

REVIEW AND APPROVALS

OKEFENOKEE NATIONAL WILDLIFE REFUGE

FOLKSTON, GEORGIA

ANNUAL NARRATIVE REPORT

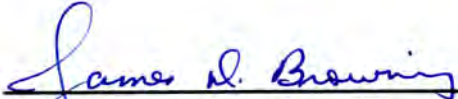
Calendar Year 2005



Refuge Manager

05/13/06

Date



Refuge Supervisor, Area III
Acting

5-23-06

Date



Chief of Refuges

5-24-06

Date

TABLE OF CONTENTS

INTRODUCTION	iii
HIGHLIGHTS	iv
CLIMATIC CONDITIONS.....	v
MONITORING AND STUDIES.....	1
1.a. Surveys and Censuses	1
1.b. Studies and Investigation.....	15
HABITAT RESTORATION	17
2.a. Wetland Restoration: On-refuge	17
2.b. Upland Restoration: On-refuge	17
2.c. Wetland Restoration: Off-refuge	(Nothing to Report).....17
2.d. Upland Restoration: Off-refuge	(Nothing to Report).....17
HABITAT MANAGEMENT	18
3.a. Wetland Management.....	20
3.b. Moist Soil Management	(Nothing to Report).....23
3.c. Graze/Mow/Hay	(Nothing to Report).....23
3.d. Farming	(Nothing to Report).....23
3.e. Forest Management	23
3.f. Fire Management.....	30
3.g. Control Pest Plants	36
FISH AND WILDLIFE MANAGEMENT	37
4.a. Bird Banding	37
4.b. Disease Monitoring and Treatment	37
4.c. Reintroductions	37
4.d. Nest Structures	37
4.e. Pest, Predator and Exotic Animal Control	37
COORDINATION ACTIVITIES	38
5.a. Interagency Coordination.....	38
5.b. Tribal Coordination	(Nothing to Report).....38
5.c. Private Land Activities (excluding restoration) (Nothing to Report).....	38
5.d. Oil and Gas Activities	(Nothing to Report).....38
5.e. Cooperative/Friends Organizations.....	38

RESOURCE PROTECTION.....	41
6.a. Law Enforcement	41
6.b. Wildfire Preparedness	42
6.c. Permits & Economic Use Management	42
6.d. Contaminant Investigation and Cleanup	(Nothing to Report).....42
6.e. Water Rights Management	(Nothing to Report).....42
6.f. Cultural Resource Management	(Nothing to Report).....43
6.g. Federal Facility Compliance Act	(Nothing to Report).....43
6.h. Land Acquisition	43
6.i. Wilderness and Natural Areas	43
6.j. Threats and Conflicts.....	43
ALASKA ONLY	45
PUBLIC EDUCATION AND RECREATION	46
8.a. Provide Visitor Services.....	46
8.b. Outreach	67
PLANNING AND ADMINISTRATION.....	72
9.a. Comprehensive Management Planning.....	72
9.b. General Administration	72
9.c. Training and Travel	76
9.d. Energy	82
9.e. Funding.....	83
9.f. Safety.....	84
9.g. Volunteers	86
9.h. Computers and Communication.....	89

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 presently consists of 401,862 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 educational, 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 refuge's 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

- GOAL receives the 2005 Pulaski Award. (Section 3.f.)
- The refuge hosted the “Managing the Unexpected Workshop.” (Section 3.f.)
- The Conservation Fund donates 6,782 acres along the eastern border of the refuge. (Section 6.h.)
- The Mizell Prairie overlook platform, made possible by a “Power of Flight” Grant, is completed. (Section 8.a.)
- Okefenokee NWR was featured in a segment of “Buggin’ with Ruud”. (Section 8.b.)
- A draft of the Comprehensive Conservation Plan was available for Public Review. (Section 9.a.)
- Skippy Reeves retires after 12 years as Refuge Manager at Okefenokee. (Section 9.b.)

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 2005 resulted in a total of 66.73 inches at Camp Cornelia on the east side of the refuge (Table 1). This is 14.34 inches above the 60-year average of 52.39 inches. The rainfall was over the monthly averages in all months except January, September, and November. Water levels remained high during most of the year. 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 59.39 inches of rain through the year.

Temperatures ranged from 21°F to a high of 100°F (Table 2) on the east side of the refuge.

Table 1. Monthly precipitation (inches) for 2005 compared with the 60-year monthly average at Camp Cornelia.

Month	2005	Average 1945-2004
January	0.77	3.42
February	5.09	3.50
March	5.17	4.25
April	6.50	3.24
May	5.76	3.62
June	7.34	5.95
July	7.92	7.53
August	9.59	7.27
September	4.25	5.39
October	6.39	3.19
November	1.60	2.18
December	6.35	2.86
TOTAL	66.73	52.40

Table 2. Mean and absolute minimum and maximum monthly temperatures (°F) for 2005 recorded at Camp Cornelia.

Year	Average Minimum		Average Maximum		Absolute Minimum		Absolute Maximum	
	2005	90-04	2005	90-04	2005	90-04	2005	90-04
January	44	42	67	67	21	16	80	84
February	46	45	67	70	30	13	77	88
March	48	50	72	77	33	21	86	90
April	52	54	79	82	39	34	87	95
May	60	62	85	89	50	38	93	103
June	71	68	90	92	63	54	97	104
July	73	71	95	94	71	63	100	106
August	74	70	94	93	70	61	100	104
September	69	69	91	89	62	50	98	98
October	61	59	82	82	42	36	91	95
November	52	43	77	75	33	24	86	89
December	41	43	64	67	27	19	78	84

1.

MONITORING AND STUDIES

1.a. SURVEYS AND CENSUSES

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 survey target dates and survey status will be evaluated if sightings increase. Adult bald eagles were seen within the refuge on three occasions; one was seen near the west side shop in early October and two sightings of an eagle along the east side entrance road and boathouse road occurred in late October.

Red-cockaded Woodpeckers

Population Status

All Red-cockaded Woodpecker (RCW) cavity trees within perimeter upland management compartments were evaluated prior to the 2005 breeding season. Billys Island, Blackjack Island, and Bugaboo Island were surveyed this year for activity and cavity suitability; all three islands received prescribed burns during the 2005 growing season. The survey suggested the number of known active RCW groups was 26 (Figure 1); ten additional groups on two other interior islands (Honey and Mitchell) were active in 2003, thus, the total number of active groups refuge-wide is assumed to be 36. The upland management compartments contained 16 active and 29 inactive clusters (Table 3), and the three interior islands surveyed in 2005 contained 10 active and 15 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, particularly with respect to availability of suitable cavities, is critical in determining the limiting factors within these populations. Fire is an essential element needed to maintain understory plant species and improve forage and nesting habitat quality for RCW groups.

