	-	-	Unable to schedule.
C6-3	-	430	0	-	-	-	-	-	Unable to schedule.
C7-1	-	240	0	-	-	-	-	-	Unable to schedule.
C7-2	-	179	0	-	-	-	-	-	Unable to schedule.
C7-3	-	252	0	-	-	-	-	-	Unable to schedule.
C7-4	-	379	0	-	-	-	-	-	Unable to schedule.
C7-5	-	355	0	-	-	-	-	-	Unable to schedule.
C7-6	-	241	0	-	-	-	-	-	Unable to schedule.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval.	Total Cost	Cost/ Acre	Remarks
C7-7	-	114	0	-	-	-	-	-	Unable to schedule.
C8-1	D667	328	28	01/12/04	G	3B	4,470	159.64	Quit due to weather.
C9-2	-	195	0	-	-	-	-	-	Unable to schedule.
C9-3	-	120	0	-	-	-	-	-	Unable to schedule.
C10-1	D789	214	214	02/21/04	G and A	3A	6,250	29.20	Great burn.
C10-2	D789	102	102	02/21/04		3A	5,250	51.47	Great burn.
C11-1	D788	295	295	02/21/04	G and A	3B	10,860	11.87	Overall good burn. *All units in this Compartment were burned together.
C11-2	D788	256	256	02/21/04	G and A	3B			
C11-3	D788	242	242	02/21/04	G and A	3B			
C11-4	D788	122	122	02/21/04	G and A	3B			
C12-1	D790	280	280	02/21/04	G and A	3B	7,250	25.89	Overall good burn.
C13-1	-	126	0	-	-	-	-	-	Unable to schedule.
C13-2	-	580	0	-	-	-	-	-	Unable to schedule.
C13-3	-	236	0	-	-	-	-	-	Unable to schedule.
C13-4	-	225	0	-	-	-	-	-	Unable to schedule.
C14-1	D777	230	230	02/19/04	G and A	3B	5,900	25.65	Great burn.
C15-1	D776	197	197	02/19/04	G and A	3A	7,757	5.45	Great Burn. *All units in this Compartment were burned together.
C15-2	D776	300	300	02/19/04	G and A	3A			
C15-3	D776	471	471	02/19/04	G and A	3A			
C15-4	D776	455	455	02/19/04	G and A	3A			
C16-1	-	295	0	-	-	-	-	-	Unable to schedule.
C16-2	-	211	0	-	-	-	-	-	Unable to schedule.
C16-3	-	55	0	-	-	-	-	-	Unable to schedule.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval.	Total Cost	Cost/ Acre	Remarks
SEB-N	-	200	0	-	-	-	-	-	Unable to schedule.
SEB-NE	-	200	0	-	-	-	-	-	Unable to schedule.
SEB-S	-	200	0	-	-	-	-	-	Unable to schedule.
Billys Island	-	3,329	0	-	-	-	-	-	Unable to schedule.
Blackjack Island	-	2,2800	0	-	-	-	-	-	Unable to schedule.
Boatlanding Island	D741	175	175	02/05/04	A	3A	5,600	32.00	Great burn.
Bugaboo Island	-	352	0	-	-	-	-	-	Unable to schedule.
Dog Fennel Group	-	152	0	-	-	-	-	-	Unable to schedule.
Ellicots Group	-	176	0	-	-	-	-	-	Unable to schedule.
Fowls Roost Island	-	296	0	-	-	-	-	-	Unable to schedule.
Hickory Island	D782	171	171	02/20/04	A	3A	2,000	11.70	Great burn.
Minnies Island	-	882	0	-	-	-	-	-	Unable to schedule.
Number One Island	-	170	0	-	-	-	-	-	Unable to schedule.
Pine Island/Sill	-	280	0	-	-	-	-	-	Unable to schedule.
Rowells Island	D783	763	763	02/20/04	A	3A	2,000	2.62	Great burn.
CFIP – Entrance	D775	92	92	02/18/04	G	3A	2,500	27.17	Great burn.
IP 1518-053	D821	788	788	02/29/04	G and A	3A	5,000	6.35	Great burn.
TOTALS		22,897	5,485				79,977.00	14.58	

IGNITION METHOD	BURN EVALUATION	
G - Ignition by ground crews A - Aerial ignition	<u>Fire and Resource Management Objectives</u> 1 - Prescribed fire failed to accomplish objectives. 2 - Prescribed fire accomplished objectives not within prescription limits. 3 - Prescribed fire accomplished objectives within prescription limits. 4 - Prescribed fire accomplished objectives beyond prescription limits.	<u>Allowable Resource Damage Objectives (Crown Scorch, Mortality)</u> A - Little or no crown scorch. B - Crown scorch within prescription limits. C - Crown scorch exceeds prescription limits. D - Excessive crown scorch - some mortality probable.

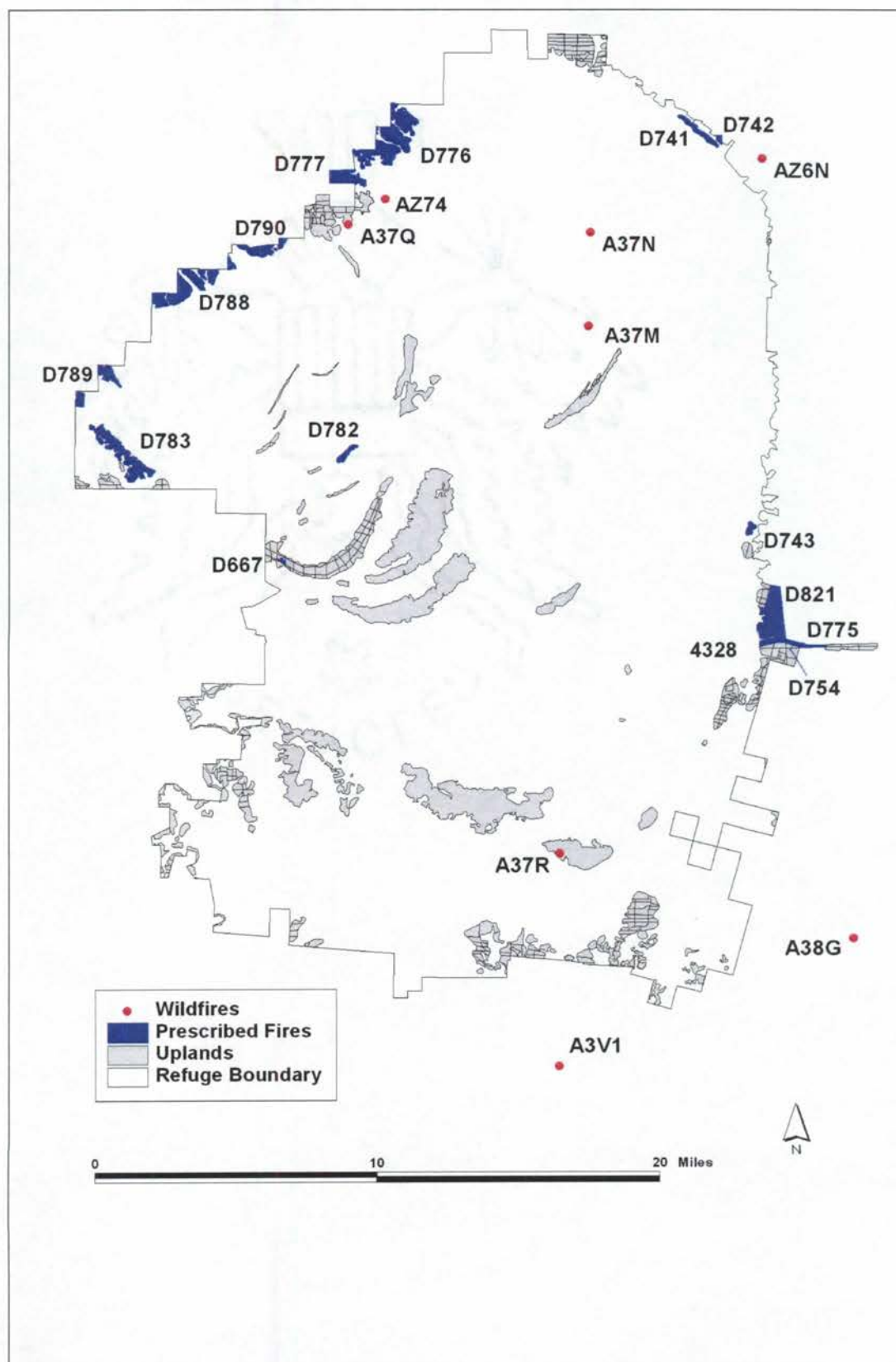


Figure 12. Wildfires and prescribed burns for 2004.



Figure 13. MOU enables refuge personnel to conduct prescribed burn on IP land.

Wildland Fire

After five years of drought and another large fire south of the Refuge on the Osceola NF (A3V1), water found its way back to the system - the rains started in June and continued all summer into an active hurricane season. No major wildland fires occurred on the Refuge, but several lightning caused “natural outs” were recorded in the swamp interior in 2004 (Table 14, Figure 12).

Off-Refuge Fire / Interagency Assignments

Refer to Section 9.c. Training and Travel

Swamps Edge Break

The Okefenokee Swamp and surrounding upland forest depend on fire to preserve the condition and habitat supporting wildlife species native to the Okefenokee NWR. The difficulty of keeping prescribed and wildland fires within the swamp and the refuge boundary, to accomplish desired objectives, presents a difficult and sometimes costly fire management challenge.

The Swamps Edge Break was completed in 1993 to support a fuels management zone around the swamp. This zone allows indirect suppression actions during wildfires and greater use of prescribed fire to accomplish management objectives. The construction and maintenance of the fuels management zone is a cooperative venture between the Georgia Forestry Commission, the Florida Division of Forestry, the Service and GOAL.

Approximately 75 miles of the SEB, from the Pocket section of the refuge to the Toledo Manufacturing property, were harrowed in the spring of 2004. Construction of the Pinhook SEB located on the Osceola National Forest (ONF) was completed in early summer during the Impassible One Fire.

Table 14. Wildfires responded to by refuge staff in 2004.

Fire Number	Name	Start Date	Declared Out	Total Acres	Landowner	Location Lat/Long	Cause
AZ6N	GA-1	01/25/04	01/27/04	320	International Paper	30 59.4 082 08.2	Debris
AZ74	C13 Nat-Out#1	02/03/04	02/04/04	.1	Refuge	30 58.3 082 22	Lightning
A3V1	Suwannee Road 1	05/31/04	06/15/04	34,200	Osceola NF FLDOF		Escaped Rx Burn
A37M	Snag 04-1	05/31/04	06/02/04	.1	Refuge	30 54.3 082 14.4	Lightning
A37N	Snag04-2	05/31/04	06/02/04	.1	Refuge	30 57.3 082 14.4	Lightning
A37Q	Nat Out #2	06/01/04	06/02/04	.1	Refuge	30 57.4 082 23.2	Lightning
A37R	Nat Out #3	06/02/04	06/03/04	.1	Refuge	30 37.4 082 15.3	Lightning
A38G	Nat Out #4	06/03/04	06/04/04	.1	Refuge	30 35.1 082 05	Lightning

Helicopter Dip Sites

Helicopter dip sites are essential to support the fire suppression operations around the boundary of the refuge and the ONF. In 1999, GOAL planned to build and rehabilitate 37 dip sites in and around the refuge. Through understanding and cooperation, 80 dip sites were completed by 2004. This one project reflects the dedication of GOAL members working together on projects mutually beneficial to ecosystem management.

Fire Management Planning

The Fire Management Plan (FMP) was completed in 2004. It is currently undergoing an internal review and has been submitted to the Regional Office for review. The FMP has been incorporated into the CCP as a Step-Down Plan and will be evaluated through the NEPA process with the CCP. The Wildland Fire Use Guidebook was also completed and will be included in the appendix section of the FMP.

3.g. CONTROL OF PEST PLANTS

The trail cutter was in operation between October 1 and November 18 when water levels were high. The brown trail was cut from the sill to Cravens Hammock with a 114.00 foot water level at the North Fork water monitoring station. Despite good water levels, the trail cutter had a hard time cutting through the thick peat layer that came to the surface over approximately 60 percent of Chase Prairie (refer to section 3.a. for further discussion). Territory Prairie was excluded from trailcutter operations.

Growth of shrubs, greenbrier and swamp loosestrife along boat and canoe trails is a continuous problem. AmeriCorps and volunteers performed maintenance throughout the year to clear these trails. Several large floating mats of maiden cane blocked the Suwannee Canal periodically during the fall. Cleanup of fallen trees, from the Blackjack Fire of 2002, continued along the edge of the canal from the 8 to 9 mile marker. These trees tend to collect floating peat and vegetation and will continue to cause trail blockages in the future.

Pesticide Use Proposals (PUP) were submitted for Rodeo, Garlon 3A, Amdro Granular Insecticide, Garlic Barrier, D-Con, WeatherBlok, Recruit II Termite Bait, Demand, and Hydramethlynon Gel. Rodeo is used on mats of maidencane, emergent vegetation and shrub species adjacent to canoe and boat trails. In 2004, Rodeo was only used around parking lots to eliminate weeds. Garlon 3A, used to kill larger trees which can be utilized by cavity dwelling species, was not applied. The remaining pesticides are insecticides used around public facilities and within refuge buildings.

4.

FISH AND WILDLIFE MANAGEMENT

4.a. BIRD BANDING

Refer to Section 1.a. Population Monitoring and Translocations.

4.b. DISEASE MONITORING AND TREATMENT

Concerns related to the West Nile Virus continue. Charlton County has continued a mosquito control program by spraying road sides and housing developments. No mosquito spraying is conducted on the refuge.

4.c. REINTRODUCTIONS

Refer to Section 1.a. Population Monitoring and Translocations.

4.d. NEST STRUCTURES

No maintenance or installation of wood duck boxes was performed in 2004. For information pertaining to RCW insert installation, refer to Section 1.a. Recruitment Stands and Artificial Clusters.

4.e. PEST, PREDATOR AND EXOTIC ANIMAL CONTROL

Feral hogs *Sus scrofa* continue to be dispatched whenever opportunities arise. Four were taken on the east side of the refuge and two were taken on the west side. Rock Doves *Columba livia* better known as domestic pigeons, periodically roost around the refuge shop area and attempts are being made to discourage this behavior. Ten pigeons were dispatched during the year on the east side. One feral dog *Canis domestica* and one feral cat *felis domestica* were also dispatched.

5.

COORDINATION ACTIVITIES

5.a. INTERAGENCY COORDINATION

In 2004, the USGS, Suwannee River Water Management District, and Florida Marine Research Institute co-sponsored a scientific workshop on the Suwannee River Basin and Estuary to discuss current and past research findings, identify information gaps and research priorities, and develop an action plan for coordinated and relevant research activities. Results of the USGS study on the Suwannee River Sill were presented by the refuge. This workshop is a continuation of the 2001 basin-wide conference sponsored by the Suwannee Basin Interagency Alliance.

5.b. TRIBAL COORDINATION

Nothing to Report.

5.c. PRIVATE LAND ACTIVITIES

Nothing to Report.

5.d. OIL AND GAS ACTIVITIES

Nothing to Report.

5.e. COOPERATIVE/FRIENDS ORGANIZATIONS

The Okefenokee Wildlife League (OWL) is a 501(c)(3) nonprofit organization that supports education and research projects on the refuge. OWL provides a part time manager to operate the bookstore, funds special events and supports the refuge with volunteer assistance. Bookstore sales generated by OWL are included in Table 15.

OWL board members Patti Sandow and Pam Sikes and Refuge Liaison Gracie Gooch attended the Friends Group Conference held in Washington, DC. Sandow and Sikes briefed our representatives on issues of concern at the refuge as well as other National Wildlife Refuges. As a result of OWL's participation in the National Friends Group Conference, the refuge received a \$500,000 Congressional add-on to fund a new concession building. By sponsoring the Friends Group Conference and refuge-based Congressional Staffer Days, OWL can focus attention on resource needs.

Table 15. Owl bookstore sales for 2002-2004.

	2004	2003	2002
January	\$3,020	\$ 2,809	\$ 1,674
February	\$3,919	\$ 2,288	\$ 3,546
March	\$6,300	\$ 5,487	\$ 4,889
April	\$6,848	\$ 4,892	\$ 8,982
May	\$3,424	\$ 3,953	\$ 5,942
June	\$2,365	\$ 2,030	\$ 3,193
July	\$2,603	\$ 2,842	\$ 3,347
August	\$1,089	\$ 2,347	\$ 1,726
September	\$937	\$ 1,548	\$ 2,021
October	\$3,572	\$ 3,247	\$ 4,514
November	\$3,547	\$ 3,048	\$ 3,874
December	\$1,899	\$ 2,686	\$ 2,191
Total	\$39,523	\$37,179	\$45,899

The refuge applied for several grants to help improve environmental education (EE) and interpretive programs. In 2004, Banrock Winery donated \$2,500 for interpretive panels and the National Fish and Wildlife Foundation donated \$22,000 to improve an existing hiking trail and additional 100 foot boardwalk with a platform for EE and interpretive programs (Figure 14.)

The refuge signed a MOU with International Paper for cooperation in providing foraging habitat for red-cockaded woodpeckers on lands adjacent to the refuge boundary. The signing ceremony garnered some additional attention because it marked the official opening of the Long Leaf Pine hiking trail. International Paper, through a previously signed MOU, agreed to provide lands for a hiking trail along the historic Suwannee Canal which parallels the refuge's east entrance road. International Paper coordinated with refuge staff for prescribed burning and donated \$13,000 to the Okefenokee Wildlife League (OWL). The funds were used to design, construct and install three interpretive kiosks along the trail.

The refuge MOU with the Georgia Wildlife Federation (GFW) experienced a flurry of activity during the year. The Federation made use of a \$10,000 grant sponsored by the FWS Ecological Services Offices in Brunswick, GA and Jacksonville, FL. The funds were used to pay for the design and construction of exhibits for the new Okefenokee Education and Research Center (OERC) in Folkston, GA. Refuge Public Use Staff monitored the submission and revision process with assistance from the Biology and Forestry/Fire programs. These exhibits are scheduled for installation in 2005.

Late in 2004 an announcement by the City of Folkston, GA and verified with the GWF, stated a request had been made by the GWF to terminate the agreement for the management and operation of the OERC. The City is currently forming a Board of Directors to develop a plan for the future management of the facility.



Figure 14. Refuge personnel with volunteers and AmeriCorps team members after completing the Mizell Prairie boardwalk.

6.

RESOURCE PROTECTION

6.a. LAW ENFORCEMENT

At the end of 2004 the refuge employed one Full-Time Law Enforcement Officer (FTLEO) and three Dual-function Law Enforcement Officer's (DFLEO). James Shelton is currently the FTLEO and Deputy Project Leader Shaw Davis, Refuge Ranger Shawn Gillette and Engineering Equipment Operator Stacey Welch fill the DFLEO positions. Officers made 42 Federal cases and 25 State/County cases this year (Table 16 and 17). FTLEO Shelton has taken on additional responsibilities as a Field Training Officer (FTO). Following 17 weeks of Basic Training, new officers spend 10 weeks in the FTO program.

Table 16. Refuge Violations

Refuge Violations	Number of Cases
Possession of a Firearm on a NWR	19
Violation of State Vehicle Laws	8
Violation of a Refuge Special use permit	5
Trespassing on a NWR	3
Operation of a motorboat with invalid registration	2
Possession of a controlled Substance on a NWR	1
Use of a Spotlight to locate wildlife on a NWR	1
Operation of a motorboat without PFD aboard	1
Off road travel in a closed area	1
Possession of a over-limit of fish	1
Total	42

Table 17. Violations written by GA DNR Officers and County Sheriff Departments

Violations	Number of Cases
Possession of a Controlled Substance on a NWR	8
Speeding	6
Possession Of a Drug Related Object	5
Operation of a Motor Vehicle with a suspended License	2
Driving under the Influence	1
Boating under the influence	1
Operation of a motor vehicle with a invalid Tag	1
Operation of a motor vehicle without the required insurance	1
Total	25

Refuge Law Enforcement Officers (LEO) wrote 43 incident reports ranging from trespassing by migrant berry pickers to the alleged disposal of a homicide victim in a remote area of the refuge. In September, LEO Welch was patrolling the west side of the refuge when he came across a vehicle with seven migrant workers loading bags of what was later identified as palmetto berries. Officer Welch stopped the vehicle and attempted to communicate with the subjects. The driver of the vehicle possessed a Florida Drivers License and a Permanent Resident Card. The other subjects could not produce identification and did not speak English. The berries were seized by the officer and information was gathered on the driver. It was estimated that the pickup contained over 1,200 pounds of berries valued at \$6,000.00 (Figure 15). The berries are used by companies in Florida that make dietary supplements. It is then sold as a supplement for prostate conditions. All information on this case was forwarded to Division of Law Enforcement for a possible Lacy Act investigation. No information has been received from Office of Law Enforcement concerning this case. It is thought that the palmetto berry crop in Florida was ruined by the extensive hurricane season and the berry pickers migrated north to Georgia to supplement their harvest.

In July of this year, FTO Shelton was contacted by the Georgia Bureau of Investigation (GBI) concerning the alleged disposal, at Kingfisher boat landing area, of a murdered female hitchhiker from Florida. The GBI felt that the information was not very credible, but wanted to check the area to rule out any doubt. GBI agents, Charlton County Deputies, Refuge LEOs, and cadaver dogs searched the area and found no evidence of a victim. The case is currently closed until further information is made available.



Figure 15. Palmetto berries seized by Refuge Officer.

6.b. WILDFIRE PREPAREDNESS

Refer to Section 3.f.

6.c. PERMITS AND ECONOMIC USE MANAGEMENT

Refer to Section 1.b, 3.e.

6.d. CONTAMINANT CLEANUP

Nothing to Report.

6.e. MANAGE WATER RIGHTS

Nothing to Report.

6.f. MANAGE CULTURAL RESOURCES

Nothing to Report.

6.g. FEDERAL FACILITY COMPLIANCE ACT

Nothing to Report.

6.h. LAND ACQUISITION

The Conservation Fund (TCF), accepted a donation from E.I. du Pont de Nemours & Company (DuPont) of approximately 16,000 acres of vital habitat along the eastern border of the refuge. The donated land, is located inside the refuge acquisition boundary, and precludes the development of a proposed titanium mine along the boundary. In commemoration of the National Wildlife Refuge System Centennial, TCF transferred 6,000 acres to the Service. Official transfer of the land had not been completed at the close of 2004. The Conservation Fund will work with the State of Georgia and local community to determine the most appropriate long-term steward of the remaining lands.

As part of the land-transfer agreement, International Paper will retain timber and recreational rights on the donated acreage through 2081. The refuge and IP have longstanding agreements established to protect wildlife resources and will continue to work together in the future.

6.i. WILDERNESS AND NATURAL AREAS

Discussions on minimum tools used within the Okefenokee Wilderness Area continued throughout the year. A flow chart was developed to facilitate the decision making process regarding trail maintenance. The refuge's management actions within the Wilderness are being evaluated through the Minimum Requirement Decision Guide and will be addressed in the Comprehensive Conservation Plan (CCP).

During 2004, administrative trips into the Wilderness Area were documented. One hundred twenty one working days were spent in the wilderness.

6.j. THREATS AND CONFLICTS

Iluka Mining Company began mining in Brantley County in 2003 and moved into Charlton County in 2004. They are a small titanium mining company exploring possible mining opportunities on lands east of Trail Ridge which runs east of Route 121, to the Florida border. Iluka currently provides titanium for Dupont.

7.

ALASKA ONLY

8.