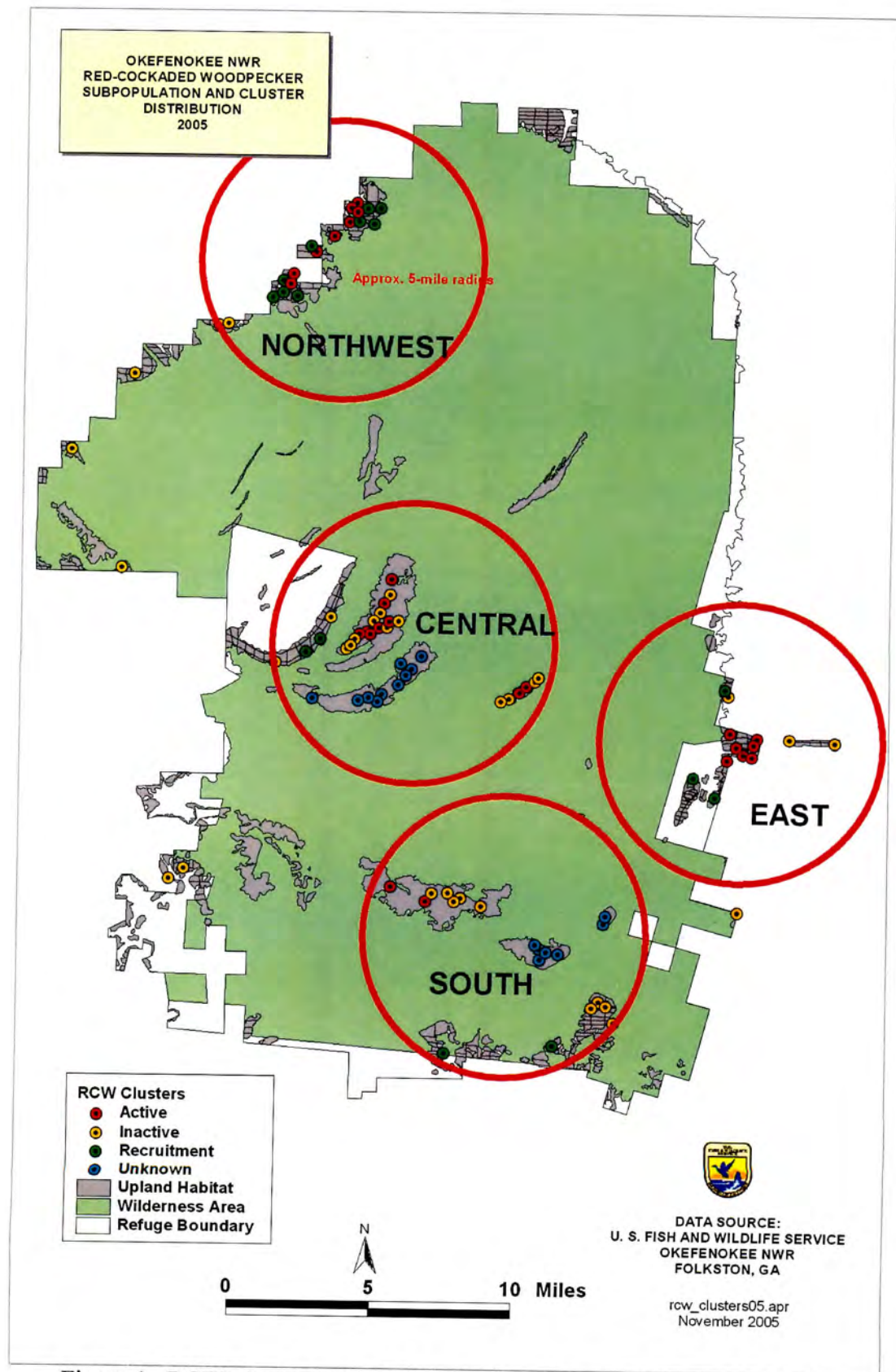


Figure 1. RCW cluster status within the four refuge populations in 2005.

Table 3. RCW clusters in upland management compartments in 2005.

Compartment	All Clusters		Artificial Clusters	Artificial Clusters Occupied This Year	Inserts Installed This Year	Total Clusters
	Active	Inactive				
2	0	A, B	B	0	2 Replaced	2
3	C, E, F, G-L, H, I, J	A, B, K	J, K, L	J, L	3 Replaced 4 New	10
4	0	A, B	B	0	0	2
5	0	A, B, C, D, E	E	0	0	5
6	0	A	A	0	1 Replaced	1
7	0	A, C	0	0	0	2
8	0	A, B	B	0	2 Replaced	2
11	0	A	A	0	2 Replaced	1
12	0	A, B, C	B	0	0	3
13	B, D	A, C, E, F	A, C, D, E, F	D	0	6
14	A	B	A, B	A	2 Replaced	2
15	A-B, C, D, J, I	E, F, G, H	E, F, G, H, I	E, I	1 Replaced	9
Totals	15	30	22	6	4 new 13 replaced	45

Table 4. RCW clusters on interior islands in 2005.

Interior Island	Active	Inactive	Total Clusters
Billys Island	A, D, G-H, I, J, K-L	B, E, F, O-P, Q-R, S	12
Blackjack	E, F	A, B, C, D, G	7
Bugaboo	B, C	A, D, E, F	6
Honey	Unknown	Unknown	10
Mitchell	Unknown	Unknown	5
Number One	Unknown	Unknown	2
Totals	10	15	42

Population Monitoring and Translocations

Northwest Population

In the northwest population, three nests were initiated in Compartment 15; no nests were found in two of the clusters (15C and 15D) (Table 5). A RCW nest in cluster 15J was predated early in the season. The pair re-nested and fledged one juvenile after three flying squirrels were removed from the cluster; seven other flying squirrels were removed from clusters 15B and 15E. Red-bellied woodpeckers nested in RCW cavities in clusters B, C, and D; competition for cavities in these clusters may have been a factor involved in reduced productivity. Three of the natural cavities in cluster 15D were usurped by red-bellied woodpeckers during the beginning of the breeding season; two RCW's moved into available insert cavities. The recruitment cluster 15E had one active tree prior to the breeding season, but the single RCW that was roosting there moved out; this individual appeared to be one of the group members from 15D. One RCW was found dead in an insert cavity in cluster 15C. The bird was a two-year old male born in the adjacent cluster 15J and banded as a nestling in May 2003. The cause of this individual's death is unknown.

Five of the six RCW's that were translocated to Compartment 13 from Ft. Stewart remained in the compartment. The pair that was released in 13B stayed in that cluster and a male from 13A moved to cluster 13D and resides in the cluster with two females; all three have been seen foraging together on several occasions. The pair translocated to cluster 13B attempted to nest in 2005 but were unsuccessful; three eggs were laid in mid May but the nest was found empty. A recruitment cluster in Compartment 14 attracted a pair of RCW's in 2005. The female of the pair originated from cluster 15D and was banded as a nestling in 2004. The male is one of the birds translocated from Ft. Stewart to cluster 13A during November 2004. Both of these birds have been seen foraging together and maintaining resin wells on their roost trees.

East Population

Six of the seven active clusters in the east population remained successful during the 2005 nesting season despite high competition for nest cavities from flying squirrels and red-bellied woodpeckers (Table 5). Red-bellied woodpeckers usurped RCW cavities in six of the seven clusters, red-headed woodpeckers usurped cavities in two clusters, and 24 flying squirrels were removed from cavities in four clusters. Cluster 3C near the pond on the wildlife drive had a single female RCW roosting in the north part of the cluster. This female was one of the juveniles born in cluster 3F in 2004. During November, an adult male red-bellied woodpecker was seen trying to remove this female from its roosting cavity.

Table 5. Nesting and reproduction in perimeter clusters during 2005.

Cluster	Clutch size	No. Banded	No. Fledged	Sex	Adults
3C	No nesting – two active cavities				1
3E	2	2	2	2 males	3
3F	2	2	2	2 females	2
3G-L	1	1	1	1 male	2
3H	1	1	1	1 female	2
3I	2	2	2	2 males	3
3J	1	1	1	1 male	2
15A-B	2	2	2	1 female, 1 male	2
15C	0	0	0		2
15D	0	0	0		2
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 unk.	3
15J	1	1	1	1 male	2

Biological staff banded nine RCW nestlings in Compartment 3 during the 2005 breeding season (Table 5). One adult female was captured and banded this year in cluster 3H and one adult male was captured in 3E to replace color bands. Visual observations indicate that all of the other adult RCW's in this compartment have been previously banded, although some have color bands that faded and will need to be replaced. To provide an adequate number of suitable cavities, inserts will be replaced or installed in several clusters prior to the breeding season (Figure 3). In addition, twenty flying squirrels were removed from three clusters prior to the 2005 breeding season (Figure 4).



Figure 2. Two RCW nestlings with color bands from cluster 3I, May 2005.



Figure 3. Installing an artificial insert cavity in cluster 3I, November, 2005.



Figure 4. Southern flying squirrels removed from a cavity in cluster 3J, April, 2005.

Central and South Populations

Billys, Blackjack, and Bugaboo Island clusters were surveyed this year in conjunction with RCW tree preparation prior to growing season burning. Six clusters on Billys Island had some activity while six other clusters were inactive. One new active cavity tree was found in cluster L on Billys Island this year. One RCW nest was found in cluster D on Billys Island; an adult was observed sitting on a nest while a noisy adult remained in the area during the survey. Only one dead cavity tree was found this year in cluster I on Billys Island; this tree was a new active tree and likely the nest tree for the cluster in 2004. Three new active starts were found on Blackjack Island; two were in cluster E and one in cluster F. No activity was noted in clusters A, B, C, and D on Blackjack Island. One new active start was found in cluster B on Bugaboo Island in 2005.

Habitat Management

Dormant season prescribed burning was conducted in inactive clusters (Table 6). Conditions were generally favorable this year for growing season burns. Burning was conducted on Billys, Blackjack, and Bugaboo islands to reduce fuel loads and control understory species in all of the RCW clusters (Table 6); burns on Billys and Blackjack were done during the nesting season, and Bugaboo was burned in July after the nesting season was finished. The northern end of Billys Island was visited a few days after burning was completed and looked very good; most of the understory burned cleanly and little scorch was observed.

Thinning of forest stands to improve RCW habitat has begun on the south end of Chesser Island in Compartment 4, and timber marking was completed by forestry staff in the eastern half of Compartment 1. Table 6 includes all growing and dormant season acres for 2005.

Table 6. Prescribed burns in RCW clusters in 2005.*

Burn Category	Active Clusters	Inactive Clusters	Recruitment Stands
growing season	C3-3 (389 acres) Blackjack Island (2,800 acres) Billys Island (3,329 acres) Bugaboo Island (352 acres)	C2-1 (171 acres) C3-6 (78 acres) C5-1,2 (817 acres) Number One Island (170 acres)	C5-3 (248 acres) C6-1 (174 acres)
dormant season		C4-4&5 (54 Acres) C8-5 (460 acres)	

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

RCW Habitat Partnerships

The refuge currently has agreements, Memorandums of Understanding (MOU), with two adjacent landowners to manage forest stands for RCW foraging or nesting habitat (Figure 5). Approximately 8,500 acres of upland forest habitat adjoining refuge forest compartments 1, 2, and 3 are included in these MOU's. The refuge's MOU with International Paper (IP) covers management of 6,782 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 will be done by IP, will include longer harvest rotations of thirty years and greater, thinning stands at 10-year intervals, and replanting suitable areas with longleaf pine. The acreage covered in this MOU became part of Okefenokee NWR in November 2005; however, management of timber resources will remain with IP until 2080.

The second MOU with the Georgia Forestry Commission (GFC) includes 2,258 acres of Cowhouse Island on the Dixon Memorial State Forest (DMSF). Most of the MOU area consists of pine plantations less than 20 years old; but 263 acres are currently suitable foraging habitat containing 47 year old slash pines, almost all of which are old turpentine trees and still retain the catfaced scars on the trunks. Since 1997, GFC has replanted 82 acres of the MOU area with longleaf pine seedlings. The total pine acreage within the agreement area is 1,333 acres. This additional acreage will augment the 1,082 acres of refuge forest stands in Compartment 1 and provide nesting and foraging habitat in the future for approximately 12 RCW groups.



Figure 5. Map of MOU sites along the refuge boundaries that provide foraging (IP/Conservation Fund) or foraging/nesting (Georgia Forestry Commission) habitat for RCW.

Recruitment Stands and Artificial Clusters

One recruitment site in Compartment 14 was activated this year. There are 13 recruitment sites and 10 inactive clusters around the refuge that are available for RCW's to move into.

American Alligator

No alligator surveys were conducted in 2005.

Other Wildlife

Waterfowl

No formal survey of waterfowl was conducted during 2005. In the past, this information was obtained during monthly airboat surveys. Future survey methods will be evaluated through the CCP step-down planning process.

Marsh and Water Birds

In the past, monthly surveys by airboat tracked wading birds, including the migratory greater sandhill cranes and the resident Florida sandhill cranes. However, airboat use is currently 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 step-down planning process, other survey methods are being evaluated.

The colonial waterbird survey was conducted, in conjunction with the osprey nest survey, on May 3, 2005. One colony with approximately 60 nests was located near the north end of Cravens Hammock. Most of the birds in this colony were great egrets. This was a historic colony that has not been active in recent years. Another colony of white ibis and great egrets, with approximately 20 nests located north of Stephen C. Foster State Park (SFSP), was found to be active again this year. Other historic colony locations were visited, but no activity was found.

An aerial survey for sandhill cranes was conducted on November 1. Twenty-eight cranes were observed within Chesser (11), Grand (6), Mizell (4), and Chase (7) 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 mid to late November.

Raptors

A helicopter was used to conduct the annual osprey nesting survey on May 3. Four nests were located east of the Sill and all were in good condition. All four were viable structures and may have been used for nesting in 2005. Six other nests seen in 2004 were not found and are believed to have deteriorated or were blown down during wind events from hurricanes in 2004. One osprey was seen perched near a nest along the Suwannee Canal.

Swallowtail kite sightings were common from March through July in upland management 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, 5, 13, and 15. An aerial nest survey was conducted by Georgia Department of Natural Resources (GA DNR) staff in 2005. Although flight paths on this survey were not inside the refuge boundary, kite nests were found near the west side of the refuge and south of the refuge boundary along the St. Marys River.

Other Birds

Breeding bird point counts were conducted at the end of May and beginning of June at previously established upland habitat sites in Compartments 3 and 5. Counts along the wilderness canoe trails were conducted in Grand, Chesser, Durdin, and Carter Prairies. The species recorded this year were slightly fewer than in previous years. A total of 28 different species was identified this year compared to 36, 33, 30, and 32 identified in 2000, 2001, 2003, and 2004 respectively. Carolina wrens were the most common species present at 18 of the 19 survey sites.

The annual Christmas Bird Count was held on December 30 with seven participants. Eighty-eight species were recorded county wide with 51 species recorded within the refuge boundary. A total of 2,932 individual birds was observed during this year's survey, which was less than half of the total number recorded in 2004. Yellow-rumped warblers, American robins, and turkey vultures were the most abundant species, comprising almost one third of the total number of individual birds reported.

Mammals

The east entrance deer hunt in Compartments 3 and 4 was conducted on October 28 and 29. 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. Ninety-one people applied and 30 hunters were selected, three of which were wheel-chair hunters. A total of 24 hunters (13 of the selected), including two wheel-chair participants hunted on October 28, while 23 hunters participated in the second day of the hunt. A total of fourteen deer (seven females and seven males), including one ten-point buck, were harvested.

The Cowhouse Island section of the refuge was open to deer hunting for the fifth year and administered by GA DNR in conjunction with hunts conducted on DMSF. Refuge hunters were required to follow the 2005/2006 Georgia state regulation guide pertaining to the DMSF. GA DNR reported only one doe and one hog were 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 2005 small game harvest.

The Pocket was opened for archery season for the fourth year from September 10 to October 21. Refuge hunters were required to follow the 2004/2005 Georgia state regulations. There were a

total of 362 hunter visits, which was down from 652 hunter visits in 2004. Five females and 10 males for a total of 15 deer were harvested.

Bear hunting is not allowed on refuge lands; however, during the 2005 season, a record 104 bear were taken in the five Georgia counties surrounding the refuge. Of the 104 bears harvested, 74 were male and 30 were females. Five bears, three males and two females, were harvested on DMSF.

Bear Bait Stations

Surveys of black bears visiting sardine bait stations were conducted from July 13-27. Bears visited 15 of the 33 sites for a total of 45 percent. Visits occurred at one station on Moonshine Ridge, two stations on Fiddlers Island, one station on Mims Island, three stations on Soldier Camp Island, and eight stations on the Pocket.



Figure 6. Intern Melissa Lackey with a sardine can that was torn off and the contents consumed by a black bear.

Fisheries

The refuge contributes to the Suwannee and St. Marys River fisheries, both of which originate within its boundary. The GA DNR conducted an electrofishing survey of the west side of Okefenokee NWR in January 2005, and Panama City Fisheries Assistance Office conducted an electrofishing survey on the east side of the Okefenokee NWR in December 2005 (Table 7). Flier and bowfin dominate the fisheries within the refuge. The next sample of refuge fisheries is planned for 2007.

Table 7. Electrofishing results through December 2005 compared to previous years.

	East Side											West Side										
Species	Dec05	Jan04	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Dec94	Jan94	Jan05	Jan04	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Jan95	Dec93
Pedal Time	4.5	0	2.5	3+	4	6	6	6	4	6	6		6	3	3	4	6	6	6	2	6	6
Warmouth	51	No Sampling	38	26	28	17	4	5	6	21	7	47	27	66	84	99	65	27	15	9	5	20
Pickrel	23		18	28	27	34	8	15	43	57	19	16	87	27	28	34	31	12	25	47	15	37
Lake Chubsucker	5		35	41	14	16	9	1	1	0	0	2	0	2	1	0	1	0	0	2	0	0
Sunfish	0		20	0	0	0	0	0	0	1	2	9	25	12	3	0	0	0	1	0	0	3
Flier	287		90	113	171	178	60	98	387	634	427	239	87	14	10	67	133	35	77	137	29	157
Bowfin	122		317	719	725	258	123	85	67	169	308	228	97	1	4	24	181	68	142	41	66	135
Bullhead	1		3	17	5	15	2	1	0	3	4	10	16	24	35	25	41	10	52	0	9	39
Other	0		36	9	14	13	2	2	12	2	0	5	7	4	80	47	37	1	16	12	0	0
Total	489		557	953	984	531	208	207	516	887	767	556	346	150	245	296	489	153	328	248	124	391

1.b. STUDIES & INVESTIGATIONS

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:

- Chris Dowdy and Don Chappel with the Georgia Forestry Commission conducted and evaluated the Forest Inventory Analysis plots within the refuge. Sites were near Soldier Camp, Mims Island, Cowhouse Island, Kingfisher Landing, Big Water Run, and Billys Island.
- John C. Donahue with Georgia Department of Natural Resources sampled the Camp Cornelia well for pesticides and nitrates/nitrites with field measurements of pH, electrical conductivity, temperature, and salinity.
- Warren Zwanka, a hydrogeologist with the Suwannee River Water Management District, studied the feasibility of the use of magnetic susceptibility in delineating hydric/non-hydric soil boundaries to fulfill a requirement for his Masters program at the University of Florida. The following is the abstract from his report:

Identifying hydric soil boundaries is one component in delineating jurisdictional wetlands. Evaluating hydric soil field indicators using borings along transects is an invasive and arduous task. Magnetic susceptibility (MS) has been used successfully as a geophysical method for determining hydric soil boundaries by detecting a drop in soil magnetism when iron minerals mobilize or are recrystallized in alternating reducing and non-reducing conditions. MS has not, however, been fully evaluated in the soils of the southeastern coastal plain where iron minerals are uncommon and a substantial amount of wetland delineation work is performed. Five relatively pristine and two disturbed wetland sites in North Florida were rapidly evaluated by recording uncorrected volumetric MS measurements (n=12 hydric and n=12 non-hydric) on 1 yard x 7 yard transect grids centered on the hydric soil boundary as determined by field indicators. At the more sensitive x0.1 setting, instrument drift obscured any true differences in the populations of hydric and non-hydric MS values. Two additional sites in southeastern Georgia and two of the original sites were selected for a more intensive survey of n=30 random hydric and n=30 random non-hydric volumetric MS

measurements recorded inside a 3 yd x 20 yd transect block centered on the hydric soil boundary. Values were air-corrected for temperature drift and the hydric and non-hydric populations were compared. All four sites showed significant ($P < 0.004$) differences in both population means and medians. However, the necessity for air correction, statistical analysis, and the lack of a unique MS value separating hydric and non-hydric populations make the use of this technique for delineating the precise hydric soil boundary impractical in this region. Mass specific MS measurements of the surface soils at two sites had a marginal correlation ($R^2 = 0.78$) with their total and ammonium oxalate extractable iron values, and trace amounts of iron minerals – most likely maghemite and goethite – were magnetically separated from filter residue and unaccounted for in the total iron analysis. This sporadic occurrence of ferrimagnetics has an overriding yet difficult-to-quantify influence on the effectiveness of this method in the southeastern coastal plain.