PUBLIC EDUCATION AND RECREATION

8.a. PROVIDE VISITOR SERVICES

Visitor Service Highlights

The public use staff spent a large portion of the year improving public use services, working on the public use section of the Comprehensive Conservation Plan and conducting public Outreach programs and festivals. The Okefenokee Festival and Chesser Island Christmas Program saw record attendance and our staple of seasonal interpretive programs, such as our Owl Prowl and evening Star Gazing events also saw an increase in attendance. An unusually wet summer increased water levels in the swamp, allowing staff and volunteers to re-open trails which were previously closed due to low water, resulting in an increase in the number of canoe/kayak trips into the Wilderness area.

The public use staff worked very hard this year. They successfully improved our educational programs, hosted a Project Wild workshop for teachers in Folkston and assisted in coordinating an Aquatic Project Wild course on the refuge. A revised Junior Ranger Summer Camp program was developed, which turned out to be a big hit for the local community.

The refuge collaborated with International Paper Company (IP) to develop the *Longleaf Pine Interpretive Trail*, which crosses both refuge and IP lands. Three new kiosks, paid for by IP, were developed for this trail, and installed by refuge staff.

Refuge Ranger (Ranger) Burgos left Okefenokee NWR in May and accepted a similar position at Vieques NWR. Burgos was replaced by Ranger Gillette, who transferred from Chassahowitzka NWR on April 5, 2004.

The July staff safety meeting was conducted at the new Suwannee River Visitor Center in Fargo. This facility is managed by Stephen C. Foster State Park (SFSP) located within the refuge. A few months after our meeting this facility was damaged when the Suwannee River flooded the basin where the visitor center is located. Repairs were subsequently made, and the facility reopened in December.

Visitor Use Statistics

Visitors to Okefenokee NWR came from all 50 states and over 35 countries. Tables 18, 19, and 20 indicate visitation decreased approximately 2% in 2004 compared to the previous year.

Table 18. Visitation by entrance from 2000-2004.

Entrance	2004	2003	2002	2001	2000
East	141,614	116,107	111,439	113,463	84,471
West	159,787	193,205	147,312	164,430	93,177
North	58,631	60,347	61,019	71,543	64,724
Total	360,032	369,659	319,770	349,436	242,372

Table 19. Day-use for 2004.

Trail	Number of Visits
Homestead Trail	1,171
Deerstand Trail	2,810
Boardwalk ("Swamp Walk")	22,262
Upland Discovery Trail	3,515
Canal Diggers Trail	2,810
Swamp Island Drive (auto tour)	70,277
Ridley Island Trail	2,810
Phernetton, Long Leaf Pine Trail	2,810

Table 20. Visits to Interpretive Exhibits for 2003-2004.

	2004	2003
Richard S. Bolt Visitor Center	35,440	49,675
Chesser Island Homestead	23,402	24,771

Public Use Facility Improvements

Refuge volunteers and AmeriCorps continue to help trim boat, canoe and hiking trails. A new observation platform was constructed in Mizell Prairie, refer to section 5.e. for more information.

Policy

Entrance Fees

Entrance fees are collected at the West Entrance, SFSP and the East Entrance concessions. Okefenokee Adventures (OA). Entrance fees are also required to access the refuge from the Suwannee River Sill and Kingfisher Landing. At unstaffed locations, visitors are required to pay at the East or West Entrances or purchase their entrance document by mail. The remoteness of these areas and limited security make a self-service fee station impractical.

Fee booth operation at the East Entrance is staggered to meet projected demand throughout the year. The program is being evaluated and adjusted to meet the needs of both the refuge and Okefenokee Adventures.

Accountable passes continue being distributed to daily visitors and placed on vehicle dashboards. In the past, other passes were distributed for administrative purposes, school groups, and bikers. These passes were condensed into one single pass in order to reduce paper and confusion. This pass can be issued to visitors who own traditional credit card-sized passes such as the, Golden Eagle Passport, Golden Access Passport, and Golden Age Passport to prevent their official pass from falling into the dash.

Guiding

If an organization or individual charges a fee for tours of the refuge, whether a business or non-profit organization, they must abide by the refuge policy and obtain a Guide Permit. In 2004, permits were issued to four Overnight Refuge Guides and nine Day-Use Refuge Guides. Current guidelines limit the number of Overnight Guides to 15 and Day-Use Guides to 100.

Wilderness Canoe Program

Increased water levels in 2004 provided favorable conditions for conducting trail maintenance on Wilderness Canoe Trails. Ranger Barber led several work groups, comprised of AmeriCorps, volunteers and maintenance staff from SFSP, in performing this important work. Barber and his crew cleared approximately fifty miles along the Orange, Red, and Green Trails. Their work made it possible to get the mechanized trailcutter into locations which otherwise would have been inaccessible to this important piece of equipment.

Interpretation

Refuge staff provided several programs and orientations for Elderhostel groups, Boy Scouts, 4-H Clubs, Cub Scouts, day care facilities, Jacksonville Naval Air Station, YMCA, church groups, primary and secondary school groups, college classes, and Florida and Connecticut Audubon Societies. Refuge staff and volunteers spent time roving on hiking trails, conducting native plant and bird hikes and providing interpretation at the Chesser Island Homestead, Coffee Bay and Monkey Lake Day-Use Canoe Shelters, and Billys Island. New interpretive programs were developed and are currently being presented to the public (Figure 16).



Figure 16. Naturalist and educator Don Berryhill demonstrates the absorption power of sphagnum moss to volunteers and AmeriCorps team members.

Evening Owl Prowls were presented to visitors by refuge staff, volunteers and AmeriCorps. Owl Prowls are currently held the second Saturday of each month beginning in November and ending in May. Attendance increased in 2004.

Efforts to partner with the Northeast Florida Astronomical Society (NEFAS) paid off with a Star Talk and Night Walk program conducted by NEFAS volunteers on March 13. The event was held at the Visitor Center parking area where 62 participants were instructed on constellations and telescope operation.

A permanent exhibit was constructed and installed at the Okefenokee Chamber of Commerce Office located in the train depot in Folkston, GA. The exhibit provides information about refuge management priorities, wildlife and recreational opportunities. A brochure holder contains information for interested visitors.

The Visitor Center exhibits required extensive maintenance throughout the year. The audio/visual projector was replaced and four computer stations have required repair, replacement or software maintenance.

Environmental Education

An initial draft of the *Environmental Education Step-down Plan* was written by Ranger Eckberg. This draft plan sets the direction environmental education programs will move toward during the next fifteen years. The plan is based on the preferred alternative under the CCP.

Several revisions were made to the *Procedures for Scheduling Groups* form. The new form will be more efficient and easier to understand. The *Fee Waiver Request* form was revised to clarify the criteria used when determining if applicants seeking entrance fee waivers met federal requirements.

A *Group Activities and Programs* handout was printed to be used by teachers and group leaders interested in scheduling a program at Okefenokee NWR. These are part of a new informational packet mailed out to interested parties. This information will also be available on the new refuge website, scheduled to be online spring 2005.

Programs

Environmental education programs were presented to school groups throughout the year (Table 21). The new curriculum-based programs meet the revised *Georgia Performance Standards*, and the *Sunshine State Standards*. Visitor Services staff continue to work with Okefenokee Adventures and other organizations in planning and implementing quality environmental and cultural education programs (Figure 17).

Table 21. Environmental Education conducted by refuge staff CY 2004.

Visitor Type	Number of Participants	Activity Hours (x 4)
Student	1,615	6,460
Teachers and Chaperones	241	964



Figure 17. Ranger Eckberg instructed students attending an environmental education program.

Education Intern

Alex Wolf, a student from Beloit College, interned at the refuge from May to August of 2004. Wolf assisted with environmental education and interpretive programs and designing waysides for the new Mizell Prairie Education Platform. He also assisted in revising the *Junior Refuge Manager Activity Guide* and the *Junior Ranger Summer Day Camp*.

Junior Ranger Summer Day Camp

The 2004 summer camp was expanded to two sessions, June 8-10 and June 14-16. Fifteen children attended the first session and ten the second session. Activities for the three-day camps focused on the refuge themes of natural history, cultural history and resource management issues. Children received a Junior Refuge Ranger badge and certificate, along with a goody bag filled with items about National Wildlife Refuges. Staff members from the Biology and Forestry/Fire departments assisted the Visitor Services staff and volunteers with the camps.

Teacher Training Workshops

The refuge sponsored a *Project WILD Instructor Training* workshop offered on May 18 by Georgia Project WILD State Coordinator, Walter Lane. Refuge staff, volunteers, and local teachers were among the 17 participants who were certified to be Project WILD instructors.

A *Project WILD/Project Learning Tree* teacher workshop was offered to local teachers October 25 and 26 at Okefenokee Education and Research Center. The workshop was developed by Ranger Gentry who also facilitated the event with Ranger Eckberg. Fifteen teachers participated in the workshop, where they learned how to plan and present activities found in the accompanying activity guides (Figure 18).

Student/Teacher Training

Twenty students from Southern Adventist University met with Ranger Eckberg on June 14 to develop activities to use in environmental education programs. At this training the students learned about special strategies needed to effectively plan and present programs at Okefenokee NWR and other National Wildlife Refuges.

Seventeen students from Georgia College and State University participated in several refuge service projects from November 15-20. While completing the service projects, participants learned about refuge operations and developed displays for future refuge interpretive programs. Five of the Students received additional instruction on environmental education and interpretation from Rangers Eckberg and Gentry. At the end of the week the students were required to develop educational activities for an elementary program at the Chesser Island Homestead. Eckberg and Gentry evaluated five wetland related programs about wetlands the students had developed.



Figure 18. Ranger Gentry introduces local teachers to programs found in workbooks.

Other Training

A *Leave No Trace Trainer Course* (LNT), coordinated by Ranger Gentry, was held on October 20-21 at the refuge. Marcia and Gabe Williamson from the LNT Center for Outdoor Ethics provided instruction on the LNT philosophy and the methods and techniques for presenting LNT training courses for outdoor users. Gentry, Eckberg, and three volunteers completed the training which is tentatively scheduled for 2005 (Figure 19).



Figure 19. Volunteer Carol Schneier shares her love of nature with other LNT participants on Cedar Hammock Shelter.

Junior Refuge Manager Activity Guide

A new *Junior Refuge Manager Activity Guide*, for children ages 7-12, was developed by Ranger Eckberg and Intern Wolf. The guide directs children and their parent/guardian through activities including math, reading, science, writing, history, and art, while learning how refuge employees protect natural resources. After a child completes the activity guide, they are awarded a Junior Refuge Manager badge and certificate.

Lending Library

A lending library of materials and resources for refuge staff, volunteers, teachers, and researchers was established in December at the Visitor Center. Environmental Education activity guides, field guides, children's books, and historical/cultural texts and files along with video and audio tapes, DVDs and CDs will be available for use at the refuge or offsite. This library fulfills one of the components for the refuge environmental education program to meet the requirements for "Flagship" performance level.

On-site Special Events

Wings Over the Swamp

Wings Over the Swamp is a celebration of migratory birds that rely on the refuge for survival. Unfavorable weather conditions on February 14 resulted in low visitation. Visitor center records showed 263 visitors attended the event. Activities included games, crafts, exhibits, an early morning bird walk and an evening Owl Prowl. Special showing of the movie *Never a Silent Spring* was offered throughout the day, in addition to the refuge's orientation film. A canoe clinic plus special interpretive morning and evening boat tours were offered by Okefenokee Adventures.

National Wildlife Week/Earth Day

The refuge celebrated National Wildlife Week on April 17 by participating in the Georgia Department of Transportation Adopt-a-Highway litter pickup. Ranger Gracie Gooch and 40 volunteers collected 150 bags of trash along a two-mile stretch of Highway 121/23 (Figure 20).

The refuge sponsored an art contest with 113 entries from St. George Elementary, Folkston Elementary, Fargo Charter School and Ware County Middle School. Judges included Ranger Gentry, refuge volunteer and local photographer Pam Sikes, Okefenokee Pastimes co-owner Jo Knight and Charlton County Library Assistant Manager Dorinda Montgomery. Ribbons were awarded for selected artwork, along with coupons for free food at McDonald's and discounted merchandise from the Visitor Center bookstore. Okefenokee Wildlife League, Folkston Kiwanis Club, McDonald's of Folkston, GA, and the Charlton County Public Library supported the event. Entries were posted in the Charlton County Library prior to judging and winners were posted in McDonald's the week preceding Earth Day. The first place entry was selected to be on t-shirts given to participants of the Earth Day Bicycle Tour which coincided with the art contest (Figure 21).