- E. Michael Perdue from Georgia Tech evaluated a new method of isolating and purifying dissolved organic matter within the Suwannee River using a portable reverse osmosis system. Perdue periodically collects humic.
- John R. Meyer, an entomologist at North Carolina State University, collected insects for use as study specimens in general entomology courses.
- Permission was granted to the staff of the U.S. Geological Survey to collect water samples from the domestic well at the Chesser Homestead as part of a groundwater-quality study of the Floridian Aquifer system.

2.

HABITAT RESTORATION

2.a. WETLAND RESTORATION: ON-REFUGE

The acquisition of 6,782 acres along the refuge's northeast boundary in 2005 includes approximately 385 acres of wetlands. Many of these wetlands have man-made channels linking them together and directing the water towards the swamp. Timber harvest operations have penetrated the edges of these wetlands as well. Although management of these lands does not transfer from International Paper, Inc. to the refuge until 2082, discussions are being initiated as to how these wetlands can be restored to more natural conditions.

In 1998, an Environmental Assessment (EA) of the Future Management of the Suwannee River Sill was completed. 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. Based on these findings, the refuge continues to pursue the preferred alternative. Approximately \$5.1 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.

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 401,862 acre refuge includes most of the 438,000-acre Okefenokee Swamp. To protect this sensitive ecosystem, the refuge has established a set of goals, objectives, and strategies through the Comprehensive Conservation Planning (CCP) process. The following wildlife management, resource protection, and wilderness values goals and objectives will guide habitat management at Okefenokee NWR through the next 15 years:

Wildlife Management

Goal: Promote and provide high quality habitat and protection for endangered and threatened species and conserve the natural diversity, abundance, and ecological function of native flora and fauna on and off refuge lands.

Objective 1. Protect and maintain the threatened and endangered species populations, expanding their populations where possible, and enhancing the habitat on the refuge by working with adjacent landowners. Encourage other land managers in the area to promote appropriate habitat for threatened and endangered species to create a larger gene pool, increase opportunities for survival within the ecosystem, and restore a piece of the area's natural heritage.

Objective 2. Identify factors influencing declines in the Okefenokee NWR's fishery by examining water chemistry, groundwater withdrawals, water quality, pH levels, invertebrate populations, and the physical environment. Evaluate feasibility of restoring the fish population.

Objective 3. Determine the status, specific habitat requirements, and limiting factors of reptile species including those associated with the upland pine community. Evaluate feasibility of restoration.

Objective 4. Maintain, enhance, and promote upland linkages to ephemeral wetlands for the flatwoods salamander, striped newt, gopher frog, and other amphibians.

Objective 5. Understand and maintain the role of invertebrates in the structure and function of the Okefenokee ecosystem.

Objective 6. Understand the use patterns of select resident and migratory birds to identify critical habitat components and the impacts of management practices and natural events.

Objective 7. Continue to work with Georgia Department of Natural Resources and Florida Fish and Wildlife Conservation Commission to monitor and manage the mammal populations within and around the refuge.

Objective 8. Examine wildlife population health and contaminant availability within the ecosystem.

Objective 9. Strive to maintain the natural diversity and abundance of wildlife species within the physiographic region of the Okefenokee Swamp by forming a network of agencies and organizations that would share data in a timely manner to influence management decisions and recognize problems within the system.

Resource Protection

Goal: Restore, maintain, protect, and promote native habitats and healthy natural systems where possible to imitate historic distribution, frequency, and quality on and off the refuge, and preserve the associated cultural sites and wilderness qualities.

Objective 1. Restore, enhance, and promote the native upland communities and the associated wetlands to maintain the natural vegetation mosaic, diversity, and viability found prior to European settlement within the Greater Okefenokee Ecosystem while improving opportunities for RCW activity.

Objective 2. Maintain, enhance and promote the Greater Okefenokee Ecosystem's native wetland communities, their natural vegetation mosaic, diversity, viability, and dynamics, as found within the Okefenokee Swamp.

Objective 3. Conserve natural resources through partnerships, protection, and land acquisition from willing sellers within the "zones of influence."

Objective 4. Investigate presence of and reduce non-native invasive plants and animal populations to minimize negative effects to native flora and fauna.

Objective 5. Identify and protect the archeological and historical sites on the refuge from illegal take or damage in compliance with the established Acts.

Objective 6. Preserve the wilderness resource within the designated wilderness area.

Wilderness Values

Goal: Restore, preserve, and protect the primeval character and natural processes of the Okefenokee Wilderness, leaving it untrammelled by man while providing recreational solitude, education, scientific study, conservation ethics, and scenic vistas.

Objective 1. Preserve the primeval character of the Okefenokee Wilderness through management and re-establishment of ecological conditions that allow maximum use of natural processes.

Objective 2. Provide recreational opportunities in wilderness that emphasize solitude.

Objective 3. Provide educational enrichment related to wilderness.

Objective 4. Accommodate scientific study for the purpose of managing the area as wilderness and protecting the Okefenokee Ecosystem.

Objective 5. Promote conservation ethics in wilderness.

Objective 6. Provide scenic vistas in wilderness.

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 challenges 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 longleaf pine/wiregrass community and the red-cockaded woodpecker. A Habitat and Population Management Plan is currently being written as a step-down plan under 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 continued to experience problems during 2005.

Water levels on the east side of the refuge were above the 15-year average throughout the year (Table 8, Figure 7, 8). With greater than normal rainfall for nine months out of the year, water levels were greater than a foot above the average from April through September.

Table 8. Water levels (msl) at Suwannee Canal Recreation Area (SCRA) and Stephen Foster State Park (SFSP) for 2005.

	SCRA		SFSP	
	2005	Avg 90-04	2005	Avg 90-04
Jan 1	120.78	119.88	114.98	114.51 ₁₃
15	120.73	119.99	114.90	114.68 ₁₃
Feb 1	120.62	120.21	114.79	115.00 ₁₄
15	120.53	120.24	114.71	115.17 ₁₄
Mar 1	120.91	120.26	115.26	115.31 ₁₃
15	120.92	120.35	115.17	115.33 ₁₄
Apr 1	121.36	120.33	115.63	115.12 ₁₄
15	121.37	120.21	116.11	114.77 ₁₄
May 1	121.25	120.04	115.39	114.41
15	121.10	119.78	115.09	113.99
Jun 1	121.05	119.51	114.79	113.80
15	121.12	119.62	114.75	114.03
Jul 1	121.24	119.79	115.40	114.13
15	121.63	119.84	115.50	114.20
Aug 1	121.45	119.88	115.16	114.33
15	121.55	119.95	115.30	114.42
Sep 1	121.29	119.98	115.28	114.39
15	121.06	119.98	114.84	114.66 ₁₄
Oct 1	120.92	120.07	114.74	114.56
15	121.12	120.20	115.02	114.77 ₁₄
Nov 1	120.98	120.10	114.72	114.51 ₁₄
15	120.80	120.02	114.49	114.43
Dec 1	120.79	119.93	114.57	114.38
15	120.97	119.92	114.93	114.41

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

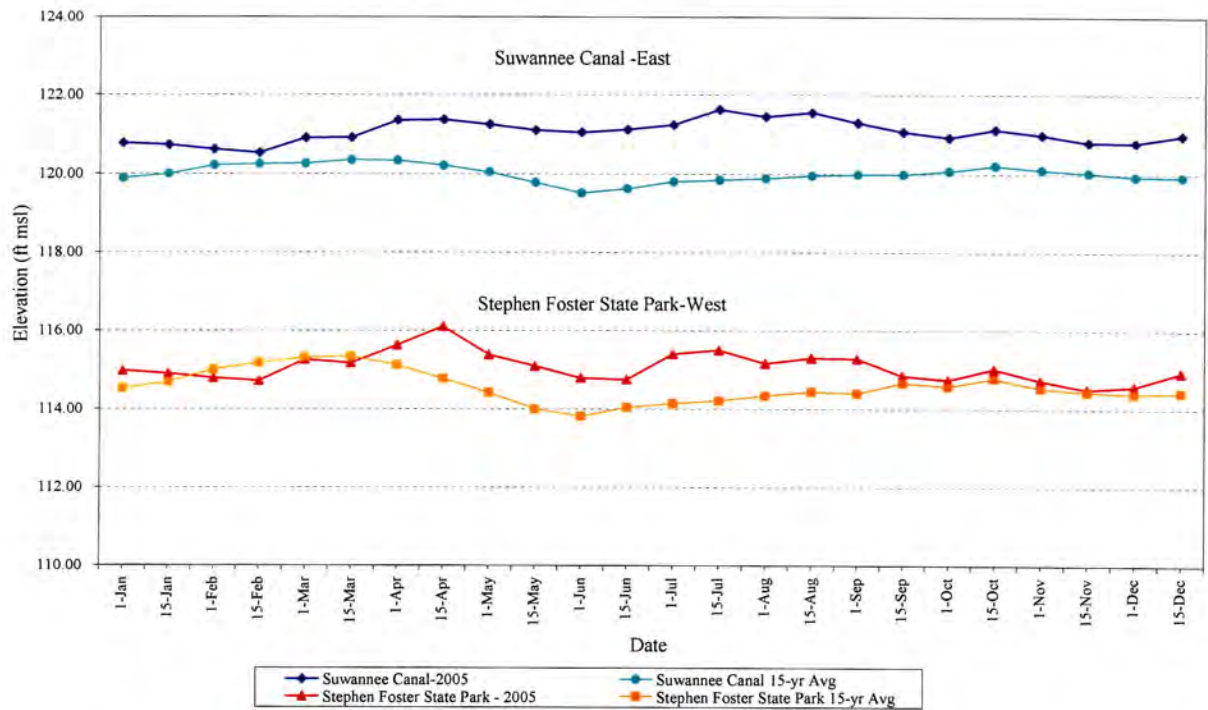


Figure 7. Water levels at Suwannee Canal Recreation Area and Stephen Foster State Park during 2005 compared to the 15-year averages.