Figure 20. Ranger Gooch, volunteers and AmeriCorps during the Earth Day litter pickup.



Figure 21. AmeriCorps member presents the winning artist with her free t-shirt depicting her art.

The refuge hosted the second annual Earth Day Bicycle Tour on Swamp Island Drive. This annual event promotes alternative travel methods and refuge management strategies including biology, forestry/fire, public use and animal and plant diversity. Refuge staff and volunteers hosted seven booths at varying intervals along the drive. Exhibits and hands-on activities highlighted different management strategies. The Camden Bicycle Club performed a free bicycle safety and maintenance check-up. Greathouse Butterflies hosted an exhibit with live butterflies and Sanctuary on Sapelo conducted a live owl demonstration. Approximately 200

visitors attended, including 50 bicyclists, up from 12 who attended in 2003. Six staff, 30 volunteers and the assistance from the Camden Bicycle Club helped make the event a success.

International Migratory Bird Day

On May 8 the annual International Migratory Bird Day celebration highlighted awareness of migratory bird conservation. Activities included a morning bird walk, exhibits and an evening Owl Prowl. Approximately 100 visitors enjoyed the celebration.

National Fishing Week

Refer to Banks Lake Narrative, section 8.a. Special Events.

National Public Lands Day/Paddle for Wilderness

Celebrated on September 18 the event recognized the 40th anniversary of the National Wilderness Act. Participants could choose from a variety of daylong events. Activities included several service projects at the Chesser Island Homestead and an afternoon canoe trip into the wilderness area. Approximately 30 visitors volunteered for service projects and were presented with a free lunch and a custom designed t-shirt.

Twenty participants enjoyed an afternoon Paddle for Wilderness with Rangers Gentry and Gillette. Okefenokee Adventures co-owner Chip Campbell provided tour boats and conducted a canoe tour into Chesser Prairie. After the tour participants were invited to a low country boil offered by Okefenokee Adventures. Local Boy Scout troops #362 and #360 participated throughout the day. Sponsors included Okefenokee Wildlife League, Okefenokee Adventures and First Coast Embroidery of Homeland.

National Wildlife Refuge Week/Okefenokee Festival

The Okefenokee Festival was held on October 9 with approximately 800 visitors enjoying the beautiful weather and activities at the Chesser Island Homestead. Shuttle bus service transported visitors from the Visitor Center to the Chesser Homestead. Two 20'x20' tents were rented from Kings Bay and several exhibitors were placed underneath. The Shadetree Pickers provided musical entertainment, along with 4-note singing from the Roddenberry sisters. About 50 volunteers and numerous staff made sure that the event went smoothly. Sponsors included Okefenokee Wildlife League and the Charlton County Historical Society.

Volunteers also hosted a booth in Folkston, GA and OWL provided bookstore items for purchase during the festival. An estimated 10,000 people attended the parade and craft fair. The refuge float, designed and created by staff and volunteers with the theme *Children Are Our Future*, won first place (Figure 22).



Figure 22. The refuge receives first place for the fourth consecutive year.

Christmas on Chesser Island Program

The cold, seasonal weather on December 11 drew a large crowd of approximately 400 visitors, who came out to enjoy the holiday festivities. Volunteer Dory Stauff on keyboard and Noah Wetzel on fiddle provided musical entertainment. The First Baptist Church Children's Choir performed seasonal songs and the Roddenberry sisters performed 4-note singing of traditional carols. The Christmas skit, adapted from the poem *Twas the Night Before Christmas*, was narrated by Chip Campbell and performed by the Roddenberry sisters and some youthful volunteers. Visitors enjoyed homemade cookies, hot apple cider, and hot chocolate as they gathered around the bonfire provided by the refuge staff. Traditional holiday decorations adorned the homestead, while luminaries lined the pathways. Visitors enjoyed a hayride around the Chesser Island loop of the wildlife drive. Staff and volunteers all pitched in to create an exceptional program enjoyed by all.

Hunting

Retired Georgia DNR Ranger Mike Brooks conducted two sessions of the Georgia Hunter Education course on August 21-22 and September 18-19 at the refuge administrative office. This doubled the number of sessions that were offered at the refuge the previous year. Twenty-eight people completed this course on hunting knowledge, safety and ethics.

The annual quota hunt for deer and feral hogs at Suwannee Canal Recreation Area was held on October 22 and 23. An estimated 25 hunters and helpers participated on the first day and 29 on the second day for a total of 54. A total of 11 deer (two bucks, seven does, and two yearlings) along with one feral hog were harvested. Ranger Gillette provided law enforcement while Ranger Eckberg administered the hunt. Feedback from the participants in the hunt was overwhelmingly positive. Many hunters were from the local area, but some came from as far as St. Simon's Island, GA and Glen St. Mary, FL.

The Cowhouse Unit of Okefenokee NWR was open for hunting throughout the fall season in conjunction with Dixon Memorial Wildlife Management Area. Deer, turkey and small game including Bobwhite quail, rabbit and squirrel were harvested in compliance with state regulations and season.

The Pocket Unit of Okefenokee NWR was open for the second consecutive year to archery hunting from September 11 through October 15. Hunters were required to register daily with 625 hunt-visits recorded this year compared to 324 in 2003. A total of 42 deer (19 buck and 23 doe) were harvested this season compared to the 11 harvested in 2003.

Fishing

Despite high water levels fishing participation decreased slightly during 2004. Anglers accessed the refuge through four areas where angler visits are recorded (Table 22).

Table 22. On-refuge anglers.

Refuge Access	2004	2003	2002
East Entrance	1,695	1,277	96
West Entrance	2,626	2,996	2,871
Kingfisher Landing	367	996	367
Suwannee River Sill	911	1,373	274
TOTAL	5,599	6,642	3,608

Camping

Tent and RV camping and cabin rentals are available at the West Entrance in Stephen Foster State Park. Visitation increased in 2004 by 49% with 27,490 compared to 13,135 visits in 2003 (Table 23). Based on an 8 hour day, park visitors accumulated 212,688 activity hours in 2004.

Table 23. Campers at Stephen C. Foster State Park.

Camp Site	Number of Visits		
	2004	2003	2002
Tent/RV Campers	19,430	9,557	4,875
Cabin Users	8,060	3,578	2,007
Total	27,490	13,135	6,882

Concessions

The North Entrance, Okefenokee Swamp Park, contract was renewed in 1999 and is valid through 2008. Okefenokee Swamp Park offers visitors boat and canoe rentals, boat tours, food services and visitor services.

The West Entrance, Stephen C. Foster State Park, is operated by the Georgia Department of Natural Resources. The state park offers camping, boat and canoe rentals and visitor services.

The East Entrance, Okefenokee Adventures, celebrated their fourth year of operation in September. Refuge staff conducted monthly inspections and continue to meet with the owners, Chip and Joy Campbell, on a regular basis. The refuge continues to monitor and audit the concession's guided tours. Communication between the concession and the refuge remains high. Okefenokee Adventures is currently working with refuge staff on the design for a new concession building. The plan has been submitted to the Regional Engineering Office in Atlanta.

8.b. OUTREACH

Partnerships

International Paper Company

Refuge staff and volunteers installed three interpretive panel kiosks constructed by Southern Custom Exhibits. The panels, which were paid for by International Paper (IP), detail the Longleaf Pine Forest Community, IP's Sustainable Forestry Initiative and the Historic Suwannee Canal. The kiosks are located throughout the 4.5 mile Longleaf Pine Trail, which crosses lands owned by both IP and the FWS. The trail is marked and open for daily use.

National Fish and Wildlife Foundation/Southern Company's "Power of Flight" Grant

On April 22 the National Fish and Wildlife Foundation/Southern Company awarded the refuge a \$22,500.00 *Power of Flight* grant to improve an existing walking trail and create a boardwalk and an education overlook platform out to the Mizell Prairie. Work began on the platform portion of the project in November and was completed at the end of the month. Work is currently progressing on the exhibits portion of the grant, with the planning of two interpretive panels that will highlight both the Mizell Prairie and the Suwannee Canal.

Banrock Station Winery

The Banrock Station Winery presented OWL with a check for \$2,500.00 to offset costs to produce two interpretive panels for the new Mizell Prairie Education Overlook, which was constructed at the end of the Cane Pole Trail. The panels will discuss the Suwannee Canal and the Mizell Prairie and are expected to be completed in 2005.

Georgia Wildlife Federation

The refuge entered into a MOU to provide environmental education program coordination and funding to assist with exhibits for the newly renovated Okefenokee Education and Research Center (OERC). The refuge public use staff increased coordination with Jason Diem of the Georgia Wildlife Federation for the purpose of reviewing, correcting and coordinating final design criteria for \$ 10,000 worth of FWS and refuge informational exhibits.

Local Community Outreach

Refuge staff participated in several community organizations, including the Okefenokee Chamber of Commerce, Better Hometown Program, Kiwanis Club and others. Staff also attended meetings on the Better Hometown initiative and participated in the *Keep Charlton Beautiful* campaign. Refuge staff and volunteers participated in the annual American Cancer Society Relay for Life and the Okefenokee Festival.

Fire Outreach

Ranger Gentry assisted the Fire Information Officer during the Impassible One Fire in the Osceola National Forest during March. Gentry served as Information Officer 3 Trainee.

Ranger Gillette assisted the Fire Information Branch during the Impassible Bay Fire during the Memorial Day weekend. Gillette assisted in setting up a remote fire information office in the Baxter Volunteer Fire Department building and coordinated several news teams with the drafting and release of daily fire information to the media.

Ranger Gillette drafted an article on the GOAL organization. The article appeared in the July/August edition of *Refuge Update*.

Hurricane Relief/Recovery Outreach

Ranger Gillette served as Incident Information Officer for the Hurricane Frances Relief/Recovery Team, which responded to hurricane ravaged areas in southeastern Florida in early September. The team staged at Merritt Island NWR and sent relief/recovery teams to A.R.M. Loxahatchee NWR, Hobe Sound NWR, Pelican Island NWR, Lake Woodruff NWR, the Vero Beach ES Office and the Welaka National Fish Hatchery. The team worked for a week before all operations were suspended due to the approach of Hurricane Ivan.

Other Outreach Initiatives

On May 14 volunteers staffed an interpretive booth at the Georgia Visitor Center in Kingsland off Interstate 95. The statewide event, *Georgia on My Mind* campaign celebrated National Tourism Week.

Refuge staff provided materials for a booth at the Mall of Georgia in Buford celebrating the Stay and See Georgia initiative. The Okefenokee Chamber of Commerce and City of Folkston hosted the booth where thousands of visitors learned about the Okefenokee region.

Volunteers provided assistance and information at Kingsbay Naval Air Station as part of a three-day event called *Travel Fair Social*. The event is designed to introduce service personnel and families to the local communities and learn about recreational opportunities.

Service In-Reach

On July 19-21, the refuge hosted a gathering of Public Use Coordinators and Refuge Managers from throughout the region. The group met to discuss ways it could improve the Southeast Region's Public Use Division. The meeting generated a proposed plan for the revision and restructuring of the region's Public Use Division to coincide with similar changes already being implemented throughout the Service's law enforcement and natural resource management divisions.

Refuge staff contributed several articles to the FWS, Southeast Region electronic newsletter called *EGRITS*. This newsletter is published monthly by the Regional Office as an in-reach tool for the regional employees.

Georgia Nature-Based Tourism Association

Supervisory Refuge Ranger Burkhart continues to be an active member in the Georgia Nature-Based Tourism Association, an organization consisting of outfitters, campground owners and other stakeholders. This group was initiated in response to the DuPont strip mining threat to convince small rural communities that nature-based tourism was a viable economic growth incentive that was just as valuable as large and small industries. After two years of sub-par funding and local membership, the organization expanded state wide in 2004. Ranger Burkhart represented the refuge at their First Annual Conference in Madison, Georgia. One of the major projects taken on by this group has been the development of a waterway trail from the Atlantic Ocean, up the St. Marys River, through the Okefenokee NWR and down the Suwannee River to the Gulf of Mexico. This planning group is hoping to enlist the cooperation, financial and political support of both Georgia and Florida in completion of this trail. Progress on this initiative was slow but steady during 2004. Representatives of the St. Johns River Water Management District, St. Marys River Management Committee and Suwannee River Water Management District met during the year to discuss how this trail could become a reality. Chip Campbell of St. Marys River Management Committee has the lead for continuing this dialogue and establishing a familiarity tour for members of his Committee to experience the accomplishments already made along the Suwannee River Wilderness Trail.

Supervisory Ranger Burkhart has met with representatives of local counties surrounding the refuge and members of Georgia Department of Industry, Trade and Tourism interested in developing an Okefenokee Trail designated and officially signed by the Georgia Department of Transportation. The Okefenokee Trail will promote all of the opportunities available to tourists that visit this area. The area to be popularized by the trail includes the county assets east and west of the Okefenokee between Interstates 95 and 75. This planning group is currently in the developmental stage. Refuge staff has, however, developed a proposal to convert our current Okefenokee Parkway signs, along numerous highways leading to the refuge, to Okefenokee Trail signs. The group's Board of Directors has adopted the idea and plan to discuss the proposal with the Georgia Department of Transportation.

Media Contacts/Events

Media contact continues to be an important part of refuge events and issues. Several members of

the refuge staff were interviewed for refuge oriented films, documentaries and other media outlets throughout the year. Several news stories on topics ranging from fire to volunteers were completed.

The *Blue Goose Corner* took flight in 2004. This monthly article, released to all the surrounding county's print media sources, details various aspects of the refuge, FWS policies and other interesting aspects about the role and responsibilities federal conservation organizations. Topics addressed in 2004 include the following:

- Introduction to the Blue Goose Corner. (August)
- 40 Years of the Wilderness Act. (September)
- Compatibility: What it Means to You. (October)
- Sandhill Cranes. (November)
- Prescribed Burning: An Important Management Tool. (December)

Web Page

Ranger Gooch and Gentry, along with assistance from volunteer Al Woodson, updated the refuge web page. It is currently under final review by refuge staff before posting to the public. OWL maintains a separate web site and now has an email account for public access and to accept orders for bookstore items.

Off-refuge Special Events/Community Events

Relay for Life

Ranger Gooch once again captained the Okefenokee Relay for Life team, a community effort to raise money for the American Cancer Society held on April 23-24. The event requires teams of at least nine people to walk for 14 hours, beginning at 7:00 p.m. One person from the team must be on the track at all times. Over 50 refuge staff members, volunteers and AmeriCorps participated in the event, which also included a cookout.

Leave No Trace

On October 22, Traveling Trainers Marcia and Gabe Williamson and Ranger Gentry presented the national Leave No Trace program to students at St. George Elementary, Bethune Elementary, Folkston Elementary and Charlton County High School. Approximately 700 children got to see and participate in this interactive program promoting responsible environmental stewardship and ethics (Figure 23).

Woodbine Elementary School Community Awareness Fair

The refuge participated in Woodbine Elementary School's Community Awareness Fair on April 30. The event was designed by the school system to introduce children to opportunities in their neighborhood and promote awareness and appreciation of their community organizations. AmeriCorps team members operated a booth incorporating an owl theme. The team presented a

Read-a-loud program, played recordings of various owl calls and designed a display table. Three members of the team dressed up as an Owl, Raccoon and Alligator. We contacted approximately 250 people.



Figure 23. Mr. Impact Monster demonstrates to students how not to behave on public lands.

Colonial Coast Birding Festival

The refuge served as a destination site for participants on field trips associated with the Colonial Coast Birding Festival held on October 9-10. Savannah NWR supported the event, along with other refuge partners.

Greater Jacksonville Agricultural Fair

Held from November 3-14, the Greater Jacksonville Agricultural Fair celebrating heritage, culture and community draws approximately 400,000 visitors. The refuge hosted a booth, provided by the fair at no cost, with refuge displays, brochures, handouts and Create-a-bookmark activity for children. We received a second place trophy and ribbon for the Public Service category.

CoastFest

CoastFest was held on October 2 at the Brunswick Department of Natural Resources (DNR) office and sponsored by Georgia DNR. The refuge co-hosted one of several FWS booths with Harris Neck NWR and the Brunswick and Athens Ecological Service Offices. Approximately 6,300 people passed through during this one day event. Numerous environmental organizations sponsored booths at the event, including Georgia Forestry Commission, Sanctuary on Sapelo, Cumberland Island National Seashore, and Oatland Island Education Center.

Earth Day (Kings Bay Naval Station)

Ranger Gooch and AmeriCorps team members provided information about the refuges conservation efforts for Earth Day celebrations held at Kings Bay Naval Station on April 22. The display featured a tabletop exhibit, human-size animal costumes, and hands-on activities for children. More than 500 students from Camden County schools learned about the Navy's award-winning environmental programs for recycling, complying with federal and state environmental laws and protecting and coexisting with wildlife on base.

9.

PLANNING AND ADMINISTRATION

9.a. COMPREHENSIVE MANAGEMENT PLANNING

A draft of the Comprehensive Conservation Plan was submitted for internal review in 2004. Final corrections are currently being made in preparation for printing the draft for public review. The step-down plans are also being written for public review along with the draft of the CCP.

9.b. GENERAL ADMINISTRATION

Refuge Staff

The majority of the 32 staff are full time with a small number of career seasonal and temporary positions (Table 25). Table 26 lists refuge employees and current positions. Staff photos are included in Figure 24. Refuge Manager Skippy Reeves, scheduled to retire in 2005, is pictured in Figure 25.

Table 24. A five-year comparison of Okefenokee's staffing pattern.

Year	Full-time	Career-Seasonal Firefighters	Temporary	Firefighters
FY 2004	26	5 (3.55 FTE)	1	0
FY 2003	26	5 (3.55 FTE)	1	0
FY 2002	26	5 (3.55 FTE)	0	0
FY 2001	27	5 (3.55 FTE)	0	0
FY 2000	28	5 (3.55 FTE)	1	0

Table 25. Okefenokee Refuge Staff for 2004.

Name	Title
M. Skippy Reeves (EOD 02/21/93)	Refuge Manager (GS 14, PFT)
W. Shaw Davis (EOD 04/10/97)	Deputy Refuge Manager (GS 13, PFT)
Dartha P. Campbell (EOD 12/06/76)	Administrative Officer (GS 9, PFT)
Beverly A. Derouin (EOD 03/05/95)	Office Assistant (GS 6, PFT)
Judy L. Drury (EOD 04/11/88)	Office Assistant (GS 5, PFT)
Sara Brown Aicher (EOD 03/10/91)	Biologist (GS 12, PFT)
Dean E. Easton (EOD 03/09/03)	Wildlife Biologist (GS 9, PFT)
James N. Shelton (EOD 07/05/87)	Park Ranger (Refuge) (LE) (GS 9, PFT)
James A. Burkhart (EOD 06/11/78)	Sup. Park Ranger (Refuge) (GS 12, PFT)
*Gisella Burgos (EOD 01/26/03)	Park Ranger (Refuge) (GS 11, PFT)
Shawn G. Gillette (EOD 04/04/04)	Park Ranger (Refuge) (GS 11, PFT)
Gracie A. Gooch (EOD 05/29/84)	Park Ranger (Refuge) (GS 7, PFT)
Blaine D. Eckberg (EOD 10/19/03)	Park Ranger (Refuge) (GS 5, PFT)
Sallie D. Gentry (EOD 07/15/01)	Park Ranger (Refuge) (GS 7, PFT)
Everette Sikes (EOD 03/15/87)	Electrical Worker (WG 8, PFT)
Stiner Jones (EOD 09/19/83)	Tractor Operator (WG 6, PFT)
Frederick E. Wetzel (EOD 05/03/92)	Forester/FMO (GS 12, PFT)
James R. Langford (EOD 04/06/03)	Forester/AFMO (GS 11, PFT)
Howard McCullough (EOD 01/05/87)	Forestry Technician (GS 8, PFT)
Reggie Forcine (EOD 07/23/95)	Forestry Technician (GS 7, PFT)
Richard B. Boatright (EOD 01/05/97)	Fire Program Assistant (GS 5, PFT)
Douglas E. Nuss (EOD 01/16/77)	Sup. Engineering Equip. Oper. (WS 10, PFT)
Tony R. Gooch (EOD 08/18/80)	Automotive Worker (WG 8, PFT)
Rockwell M. Chesser (EOD 06/23/96)	Engineering Equip. Oper. (WG 8, PFT)
Stacey A. Welch (EOD 07/23/95)	Engineering Equip. Oper. (WG 8, PFT)
William E. Sikes (EOD 05/24/98)	Forestry Technician (GS 5, PPT)
Raymond E. Beacom (EOD 06/03/01)	Forestry Technician (GS 5, PPT)
Cory R. Bryant (EOD 06/03/01)	Engineering Equip. Oper. (WG 8, PFT)
Danny Jack Willis (EOD 07/16/00)	Forestry Technician (GS 5, PPT)
Daniel J. Laber (EOD 07/22/01)	Refuge Operations Specialist (GS 5, PPT)
Jared R. Allsbrooks (EOD 06/01/03)	Student Trainee (GS 4, SCEP)
James R. Barber (EOD 07/13/03)	Park Ranger (Refuge) (GS 4, NTE 07/11/05)

* Transferred to Vieques National Wildlife Refuge, Puerto Rico



Figure 24. **First Row:** W. Sikes, R. Barber, S. Gentry, E. Sikes **Second Row:** R. Forcine, C. Bryant, D. Campbell, D. Easton
Third Row: D. Willis, S. Jones, H. McCullough, J. Burkhart, R. Chesser **Fourth Row:** R. Beacom, R. Langford, F. Wetzel, D. Nuss
Left Side: D. Laber, J. Shelton, S. Davis, J. Drury **Right Side:** B. Boatright, G. Gooch, S. Aicher, S. Welch, S. Gillette
Not Pictured: B. Derouin, B. Eckberg, T. Gooch



Figure 25. Refuge Manager Skippy Reeves.

Personnel Changes

January 3, 2004, Forestry Technician Rogelio Torres from Vieques NWR began a 5 month detail at the refuge.

January 25, 2004, Forestry Technician Cory R. Bryant was selected for the WG-8 Engineering Equipment Operator position.

Effective March 21, 2004, Lead Forestry Technician William E. Sikes took a voluntary downgrade to Forestry Technician GS-5.

April 4, 2004, Refuge Ranger Shawn G. Gillette transferred to the refuge from Chassahowitzka NWR.

Refuge Ranger Gisella Burgos accepted a position at Vieques NWR, Puerto Rico effective May 30, 2004.

May 30, 2004, Forestry Technician Rogelio Torres returned to Vieques NWR.

Trevor Renshaw was hired on as a 30-day emergency hire Maintenance Worker/YCC Adult Leader May 12, 2004.

As a result of the 2004 Wage Grade audits, Maintenance Worker Willie E. Sikes' position title was changed to Electrical Worker along with a promotion from GS-7 to GS-8, effective May 12, 2004.

May 16, 2004, Student Trainee (SCEP) Jared Allsbrooks returned to duty for the summer.

As a result of the Wage Grade audits, Maintenance Worker Stiner Jones position title changed to Tractor Operator with no promotion. effective May 26, 2004.

Maintenance Worker/YCC Adult Leader Trevor Renshaw's position extended an additional 30 days, effective July 7, 2004.

Refuge Operations Specialist Dan Laber was temporarily promoted to GS-6, Lead Forestry Technician on August 2, 2004.

August 8, 2004, Student Trainee (SCEP) Jared Allsbrooks returned to school.