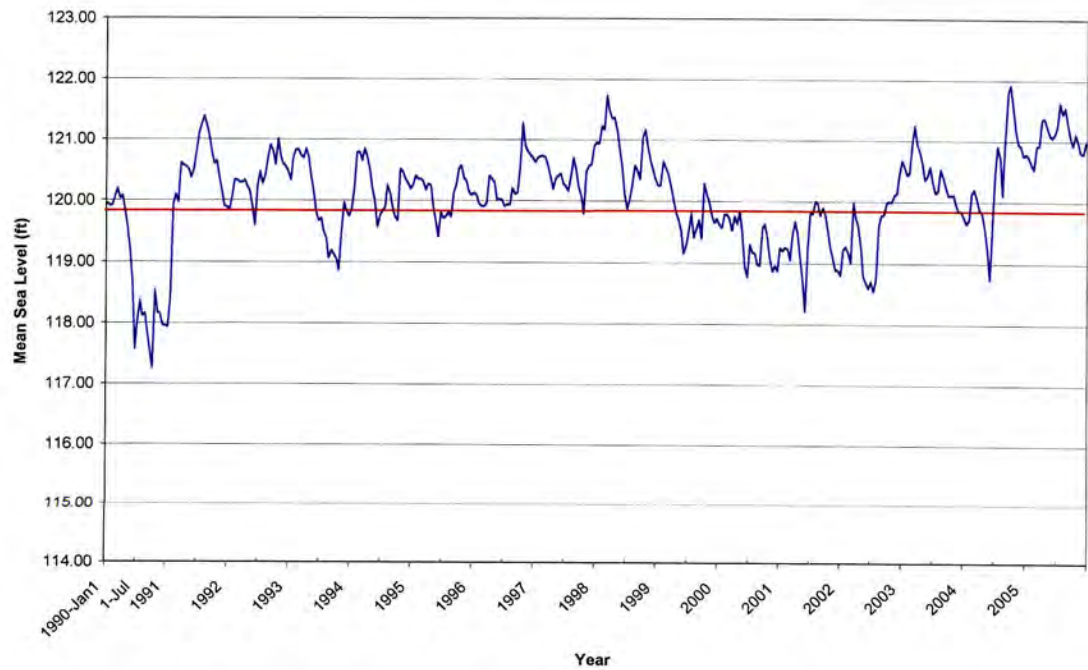


Figure 8. Water levels at Suwannee Canal from 1990-2005.

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 353,913 acres of forested land, including 313,529 acres of wetland hardwoods, cypress, and brush lands. The remaining 40,384 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 22,940 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 the 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	9,471	8,976	18,447
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	4,213	1,730	5,943
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	22,940	17,444	40,384

**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.

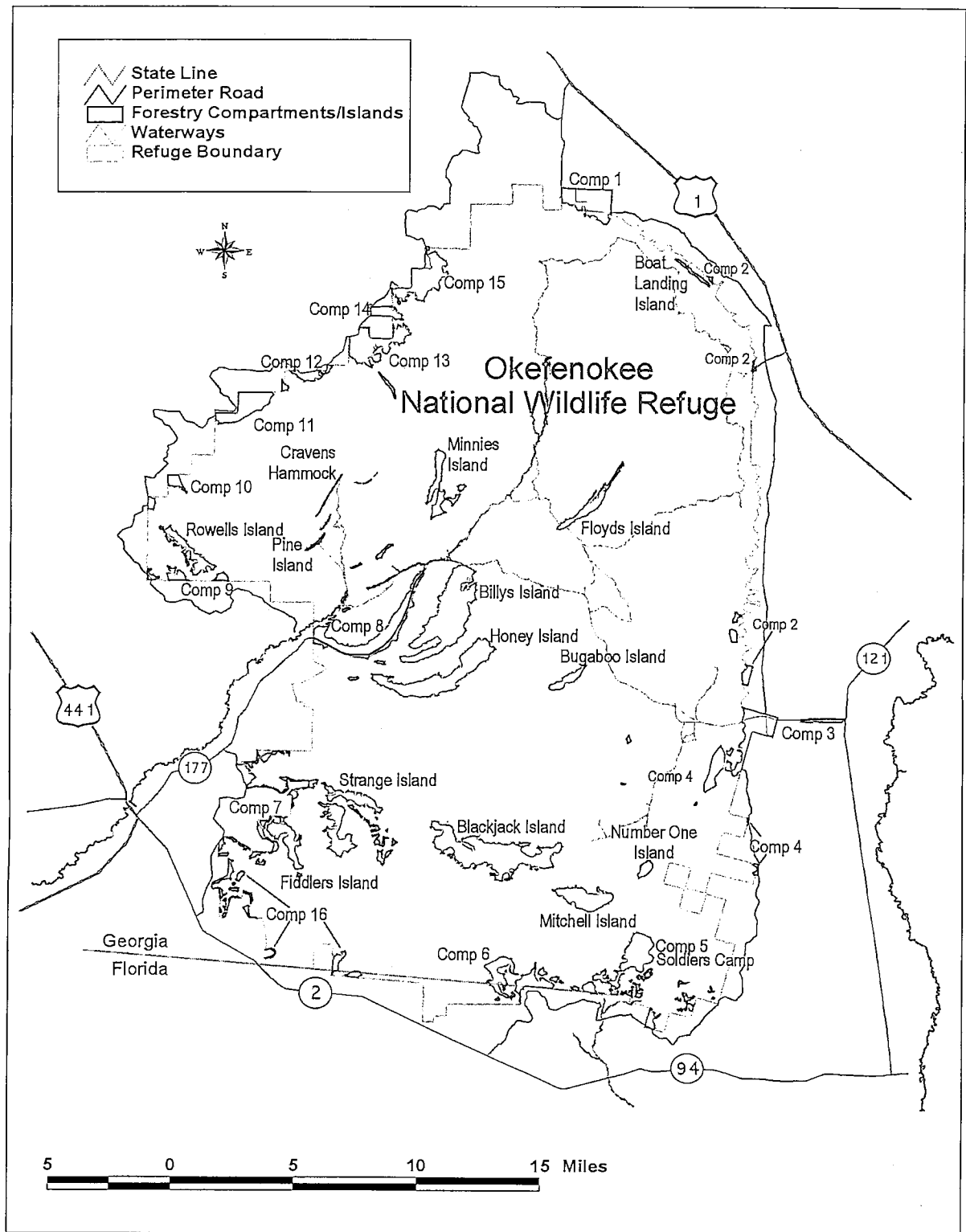


Figure 9. Habitat Management Compartments and Interior Islands.

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 2005, the Habitat and Population Management Plan was included, combining management of uplands, wetlands, hydrology, wildlife, and other disciplines into one comprehensive plan. This plan is part of the CCP as a step-down plan and evaluated through the NEPA process.

Forest Management Prescriptions

Timber harvesting started in January of 2005 based on the approved prescription for Compartment 4. A forest inventory cruise in Compartment 2 will begin in the spring of 2006. A MOU between the Service and International Paper Company, Inc. is allowing longer rotations of pine timber on lands now Service-owned, but managed by IP on the east edge of the refuge. These acres will provide a vital corridor between RCW populations in Compartments 2 and 3.

Timber Marking

Compartment 1 was divided into two sections, and preparations were made for timber marking. Timber marking in Compartment 1 East began April 2004 and was finished in December 2005. The cutter select method of timber harvesting is being used in Compartment 4, eliminating the need for forestry technicians to mark the area.

Timber Harvesting

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. Timber harvest for Compartment 4 SE and SW started in January 2005 and will continue into 2006. With the timber marking completed in Compartment 1 East, bid packages were mailed out in December 2005 and will be opened in February 2006. 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 2005.

Special Use Permit #	Permittee	Area	Product	Value/Ton	2005 Volume Harvested	2005 Receipts
05-027	C.L. Crews Timber	Compartment 4 (southeast)	Pine Timber	Varied \$ per product	1,953 tons (710 cords)	\$22,628.54
05-028	M&G Logging	Compartment 4 (southwest)	Pine Timber	Varied \$ per product	1,283 tons (466 cords)	\$18,583.65
TOTALS ALL PERMITS					3,236 tons (1,176 cords)	\$41,212.19

Table 11. Ten-year forest products removal summary.