9.c. TRAINING AND TRAVEL

Employees attended several off-station training courses in 2004 (Table 27). Table 28 includes other travel performed by refuge employees.

Table 26. Training attended by permanent personnel in 2004.

Rocky Chesser	Heavy Equipment Operator Instructor	Florida Panther NWR Naples FL	Jan 5 - 8
Roy Torres	Heavy Equipment Operator	Vieques PR	Jan 11 - 18
Russ Langford	S-270 Basic Air Ops S-217 Helicopter Crew Member	Hartsville SC	Jan 26 - 30
Howard McCullough	Woodland Security	Macon GA	Jan 26 - 28
Jim Shelton	Bushmasters Armorers	Chesapeake VA	Feb 1 - 4
Reggie Forcine	National Interagency Prescribed Fire Academy	Tallahassee FL	Feb 8 - Mar 1
Roy Torres	MOCC	Savannah GA	Feb 9 - 13
Jim Shelton	Annual LE Inservice	Quincy FL	Feb 16 - Mar 5
Dartha Campbell	Warrant Maintenance	Shepherdstown WV	Feb 17 - 20
Stacey Welch	Annual LE Inservice	Quincy FL	Feb 22 - 27
Gisella Burgos Sallie Gentry Blaine Eckberg	S-203 Information Officer	Abingdon VA	Feb 23 - 26
Shaw Davis	Annual LE Inservice	Quincy FL	Feb 29 - Mar 5
Fred Wetzel	M-580 Fire in Ecosystem Management Instructor	Tucson AZ	Feb 29 - Mar 3
Brantley Boatright	Incident Qualifications Certification System	Atlanta GA	Mar 1 - 5
Gracie Gooch	NWRA Friends Advocacy & Media Workshop	Wash DC	Mar 5 - 9

Bev Derouin Darth Campbell	2004 Interagency Incident Business Practice Workshop	Destin FL	Mar 16 – 18
Fred Wetzel Russ Langford Skippy Reeves Danny Maddox	S-580 Advanced Fire Use Applications	Tucson AZ	Mar 21 – 27
Russ Langford	PFTC	Tallahassee FL	Apr 2 – 25
Gracie Gooch	SE Regional Friends Workshop	Monroe LA	Apr 2 - 4
Tony Gooch	Mercury Marine Outboard Systems	Orlando FL	Apr 11 – 16
Dean Easton	Wilderness Fire Resource Advisor	Tallahassee FL	Apr 12 – 16
Dan Laber	S-390 Advanced Fire Behavior Interpretation S-200 Initial Attack Incident Commander	Jackson MS	Apr 25 – May 5
Bev Derouin Brantley Boatright	2004 Southern Area Coordination Center Manger & Dispatchers Workshop	Gulfport MS	May 2 – 7
Will Sikes Raymond Beacom Cory Bryant Reggie Forcine Danny Jack Willis	S-200 Initial Attack Incident Commander	Jackson MS	May 3 – 5
Everette Sikes	Historic Log Stabilization & Preservation Techniques	Kasilof AK	May 10 – 14
Rocky Chesser	Heavy Equipment Operator (Instructor)	Key Deer FL	May 10 - 14
Shaw Davis Russ Langford	SAMMS	Shepherdstown WV	May 17 – 21

Jared Allsbrooks	S-130 S-190	Jacksonville FL	May 17 -- 21
Russell Barber	SAMMS	Shepherdstown WV	Jun 27 – Jul 2
Blaine Eckberg	USFWS Employee Foundations	Shepherdstown WV	July 19 – 23
Skippy Reeves	LE Training for Supervisors	Glynco GA	Aug 15 – 20
Jim Shelton	LE Academy (Instructor)	Glynco GA	Aug 16 – 19
Skippy Reeves Sara Aicher	Suwannee River Basin & Estuary Science Workshop	Cedar Key FL	Sep 21 – 24
Reggie Forcine Fred Wetzel Dean Easton Howard McCullough	5 th Annual Longleaf Alliance Conference	Hattiesburg MS	Oct 11 – 15
Raymond Beacom	TXFS Fire Academy	Bastrop TX	Oct 15 – 29
Everette Sikes	GA Water Management Conference	Helen GA	Oct 24 – 27
Jim Shelton	Remington Armorers	Tavares FL	Nov 15 – 17
Shawn Gillette	Media & Outreach Academy	Shepherdstown WV	Nov 15 – 19
Fred Wetzel	Fire Program Analysis	Boise ID	Nov 15 - 18
Skippy Reeves Russ Langford	Fire Budget Workshop	Atlanta GA	Nov 15 - 18
Dartha Campbell	IDEAS-PD Refresher	Atlanta GA	Nov 16 - 18
Reggie Forcine	Helicopter Managers Workshop	Biloxi MS	Dec 6 - 10

Table 27. Travel by permanent personnel in 2004

Cory Bryant	Pickup Excess Furniture	Atlanta GA	Jan 12
Dan Laber Stacey Welch	Rx Fire Assist St Marks NWR	St Marks FL	Jan 15 – 17
Fred Wetzel	FMO Meeting	Savannah GA	Jan 20 – 23
Jim Burkhart	GA Nature Based Tourism Conference	Madison GA	Jan 20 – 21
Raymond Beacom Roy Torres	Rx Fire Assist Piedmont NWR	Macon GA	Jan 21 – 23
Doug Nuss	WG Advisory Committee Meeting	Atlanta GA	Feb 17 – 19
Reggie Forcine	Rx Fire Assist Savannah River	New Ellenton SC	Mar 4 - 14
Sallie Gentry Howard McCullough	Eastern Fire Assist Impassable Fire Osceola NF	Olustee FL	Mar 12 - 14
Raymond Beacom	Eastern Fire Assist Impassable Fire Osceola NF	Olustee FL	Mar 21 - 26
Shaw Davis	Area III Town Hall Meeting	Santee SC	Mar 23 – 24
Shaw Davis	LE Detail Vieques NWR	Vieques PR	Mar 25 – Apr 12
Skippy Reeves Dan Laber	Scrub Jay Survey Merritt Island NWR	Titusville FL	Mar 29 – 30
Rocky Chesser	Heavy Equipment Operator Instructor Meeting	Grenada MS	Apr 5 – 8
Reggie Forcine Roy Torres	Pickup Excess Furniture	Atlanta GA	Apr 8
Gisella Burgos	Vieques Detail	Vieques PR	Apr 12 – May 3

Shaw Davis Shawn Gillette Stacey Welch	Physical Fitness Assessment Study	Glynco GA	May 10 – 11
Will Sikes Dan Laber	Eastern Fire Assist Homestead FL	Florida City FL	May 17 – 31
Raymond Beacom Cory Bryant	Pickup Excess Furniture	Atlanta GA	May 24
Sara Aicher	GIS Committee Meeting	Cookeville TN	May 27 – 28
Shaw Davis	LE Detail Savannah Coastal	Savannah GA	May 30 – Jun 1
Jim Shelton	GS Summit LE Detail	Savannah GA	Jun 1 - 11
Fred Wetzel	Fire Use Presentation	Ft Collins CO	Jun 21 - 25
Reggie Forcine	Western Fire Assist	Albuquerque NM	Jun 28 – Jul 10
Skippy Reeves	Litigation Meeting with GA/DOT/FHWA/ Refuges	Atlanta GA	Jul 6 – 7
Raymond Beacom Danny Jack Willis Reggie Forcine	Eastern Fire Assist Savannah Coastal	Savannah GA	Jul 7 - 24
Skippy Reeves Gracie Gooch	Regional Director's Awards	Atlanta GA	Jul 14 – 15
Fred Wetzel	Western Fire Assist	Fairbanks AK	Jul 20 -29
Brantley Boatright	Fire Assist SACC	Atlanta GA	Jul 29 – Aug 1
Russ Langford	Fire Program Analysis Team Meeting	Gainesville GA	Aug 2 – 3

Russ Langford Howard McCullough Rocky Chesser Doug Nuss Will Sikes Danny Jack Willis Reggie Forcine Raymond Beacom Stacey Welch	Hurricane Charley Assist	Ft Meyers FL	Aug 15 – 30
Dartha Campbell	Regional Office Detail	Atlanta GA	Sep 13 – 17
Bev Derouin	Hurricane Frances Assist	Titusville FL	Sept 6 - 9
Judy Drury Brantley Boatright Cory Bryant Fred Wetzel Shawn Gillette	Hurricane Frances Assist	Titusville FL	Sep 6 – 10
Fred Wetzel Howard McCullough Russ Langford Reggie Forcine Dan Laber Will Sikes Danny Jack Willis Raymond Beacom Stacey Welch	Hurricane Frances Assist	Lake Woodruff DeLand FL	Sep 22 - 25
Fred Wetzel	Hurricane Jeanne Assist Merritt Island NWR	Titusville FL	Sep 30 – Oct 2
Russ Langford Dan Laber Raymond Beacom Reggie Forcine	Hurricane Jeanne Assist Lake Woodruff	DeLand FL	Sep 30 – Oct 7

Sara Aicher Skippy Reeves Fred Wetzel	Potential Case Study	Sioux Falls SD	Oct 4 – 6
Stacey Welch	LE Detail Harris Neck	Harris Neck GA	Oct 18 - 24
Skippy Reeves	Establish Leadership for the Future of GA Forestry	Valdosta GA	Nov 4 – 5
Jim Shelton	LE Detail Great Dismal Swamp	Suffolk VA	Nov 7 - 11
Stacey Welch	LE Detail Harris Neck	Harris Neck GA	Nov 17 - 21
Russ Langford Fred Wetzel	Hurricane Season Review	St Marks FL	Nov 29 – Dec 2
Stacey Welch	LE Detail Blackbeard Island	Blackbeard GA	Nov 30 – Dec 5
Shaw Davis	LE Detail Pinckney Island	Savannah GA	Dec 11 – 12
Raymond Beacom Will Sikes	Rx Fire Assist Piedmont NWR	Macon GA	Dec 16 – 17

9.d. ENERGY

In 2004 refuge usage showed a decrease in electricity and diesel but an increase in gasoline. A comparison of refuge usage from 2002-2004 is included in Table 29.

Table 28. Energy usage in CY 2004.

	CY 2004	CY 2003	CY 2002
Electricity (kwh)	251,529	286,407	338,451
Gasoline (gal)	31,970	14,270	17,195
Diesel (gal)	10,655	12,038	14,248

9.e. FUNDING

Funds allocated in 2004 were consistent with trends observed in previous years. A comparison of funds allocated for 2000-2004 are included in Table 30.

Table 29. Refuge fund allocations from 2000-2004.

ACTIVITY	2004	2003	2002	2001	2000
1260	1451.40	1270.4	1131.9	1213.7	1211.3
6860	60.0	60.0	60.0	60.0	60.0
9131/9251	742.5	741.9	875.0	1081.2	785.0
9132	345.7	0.0	0.0	0.0	0.0
9263	236.5	180.0	99.3	99.3	66.2
9264	20.0	105.0	21.0	0.0	0.0
9265	23.6	0.0	0.0	0.0	0.0
1100	0.0	0.0	8.0	0.0	0.0
2111	0.0	0.0	0.0	0.0	0.0
2810/2821	427.8	0.0	67.1	190.80	991.5
2960	0.0	0.0	0.0	5.4	279.4
8555	0.0	1.2	0.0	0.0	0.0
Federal Highway	0.0	0.0	435.0	0.0	0.0
TOTAL ALLOCATION	3307.5	2358.5	2697.3	2995.3	3393.4

2004 Includes MMS (397.6), YCC (25.1) contaminant (6.9) Banks Lake herbicide (3.5), Hurricane Isabel (24.8), SAMMS (60.0), Congressional for concession (427.8), helicopter contract (25.0)

2003 Includes MMS (140.0), YCC (19.2), signs (1.2), helicopter contract (25.0)

2002 Includes MMS (219.5), YCC (19.2), visitor center and restrooms renovations (67.1), helicopter contract (25.0), locker/shower facilities (28.0) and urban interface (Stephen C. Foster State Park (21.0).