CY	ALL TIMBER CATEGORIES	CORDS	TONS	TOTAL VALUE
1996		448	1,232	\$ 23,489
1997		283	778	\$2,778
1998		1,356	3,739	\$43,438
1999		2,937	8,077	\$94,619
2000		7,603	20,908	\$290,028
2001		5,001	13,753	\$147,693
2002		3,690	10,148	\$88,049
2003		2,499	6,873	\$47,285
2004		5,144	14,146	\$336,477
2005		1,176	3,234	\$41,212

Status of Longleaf Pine Community Restoration

During the past 30 years, nearly 1,200 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 stock supplied by vendors. Although natural regeneration is preferred, hand planting containerized seedlings is being very successful and achieving desired results.

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 burned. Heavy shrub sites may require several treatments.

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 that longleaf pine communities can be restored on refuge upland forest management compartments without clear cutting and planting operations.

Reforestation

Fifteen thousand containerized longleaf pine seedlings were obtained from Meeks Farms in Kite, GA. The fire crew and AmeriCorps planted seedlings in 14 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 2005.

COMPARTMENT OR ISLAND	MGT UNIT	NUMBER OF SEEDLINGS	AREA (Acres)	REMARKS
Compartment 11	1	3,500	4.6	Additional trees were planted in several open areas that were created by 2003 wind storm. Also planted LLP patch regeneration area.
Compartment 3	6	1,000	1.3	Trees were planted in a bug killed area.
Compartment 7	5 3	4,000 1,700	10 2.9	LLP seedlings were planted on mounds and open areas created by wildland fire in 2002. Open area in NW corner of unit.
Compartment 15	1 1 1 1 2 2 2 2 2 2 2	213 465 825 125 209 465 109 234 79 119	1.3 1.4 2.7 0.5 0.3 0.5 0.8 0.3 0.4 0.5	Additional trees were planted in logging decks and in patch regeneration sites.

Note: 2,000 Longleaf pine seedlings were donated in the community to help promote planting of longleaf pine trees.

Timber Stand Improvement

No timber stand improvement (TSI) was accomplished in 2005. 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 Fire for Natural Resource Benefit (Fire Use), 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 high. 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 2006 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.

In 2005, GOAL was the recipient of the Pulaski Award (Figure 10). The Pulaski Award is a national award created in 1998 by the United States Department of Agriculture (USDA), to recognize outstanding contributions to wildland firefighting and America's wildland firefighters. The Pulaski Award recognizes groups, which show outstanding successful performance in interagency cooperation, coordination, and standardization; safety of firefighters and/or the American public during a wildfire; and outstanding group performance in fire management and suppression activities according to the federal Wildland Fire Policy.

GOAL characterizes all the hallmarks of the Pulaski Award. This was recognized when the nomination received from the five National Fire Chief's, a unanimous first round conformation. The refuge is proud of our membership in this organization and will support it in all possible ways.



Figure 10. GOAL was the recipient of the 2005 Pulaski Award. Left to Right: George Constantino, Bill Oettmieir, Skippy Reeves, Mark Crowe, Jim Barrett, Wesley Langdale, Buck Wynn.

The refuge hosted the Wildland Fire Lessons Learned Center's, "Managing the Unexpected Workshop." The focus of the workshop was on High Reliability Organizing. The attraction to Okefenokee came as a result of the excellent cooperative achievements of the Blackjack Bay Complex Fires in 2002. Over 150 attendees from the international fire community came to learn from the experience gained by our cooperators. Presentations were given by sixteen members of the GOAL community during the day long event.

Prescribed Burning

During the past 33 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 at General Coffee State Park in October. Fifty students (mostly AmeriCorps) participated in the class.

In 2005, hazardous fuel reduction and resource objectives were accomplished with 27 burns for a total of 13,621 acres (Table 13, Figure 12). Dormant season burns accounted for 2,968 acres while 10,653 acres of growing season burns were accomplished. Next year (2006) will be a good season for starting to clear a backlog of proposed prescribed burns left over from the last five years of drought. Forty-two acres were burned within Stephen Foster State Park including camping areas and around employee housing (Figure 11). Figure 13 depicts a 1,016 acre prescribed burn along the Pocket.



Figure 11. Structure preparation during a prescribed burn at Stephen Foster State Park.

Table 13. Summary and evaluation of burning activities for 2005.

Burn Unit Name	Dormant Acres	Growing Acres	Total Acres	Date Burned
C1-1 (west)	555	--	555	01/17/05
C2-1	--	171	171	04/28/05
C2-4	35	--	35	01/18/05
C3-2	12	--	12	12/13/05
C3-3	--	389	389	05/25/05
C3-4 & 5	--	206	206	05/19/05
C3-4	42	--	42	12/13/05
C3-5	75	--	75	12/12/05
C3-6	--	78	78	06/20/05
C3-MISC (Shop Area)	12	--	12	01/06/05
C3-MISC (1 yr & 3 rd yr)	6	--	6	01/19/05
C4-4 & 5	54	--	54	01/18/05
C5-1, 2, 3, & 4	--	1,253	1253	05/13/05
C6-1 & 2	--	459	459	05/14/05
C6-3	--	430	430	05/09/05
C7-1 & 2	288	--	288	02/12/05
C8-2, 3, & 4	--	1,016	1016	05/12/05
C8-5	460	--	460	01/21/05
C8-6 (SFSP campground)	30	--	30	01/25/05
C8-6 (SFSP residences)	12	--	12	01/26/05
C16-2 & 4	450	--	450	03/05/05
C16-3	55	--	55	02/16/05
Billys Island	--	3,329	3329	05/10/05
Blackjack Island	--	2,800	2800	04/29/05
Bugaboo Island		352	352	08/29/05
Minnies Island	882	--	882	01/05/05
Number One Island	--	170	170	04/20/05
TOTAL ACRES	2,968	10,653	13,621	

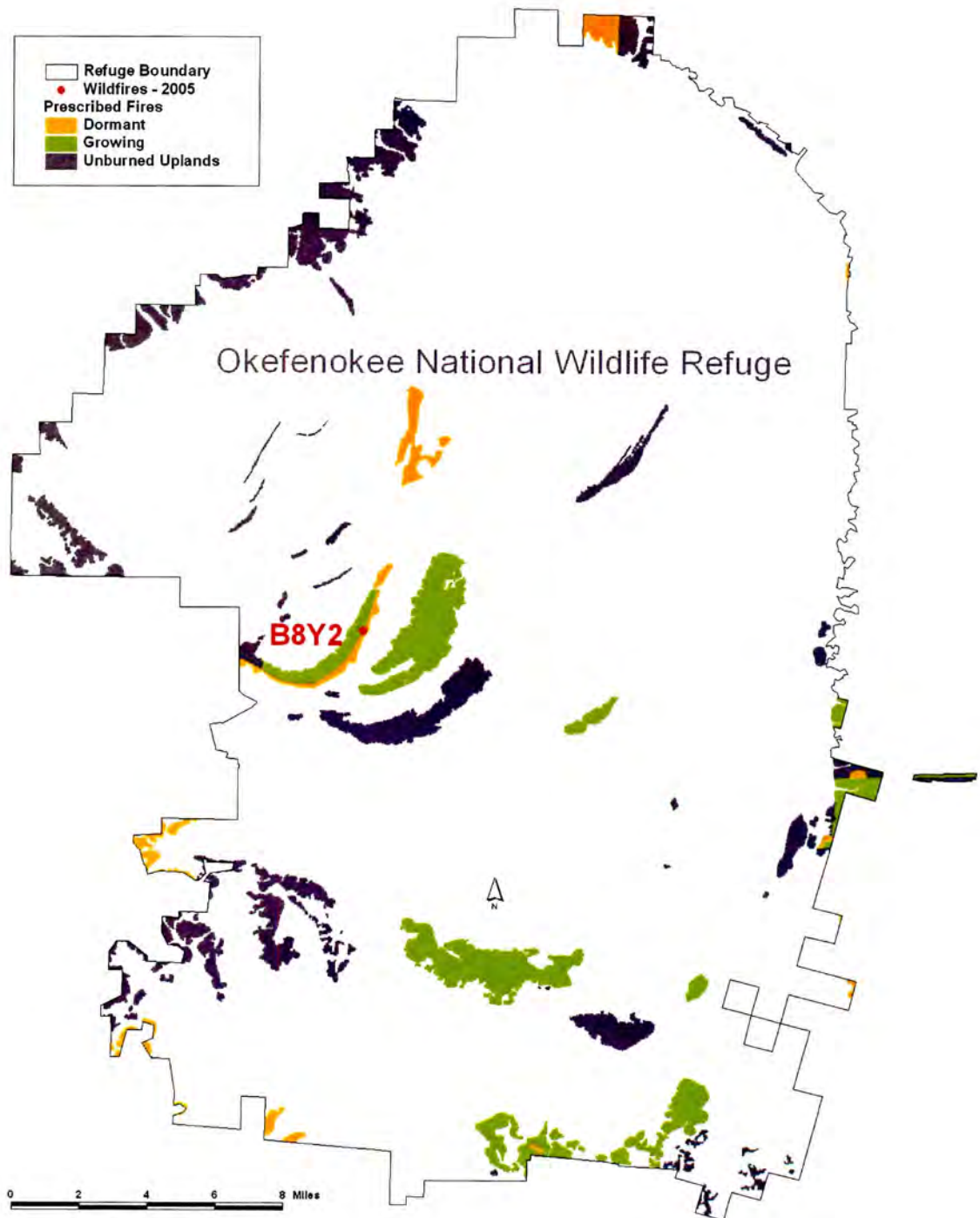


Figure 12. Wildfires and prescribed burns for 2005.



Figure 13. Looking south at a prescribed burn on The Pocket.

Wildland Fire

Water not only found its way back to the system, but continued regularly during the year. This increased moisture developed into an active hurricane season. Only one wildland fire officially occurred on the Refuge. However, it is logical to assume that in the swamp, lightning did start some fires that went out before detection, called “natural outs”. Currently the technology does not exist to locate “natural outs” without spending hours in a helicopter over the wilderness immediately after each lightning storm.

Off-Refuge Fire / Interagency Assignments

Refer to Section 9.c. Training and Travel.

Swamps Edge Break (SEB)

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 SEB 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. No work was done on the SEB this year.

Table 14. Wildfires reported on the Refuge in 2005.

Fire Number	Name	Start Date	Declared Out	Total Acres	Landowner	Location Lat/Long	Cause
B8Y2	C8-Helibase	11/08/2005	11/08/2005	.1	Refuge	30 47 50 082 22 50	Vehicle

Helicopter Dip Sites

Helicopter dip sites are essential to support the fire suppression operations around the boundary of the refuge and the Osceola National Forest. In 1999, GOAL planned to build and rehabilitate 37 dip sites in and around the refuge. Through education 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. Each spot was surveyed by helicopter during 2005.

Fire Management Planning

The Fire Management Plan (FMP) was completed in 2005. It is incorporated into the CCP as a step-down plan and was evaluated through the NEPA process. 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 December 5-31, 2005, cutting all major watercraft trails. Water levels were high providing good flows to move cut material out of the trails.

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 the encroaching vegetation. In addition, volunteer Jackie Carter took a jon boat through the head between Bluff Lake and Territory Prairie periodically to keep the channel open. This narrow head has been subject to maidencane blockages.

Pesticide Use Proposals (PUP) were submitted for Rodeo, Garlon 3A, Amdro Granular Insecticide, PayBack Fire Ant Bait, D-Con, WeatherBlok, Recruit IV Termite Bait, Demand, and MaxForce Hydramethlynon Gel. All pesticides used in 2005 were associated with the residences and public facilities. Rodeo was not used on Okefenokee NWR in 2005.

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 side ditches 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 2005. For information pertaining to RCW insert installation, refer to Section 1.a. Recruitment Stands and Artificial Clusters. A bat house, built by an Eagle Scout, was installed in a wildlife opening along the Wildlife Drive during 2005, to provide a roosting and nursery site for bats.

4.e. PEST, PREDATOR AND EXOTIC ANIMAL CONTROL

Feral hogs continue to be dispatched whenever opportunities arise. Three were taken on the east side of the refuge. No other animals were relocated or dispatched during the year.

5.

COORDINATION ACTIVITIES

5.a. INTERAGENCY COORDINATION

In 2005, the USGS led the second Annual Integrated Science Workshop (on the Suwannee River Basin and Estuary) at the Okefenokee Education and Research Center in Folkston. The workshop was organized to discuss an interagency science plan, interstate science integration, and a web portal to link information resources among agencies and researchers in the Suwannee Basin. The Suwannee Basin Interagency Alliance consists of the following members:

- U.S. Geological Survey
- U.S. Department of Agriculture – Agricultural Research Service
- University of Florida
- University of Georgia
- South Georgia Regional Development Center
- Suwannee River Water Management District
- U.S. Fish and Wildlife Service
- Georgia Environmental Protection Division

Annual interagency coordination was conducted with the Georgia Forestry Commission, Georgia Department of Natural Resources, International Paper, Superior Pine and The Conservation Fund associated with Memorandums of Understanding related to habitat management, fisheries surveys, and prescribed burning operations.

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 14.

OWL board members Patti Sandow, Pam Sikes, Dotty Porter, Fay Johnson, and Refuge Liaison Gracie Gooch attended the Friends Group Conference held in Washington, DC. Members briefed our representatives on issues of concern at the refuge as well as other National Wildlife Refuges. Participation in these workshops has resulted in two \$500,000 congressional add-ons to fund a new environmental education and concession building. Ground breaking will take place spring 2006.

Many of the Representatives, Senators, and congressional staffers enjoyed touring the Okefenokee NWR with Refuge Manager Skippy Reeves and Supervisory Ranger Jim Burkhart. Congressman Jack Kingston, along with his Georgia and Washington Staff Members, held their annual combined Staff Meeting in January at Okefenokee NWR. Congressman Kingston told stories from his youth of visiting the swamp with his father. OWL and Okefenokee Adventures welcomed the Congressman and his staff with a "Low Country Boil" supper and an evening boat tour. OWL presented Congressman Kingston with Lucian Niemeyer's book "Okefenokee".

A much needed, updated, OWL website has been completed by Anole Imaging of Folkston, GA. The website is www.owlleague.org.

Table 14. Owl bookstore sales for 2003-2005.

	2005	2004	2003
January	\$1,873	\$3,020	\$ 2,809
February	\$3,129	\$3,919	\$ 2,288
March	\$6,322	\$6,300	\$ 5,487
April	\$6,557	\$6,848	\$ 4,892
May	\$4,561	\$3,424	\$ 3,953
June	\$2,434	\$2,365	\$ 2,030
July	\$1,942	\$2,603	\$ 2,842
August	\$1,404	\$1,089	\$ 2,347
September	\$2,240	\$937	\$ 1,548
October	\$3,518	\$3,572	\$ 3,247
November	\$3,063	\$3,547	\$ 3,048
December	\$1,809	\$1,899	\$ 2,686
Total	\$38,852	\$39,523	\$37,179

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 build an additional 100 foot boardwalk with a platform for Environmental Education and interpretive programs. On December 10, the ribbon was cut to officially open the Mizell Prairie Education Boardwalk (Figure 14).



Figure 14. Ribbon Cutting Ceremony included Refuge Manager George Constantino, Georgia Power representative David Brown, and OWL representative Jack Sandow.

6.

RESOURCE PROTECTION

6.a. LAW ENFORCEMENT

At the end of 2005, the refuge employed one Full-Time Law Enforcement Officer (FTLEO) and two Dual-Function Law Enforcement Officer's (DFLEO). James Shelton is currently the FTLEO and Deputy Project Leader Shaw Davis and Refuge Ranger Shawn Gillette fill the DFLEO positions. Officers made 46 Federal cases and 15 State/County cases this year (Table 15 and 16). 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 15. Refuge Violations

Refuge Violations	Number of Cases
Violation of State Vehicle Laws (speeding, no driver's license, etc.)	16
Possession of a firearm on a NWR	9
Take/attempt to take and disturbing wildlife on a NWR	7
Trespassing on a NWR	5
Take/attempt to take and disturbing plants on a NWR	3
Fishing on a NWR with no state fishing license	2
Violation of the Refuge Wilderness Canoe Regulations	1
Off road travel in a closed area	1
Hunting on a NWR with no state hunting license	1
Violation of the NWR special fishing regulations	1
Total	46

Table 16. Violations written by GA DNR Officers and County Sheriff Departments

Violations	Number of Cases
Violation of State Vehicle Laws (speeding, no driver's license, etc)	6
Possession of a controlled substance on a NWR	3
Possession of a drug related object	2
Fishing with no state fishing license	2
Operation of a boat without PFD's	2
Total	15

Thirty-nine incident reports were written by refuge officers, ranging from illegal hunting on the refuge to vandalism problems on the board walk. In August, refuge officers were notified that a vehicle was found wrecked and abandoned at Kingfisher Landing. The vehicle was taken and was last seen driven by a person considered to be an endangerment to herself, with a history of mental illness. A search of the area showed she had wandered off the refuge toward the main highway but somehow got turned around and started back onto the refuge. There was evidence in the wrecked vehicle that she was injured and without shoes. The Charlton County Sheriff's Office started a search and rescue effort using bloodhounds and helicopters to track and locate the missing woman. The body of the woman was located the following evening near the refuge boundary. It was later learned she died from injuries sustained during the accident.

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 INVESTIGATION AND CLEANUP

Nothing to Report.

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

On November 21, 2005, The Conservation Fund (TCF) donated to the refuge 6,782 acres of the 16,000 acres along the eastern border of the refuge that E.I. du Pont de Nemours & Company (DuPont) presented to TCF in 2004 (Figure 15). International Paper (IP) retains the timber and recreation rights on this land until 2081. A Memorandum of Understanding is in place between IP and the refuge to manage the timber in such a way as to improve RCW foraging habitat. The donated land is located inside the refuge acquisition boundary and precludes the development of a proposed titanium mine along this section of the boundary.

6.i. WILDERNESS AND NATURAL AREAS

Discussions on minimum tools used within the Okefenokee Wilderness Area continued throughout the year. The new Minimum Requirement Decision Guide was used in the process.