2001 Includes contaminant (8.0), LE visitor/resource protection (79.0), trailcutter/dozer/trailer replacement (400.0), MMS (98.0), carryover funds from VC renovation (122.8), helicopter contract (50.0), locker/shower facilities (178.6), Federal Highway/VC restroom renovation (143.4).

2000 Includes MMS (184.0), contaminant (11.0), special road projects (279.40), carryover funds from VC (991.5), and helicopter contract (64.0).

9.f. SAFETY

Safety meetings were held every month. Work hazard forms were completed and tailgate sessions were held before the beginning of each work project. Numerous topics including ethics, diet and exercise, exercise equipment use and chainsaw safety were discussed.

Permanent Employees Accidents

Rockwell M. Chesser – June 3, 2004

Chesser was cutting chain with a cutting torch when hot metal wash from the torch went into his ear. Chesser went to the Charlton County Memorial Hospital emergency room where they took x-rays. Everything looked normal and he was released.

Cory R. Bryant – June 30, 2004

Bryant was walking in the pole shed, where construction work was in progress. As he stepped over some boards on the floor, his left boot caught one of the boards causing him to stumble. His left knee cap became swollen and hot to the touch. Bryant went to the doctor and was diagnosed with a knee sprain which resulted in some physical therapy rather than surgery.

James R. Barber – September 22, 2004

Barber was stacking tires at the boneyard located near the maintenance shop when an unidentified insect bit him on the side of the left wrist. No treatment was requested.

Daniel J. Laber – September 30, 2004

After working around downed trees with vines and brushy vegetation, Laber noticed red spots (rash) on the inside of his forearms and biceps. Laber went to the doctor for medical treatment. He was diagnosed with poison ivy, treated and released.

Firefighter Accidents

Rogelio Torres – March 7, 2004

Torres was assisting Florida Division of Forestry and Osceola National Forest on the Impassable Bay Fire which was threatening homes in Taylor, FL. When the flames began to threaten the structures, Torres became trapped on the roof of the residence he was protecting. The heat and embers became so intense, Torres needed to retreat from the roof for his own safety. Torres felt it was not safe for him to return to the side of the roof where a swimming pool ladder was located, so he decided to jump off the roof on the opposite side away from the oncoming flames. When he landed on the ground, he fell injuring his right knee and lower back. Although Torres has had arthroscopy knee surgery and physical therapy, he continues to have problems and may require additional treatment.

Raymond E. Beacom and Danny Jack Willis – June 27, 2004

Beacom and Willis assisted Cumberland Island with a wildfire. They received numerous tick and red bug bites to hips, thighs and buttocks. No treatment was requested.

Danny Jack Willis – September 24, 2004

Willis was working on a hurricane recovery operation at Lake Woodruff NWR in Florida. He was working with a chainsaw crew, clearing debris from felled trees. As he was trimming limbs off a tree, he backed into a tree stump, causing him to lose his balance and falling on his left knee. Willis was examined at Satilla Regional Hospital in Waycross GA where he was required to see an orthopedic specialist in order to return to work. After his orthopedic specialist visit, Willis had knee arthroscopy/surgery and physical therapy and has returned to work.

Intern Accidents

Alexander J. Wolf – July 19, 2004

Wolf was clearing brush with hand tools when he developed a blister on his right ring finger. The blister burst and became infected. Wolf sought medical attention and was treated for the infection and released.

Volunteer Accidents

Nothing to report.

AmeriCorps Accidents

Nothing to report.

Youth Conservation Corp Accidents

Nothing to report.

9.g. VOLUNTEERS

The volunteer program continues to grow at the refuge. Volunteer Coordinator and Refuge Ranger Gracie Gooch devoted more time to recruit volunteers and guide them on various refuge projects. In 2004, over 250 volunteers contributed 17,353 hours; equivalent to more than seven full time employees. With declining staff and reduced budgets volunteers unfortunately have become integral to maintaining the refuge, assisting the biology and forestry staff, performing duties in Visitor Services and performing various other duties in support of the refuge mission.

Volunteers are especially important to the Public Use program. Volunteers staff the visitor center, conduct interpretive programs and assist with environmental education. Without their support, the refuge would be seriously impacted in terms of the services it provides to visitors on a daily basis. Volunteers performed lawn maintenance and landscaping, maintained signs, cut and trimmed more than 50 miles of canoe and walking trails, surveyed wildlife, planted longleaf pine seedlings, administered the recycling program, staffed the refuge visitor center, served as hosts for the Chesser Island Homestead, constructed and renovated overnight canoe shelters and represented the refuge at off-site events. In addition, many interpretive and environmental education programs were presented to educational groups and visitors that would not have been otherwise offered.

Volunteer Recognition

On June 7, 2004, the annual volunteer awards ceremony was held. The volunteers enjoyed dinner, which was immediately followed by the awards ceremony. Several volunteers received certificates and hour pins.

Four Okefenokee NWR volunteers were presented with the Regional Director's Honor Award, July 14, in Atlanta. Honorees were Edythe Williams, Joe and Martha Davis, and Carole Reeves (Figure 26).



Figure 26. Regional Director, Sam Hamilton with Martha and Joe Davis, Edythe Williams, and Carole Reeves.

Interns

Sarah Holt, Clark University, Massachusetts, August 16, 2003-March 13, 2004 (Maintenance)

Alexander Wolf, Beloit College, Wisconsin, May 23-August 14, 2004 (Public Use)

Maili Page, Cook College, Rutgers Univ, New Jersey, March 8-June 15, 2004 (Biology)

Projects accomplished include the following:

- Directing AmeriCorps teams and volunteers on wilderness canoe trail maintenance.
- Revised Junior Refuge Manager Activity booklet.
- Wayside Development, designed and wrote text for Mizell Prairie trail.
- Assisted with annual events including National Wildlife Week, International Migratory Bird Day, and National Fishing Day.
- Daily Visitor Center operations.
- Interpretation at Chesser Island Homestead.
- Assisted with Junior Ranger Camp.
- Assisted with red-cockaded woodpecker surveys, banding and cleaning nest boxes.
- Timber marking and planting longleaf pine seedlings.

AmeriCorps

Three AmeriCorps teams were selected this year to assist the refuge with various projects. Projects included cutting more than 50 miles of motorboat and canoe trails, planting several thousand longleaf pine seedlings, assisting forestry/fire staff with prescribed burning and assisting with environmental education and interpretive programs. They also assisted with improving the Canoe Pole trail by adding a 100' boardwalk and 20'x 30' observation platform into Mizell Prairie. AmeriCorps spent three days with Osceola National Forest, a tri-agency partner with the refuge, assisting with the reenactment of the Olustee Battlefield.

Youth Conservation Corps (YCC)

Okefenokee NWR had a total of 28 applications for the 2004 Youth Conservation Corps program. Three male and two female high school students were selected on the west side of the refuge and three male and two female students were selected on the east side of the refuge (Figure 27). A YCC leader was also hired and stationed at the west side entrance. The YCC conducted routine litter patrol on trails and roads, performed yard and lawn maintenance, trimmed walking trails and boat trails, maintained facilities and in harsh weather assisted in office work at the administration office and visitor center. Duties included work at east and west entrances, Kingfisher Landing and Banks Lake NWR.

The YCC learned valuable lessons about work ethic during their duty and gained knowledge about the refuge system. They were given field trips to the north, south, and east entrances to the refuge as well as Banks Lake NWR. The refuge and Cumberland Island National Seashore conducted an exchange field trip. The two YCC groups spent the day together and learned much about the facilities and habitats at their respective work site.

The YCC attended two of our monthly Staff Safety Meetings. **There were no accidents or injuries during their work period.**



Figure 27. **Front Row:** YCC Leader Trevor Renshaw, Jennifer Padgett, Ruby Sills, youth leader Jonathan Welch, Dane Phelps, youth leader Justin Crews, staff Jared Allbrooks **Back Row:** Lacy Groover, David Sutton, Brittany Smiley, and Lamonte Bolden.

9.h. COMPUTERS AND COMMUNICATION

All employees, interns, and volunteers have computer access on the refuge. A computer team reviews all employee concerns and requests before purchase of new equipment is made. These reviews ensure that:

- Purchases are in compliance with FWS hardware and software specifications.
- Orders are not duplicated.
- Cost effective software packages are purchased.
- Computers are purchased to meet employee's need in their particular field of work.
- Priorities are determined before purchases are made.

The administrative office staff utilizes a Compaq Proliant DL Pentium III server and accesses e-mail and the Internet through a 64-K relay line and CISCO router through SWAN. Currently, the east side shop, visitor center and west side shop dial up the modem pool. Following recommendations from the Regional Office on the priorities for spending SAMMS money, the refuge purchased a Skycaster satellite system, routers and other related pieces of equipment including cable, for the east side shop. Four computers were also purchased to meet SAMMS specifications. These purchases were made to provide the fastest possible connection for the shop facility. Once the satellite is downloaded and being used, the computer team along with the users will evaluate whether satellites should be installed at the visitor center and west side shop which also use modem dialup. At the close of 2004 the east side shop has not transferred to the new Skycaster system and continues to use the dial up modem through SWAN.



Banks Lake National Wildlife Refuge

Lakeland, Georgia

REVIEW AND APPROVALS

BANKS LAKE NATIONAL WILDLIFE REFUGE

FOLKSTON, GEORGIA

ANNUAL NARRATIVE REPORT

Calendar Year 2004



Refuge Manager

5-25-05
Date



Refuge Supervisor, Area III

6-6-2005
Date



Chief of Refuges

6/13/05
Date

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INTRODUCTION

Banks Lake National Wildlife Refuge (3,559 acres) is located in Lanier County near Lakeland, GA. The refuge contains a variety of habitat types including 1,459 acres of cypress swamp, 1200 acres of marsh and 900 acres of open water. Scattered through these habitat types are hardwood swamp, pine forest and other upland areas. The refuge was established for the protection and conservation of a unique environment as well as migratory and resident wildlife.

On April 16, 1980, the U.S. Fish and Wildlife Service entered into a lease agreement with The Nature Conservancy to manage approximately 3,559 acres of the Banks Lake/Grand Bay Wetlands complex, located in Lanier and Lowndes Counties in southeastern Georgia. The original intent of the lease was to establish a National Wildlife Refuge. Changes in the emphasis of the land acquisition program resulted in a lack of funds necessary to acquire the land. The area remained in a state of limbo during 1982 and 1983 with the Service maintaining a caretaker position over Banks Lake. In 1984, funds were added to the FY 1985 budget for the purchase at a value of \$356,000. The refuge designation was authorized under the Fish and Wildlife Act of 1956 and funded through provisions of the Land and Water Conservation Fund Act of 1955 with strong local support from the Lakeland community and the congressional delegation. The area became Banks Lake National Wildlife Refuge on February 22, 1985.

HIGHLIGHTS

- Fishery goals developed. (Section 1.a)
- Sixty Percent reduction of water hyacinth along the shoreline. (Section 5.e.)
- Eleven federal violations occurred and twelve incident reports were written. (Section 6.a.)
- National Fishing Week is celebrated with the Third Annual Banks Lake NWR Youth Fishing Derby. (Section 8.a.)
- State Historical Marker to be placed at the entrance. (Section 8.b.)
- Okefenokee Adventures Inc. opens a retail and services business, Banks Lake Outpost. (Section 8.c.)

1.

MONITORING AND STUDIES

1.a. SURVEYS AND CENSUSES

Banks Lake National Wildlife Refuge (NWR) is one of the largest freshwater swamp ecosystems in the coastal plain of Georgia. Its unique habitat provides for a diversity of wildlife species that migrate through the area as well as a number of resident species. Incidental sightings from staff and volunteers working in the area add to our knowledge of this satellite refuge. In 2004, a gopher tortoise was observed on the refuge near the boat basin (Figure 1).



Figure 1. Gopher tortoise sighted on Banks Lake NWR in 2004.

Endangered and Threatened Species

Nothing to Report.

Wildlife

Waterfowl

Wood ducks are the most common waterfowl species at Banks Lake. Nest boxes, installed by the State of Georgia in Grand Bay and by staff from the Okefenokee NWR in “Old Field”, have increased the number of nest cavities available. However, the wood duck boxes have not been maintained since 2002.

Fisheries

Goals were developed by the U.S. Fish and Wildlife Service and FWS / BASS cooperative agreement to address the National Wildlife Refuge System Improvement Act of 1997.

GOAL 1: Increase quality (trophy) fishing opportunities.

Objective 1.1: Improve public facilities to promote increased visitation.

Objective 1.2: Promote private sector participation.

GOAL 2: Enhance aquatic habitat.

Objective 2.1: Improve water level manipulation in relation to fish, wading birds and vegetation.

Objective 2.2: Work towards improving water quality problems associated with septic tanks and/or storm water.

Objective 2.3: Control invasive plant expansion.

GOAL 3: Increase the quality of the fishery.

Objective 3.1: Monitor the fish assemblage.

Objective 3.2: Conduct water level drawdown as needed to manage vegetation.

Objective 3.3: Conduct angler needs assessments.

Objective 3.4: Maintain law enforcement to control wildlife violations.

The Banks Lake NWR fishery was not surveyed in 2004. The next survey is scheduled for the fall of 2005. Panama City’s Fisheries Resource Office and Georgia Department of Natural Resources met with the Okefenokee NWR staff in May to discuss data and future plans for Banks Lake. An updated “Strawman” was written in 2004 that identified the following issues to achieve increased public fishing opportunities, enhanced aquatic habitat and increased quality of the fishery:

1. No permanent refuge staff.
2. Water quality problems may exist resulting from the overflow of septic tanks and holding tanks on private land surrounding the lake.
3. Invasive water hyacinth may have direct negative effects on the fishery.
4. Water monitoring stations for water quality or quantity are currently not available.
5. A contour map of the lake-bottom for use in managing water level is currently not available.

1.b. STUDIES AND INVESTIGATIONS

Nothing to Report.

2.

HABITAT RESTORATION

2.a. WETLAND RESTORATION: ON-REFUGE

Nothing to Report.

2.b. UPLAND RESTORATION: ON-REFUGE

Nothing to Report.

2.c. WETLAND RESTORATION: OFF-REFUGE

Nothing to Report.

2.d. UPLAND RESTORATION: OFF-REFUGE

Nothing to Report.

3.

HABITAT MANAGEMENT

The 3,559 acre refuge is composed of several wetland types. Approximately 900 acres are classified as open water, 1,200 acres as marsh and 1,459 acres as cypress swamp. The water control structure was replaced in 2001.

3.a. WATER LEVEL MANAGEMENT

Water levels at Banks Lake were near historic maximum levels in 2004.

3.b. MOIST SOIL MANAGEMENT

Nothing to Report.

3.c. GRAZE/MOW/HAY

Nothing to Report.

3.d. FARMING

Nothing to Report.

3.e. FOREST MANAGEMENT

Nothing to Report.

3.f. FIRE MANAGEMENT

Nothing to Report.

3.g. PEST PLANT CONTROL

Refuge and Georgia DNR aquatic plant management staff sprayed approximately 50 acres of water hyacinth along the shoreline at Banks Lake NWR (Figure 2). Two applications were conducted in June and September. The first treatment killed approximately 60 percent of the plants and further investigation in 2005 will determine the effect of the second treatment.



Figure 2. Water hyacinth along the shoreline of Banks Lake in the summer of 2004.

4.

FISH AND WILDLIFE MANAGEMENT

4.a. BIRD BANDING

Nothing to Report.

4.b. DISEASE MONITORING AND TREATMENT

Nothing to Report.

4.c. REINTRODUCTIONS

Nothing to Report.

4.d. NEST STRUCTURES

Nothing to Report.

4.e. PEST, PREDATOR AND EXOTIC ANIMAL CONTROL

Nothing to Report.

5.

COORDINATION ACTIVITIES

5.a. INTERAGENCY COORDINATION

The Grand Bay-Banks Lake Stewardship Partnership – Phase I Final Report

The Grand Bay-Banks Lake Ecosystem Site Conservation Plan was received in early 2004. This plan was coordinated by The Nature Conservancy through the Grand Bay-Banks Lake Council (GBBL) team. As a follow-up to this plan, a meeting was held on June 9-10 to identify desired future ecological conditions for the wetland complex. The GBBL team met on August 31, 2004 to discuss future planning efforts.

5.b. TRIBAL COORDINATION

Nothing to Report.

5.c. PRIVATE LAND ACTIVITIES

Nothing to Report.

5.d. OIL AND GAS ACTIVITIES

Nothing to Report.

5.e. COOPERATIVE/FRIENDS ORGANIZATIONS

Nothing to Report.

6.

RESOURCE PROTECTION

6.a. LAW ENFORCEMENT

Law enforcement efforts at Banks Lake NWR were carried out by refuge officers from Okefenokee NWR. Distance and budget constraints limit law enforcement efforts. A kiosk located at the boat ramp informs visitors about refuge regulations.

An unresolved dispute concerning private structures along the refuge boundary continues to hamper law enforcement efforts along the north shore of the lake. In December of 2004, a new land owner constructed a pier on refuge property. In the process, a boundary sign was moved and vegetation cut to accommodate the placement of the new structure. In December, refuge law enforcement officers notified the landowner who agreed to remove the structure.

Ten federal violations were issued by refuge officers in 2004 (Table 1). Twelve incident reports were written which included several reports of trash dumping and late night parties involving alcohol. An alcohol related incident was reported involving vehicles operating at a high rate of speed in and around the parking area, escalating to a fistfight which dispersed as the Sheriff's Office was responding. The placement of resident volunteers on the refuge has curtailed related incidents.

Table 1. Federal violations issued by refuge officers in 2004.

Refuge Violations	Number of Case
Operation of a boat without the required P.F.D.	5
Possession of a firearm	2
Fishing without a State License	2
Possession of controlled substance	1
Total	10

6.b. WILDFIRE PREPAREDNESS

Nothing to Report.

6.c. PERMITS AND ECONOMIC MANAGEMENT

See Section 1.b.

6.d. CONTAMINANT INVESTIGATION AND CLEANUP

The 2001 draw down of Banks Lake exposed numerous septic systems (Figure 3). County officials were advised and given photographic evidence of these violations. In 2002, a court order required refuge staff to raise the lake to full pool, inundating the septic systems. In 2003, a letter was submitted to the United States Attorney's Office from the Regional Solicitor's Office requesting an ejectment order against five landowners whose structures are encroaching upon Federal lands. The Fish and Wildlife Service has not been notified on the current status of the order.



Figure 3. Exposed septic systems at Banks Lake.

6.e. WATER RIGHTS MANAGEMENT

Nothing to Report.

6.f. CULTURAL RESOURCE MANAGEMENT

Nothing to Report.

6.g. FEDERAL FACILITY COMPLIANCE ACT

Nothing to Report.

6.h. LAND ACQUISITION

Nothing to Report.

6.i. WILDERNESS AND NATURAL AREAS

Nothing to Report.

6.j. THREATS AND CONFLICTS

The United States District Court, in the ruling issued in May of 2000, set the legal boundary along the north shore. Prior to the final ruling, property owners continued construction of homes, fishing shacks, boathouses, docks and various other structures along the boundary. The new structures were consequently built on federal property. Several owners have removed the encroaching structures but a few still remain. The Fish and Wildlife Service Regional Solicitor's Office has requested assistance from the United States Attorney's Office on the removal of these structures. These structures are not connected to the city sewer service and appear to have inadequate sewage and gray water treatment facilities. The land base on which these structures are built does not provide the adequate space needed for a septic tank and drain field. The service has contacted Lanier County, Government Health Department, Environmental Protection Agency, and Georgia Environmental Protection Division, requesting verification on wastewater treatment systems in compliance with all applicable county and state regulation or a response that includes the date by which a written plan would be developed and implemented to bring wastewater treatment systems into compliance. The issue has not been addressed by any of the organizations notified.

7.

ALASKA ONLY

8.

PUBLIC EDUCATION AND RECREATION

8.a. PROVIDE VISITOR SERVICES

This is an un-staffed station. Facilities provided include a kiosk, concession, parking lot, fishing pier, and doublewide boat ramp. Information pertaining to visitation is not collected.

Special Events

National Fishing Week was celebrated on May 29 with the Third Annual Banks Lake NWR Youth Fishing Derby. Eighty-seven children ages 3 - 15 registered for the fishing derby held at Flatlanders Lake in Lakeland. The City of Lakeland stocked the pond with catfish for the event, and participants caught over 700 hundred fish. The refuge hosted a Kids Casting Clinic and Competition, sponsored by Valdosta Bassmasters and Valdosta Bassbusters. Other activities included a worm grunting demonstration, knot tying, boat and motor show, fish art t-shirts, food, drinks, raffle, and awards ceremony (Figure 4, 5).



Figure 3. Ranger Russell Barber describes the fine art of worm grunting to a visitor.



Figure 4. AmeriCorps team members help visitors with t-shirt art.

Community support for this event was outstanding! Approximately 200 people attended the day-long event. Two staff and eight volunteers from the Okefenokee NWR and AmeriCorps assisted with the event. The bass clubs provided prizes and certificates and assisted with the derby. The City of Lakeland provided police support at both venues, port-o-johns, extra garbage cans, and pickup. Sponsors included Okefenokee Wildlife League, Valdosta Bassmasters, Valdosta Bassbusters, Carlton Outdoors, F&M Bank of Lakeland, Okefenokee Adventures, Okefenokee Pastimes, Wal-mart Kids All-American Fishing Program, City of Lakeland, and the Recreational Boating and Fishing Foundation “Water Works Wonders”.

Southern Outdoors Productions in Valdosta interviewed and filmed the event for a local television program which aired several times during the summer. Several VHS copies were sent to the refuge and are currently on file.

8.b. Outreach

Rosemary Lee Henderson of the National Society of Colonial Dames, John Howell Sr. Chapter received permission to install a State Historical Marker along the Georgia Department of Transportation highway right-of way at the entrance to Banks Lake NWR. Ms. Henderson is a descendent of Joshua Lee, the man attributed with installing a Grist Mill operated by a water wheel at Banks Lake in the early 1800’s.

8.c. Concession Operations

On September 1, 2004, Okefenokee Adventures Inc., was issued a Special Use Permit to open a retail and services business at Banks Lake NWR. The permit allows “Banks Lake Outpost”, an auxiliary outlet of Okefenokee Adventures, to operate for a period not to exceed one year. The opportunity to bid on the multi-year contract will occur in 2005.

The “Banks Lake Outpost” provides a sales outlet for retail items such as clothing, souvenirs, equipment, and convenience items. In addition, the outpost provides services such as canoe/kayak rentals and interpretive paddling excursions.

9.

PLANNING AND ADMINISTRATION

9.a. COMPREHENSIVE CONSERVATION PLANNING

The Comprehensive Conservation Plan (CCP) for Banks Lake NWR is not included in the Okefenokee CCP. The Okefenokee NWR planning website indicates that the plan has a completion deadline in 2017.

9.b. GENERAL ADMINISTRATION

Banks Lake NWR is administered by the staff at Okefenokee NWR. Refuge staff provides some visitor services and upkeep of public facilities. An estimated 20,000 visitors use the refuge mainly for freshwater fishing, wildlife observation and photography.

9.c. TRAINING AND TRAVEL

Nothing to Report.

9.d. ENERGY

Nothing to Report.

9.e. FUNDING

Nothing to Report.

9.f. SAFETY

Nothing to Report.

9.g. VOLUNTEERS

Banks Lake NWR hosted their first work camper in March, 2004. An advertisement for a volunteer position was posted on www.volunteer.gov and through *Workamper* magazine. A 32 foot camper trailer was setup on site for housing. Duties have included general maintenance of grounds and facilities and public contact. More than 1800 volunteer hours were recorded (Figure 5).



Figure 5. Volunteers, AmeriCorps and Refuge Staff gathered for a cleanup day at Banks Lake.