During 2005, administrative trips into the Wilderness Area were documented.

6.j. THREATS AND CONFLICTS

Iluka Mining Company began mining in Brantley County in 2003, and moved into Charlton County in 2004. In 2005, they abandoned operation in Charlton County after the Army Corps of Engineers was sued by environmental groups for granting a permit to the parent company TE Consolidated, allowing them to mine titanium in wetlands near the Satilla River.

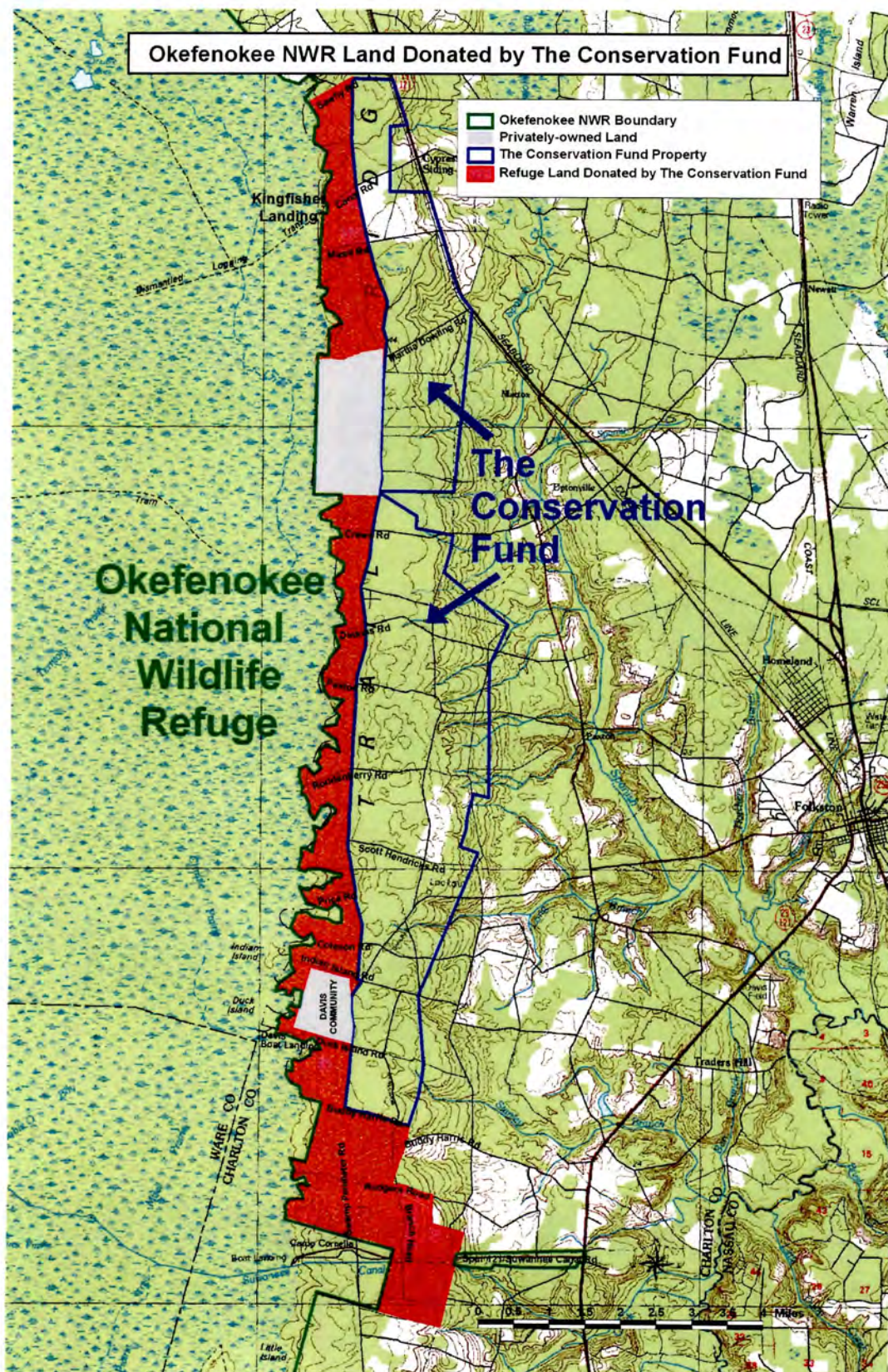


Figure 15. The Conservation Fund donated approximately 6,782 acres to the refuge in 2005.

8.

PUBLIC EDUCATION AND RECREATION

8.a. PROVIDE VISITOR SERVICES

Visitor Service Highlights

2005 saw the completion of the “Mizell Prairie Environmental Education Teaching Site” project that was made possible by the Southern Company and National Fish and Wildlife Foundation’s “*Power of Flight*” Grant. The overlook platform begun in 2004, was completed in 2005, and two new interpretive wayside panels were installed along the Cane Pole Trail.

The initial draft of the **Visitor Services Management Plan** which contains the various Public Use step-down plans has been completed. This draft is being reviewed and revised by staff before submission to management for final review.

Rangers Eckberg and Gentry exchanged major duties this year. Eckberg coordinated on-site special events and Gentry coordinated on-site Interpretive Programs and kiosk design. This form of cross-program exchange will allow each employee to gain experience and training in all aspects of Visitor Services.

A quarterly, on-site Blood Drive was coordinated and implemented between the refuge and the Florida/Georgia Blood Alliance (FGBA). The traveling Blood Mobile visited the refuge on three occasions in 2005 (Figure 16). The blood drive has been well-received by staff, volunteers, concession, and the local community.



Figure 16. The blood mobile stayed busy with staff, volunteers, AmeriCorps, and local donors during the December blood drive.

Visitor Use Statistics

Visitors to Okefenokee NWR came from all 50 states and over 35 countries.

Table 17. Visitation by entrance from 2001-2005.

Entrance	2005	2004	2003	2002	2001
East	137,798	141,614	116,107	111,439	113,463
West	194,358	159,787	193,205	147,312	164,430
North	54,067	58,631	60,347	61,019	71,543
Total	386,223	360,032	369,659	319,770	349,436

Table 18. Day-use for 2005.

Trail	Number of Visits
Homestead Trail	2,214
Deerstand Trail	3,795
Boardwalk ("Swamp Walk")	22,403
Upland Discovery Trail	4,743
Canal Diggers Trail	3,795
Swamp Island Drive (auto tour)	91,503
Ridley Island Trail	4,094
Phernetton, Long Leaf Pine Trail	3,795

Table 19. Visits to Interpretive Exhibits for 2004-2005.

	2005	2004
Richard S. Bolt Visitor Center	33,3334	35,440
Chesser Island Homestead	44,620	23,402

Public Use Facility Improvements

Refuge volunteers and AmeriCorps help trim boat, canoe, and hiking trails. Maul Hammock, an existing overnight platform, was rebuilt.

Floyds Cabin had extensive work including replacing floor sills, rotten rafters, and broken windows; rebuilding front and back porches; and washing cypress shingles to remove algae, mold and mildew (Figure 17). Floyds Cabin is listed on the Register of Historical Places and is an overnight stop for wilderness canoeist (Figure 18).

Five new interpretive panels and a kiosk were built and erected. Three kiosks were placed on the Longleaf Pine Trail and two were placed on Mizell Prairie Environmental Education Trail.

Improvements were made at the Chesser Island Homestead. The inner cypress fence was rebuilt, and a new chicken coop was made using the left-over cypress wood.

In August, the covered interpretive kiosk at Kingfisher Landing was destroyed when it was struck by a truck. Refuge employee Everette Sikes and Volunteer Terry Clark rebuilt the kiosk and were able to salvage the metal roof from the original kiosk for use in the new structure.



Figure 17. Volunteer Terry Clark assisted with major repairs on the Floyds Island Cabin.



Figure 18. Floyds Island Cabin after restoration work.

Policy

Entrance Fees

Entrance fees are collected by the Stephen C. Foster State Park (SFSP) staff at the West Entrance, and the concessionaire, Okefenokee Adventures (OA) at the East Entrance. 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. Guides must attend a one-day Refuge Guide training and a refresher every three years. In 2005, permits were issued to four Overnight Refuge Guides and eight 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 2005 provided favorable conditions for conducting trail maintenance on Wilderness Canoe Trails. Ranger Russell Barber led several work groups comprised of AmeriCorps, volunteers, and maintenance staff from SFSP. Barber and his crew cleared approximately 50 miles along the Orange, Red, and Green Trails. Mud Lake going to Okefenokee Swamp Park was opened after being closed for several years. Their work made it possible to get the mechanized trailcutter into locations which otherwise would have been inaccessible.

Interpretation

Refuge staff provided several programs and orientations for Elderhostel groups, Boy Scouts, Cub Scouts, church groups, primary and secondary school groups, and college classes. Refuge staff and volunteers spent time roving on hiking trails, conducting bird hikes, presenting local craft workshops, creating temporary special exhibits for events and the Visitor Center, giving public

programs about wildlife, and providing cultural interpretation at the Chesser Island Homestead. New interpretive programs were developed and are currently being presented to the public.

Evening Owl Prowls were presented to visitors by refuge staff and volunteers. Owl Prowls are currently held the second Saturday of each month beginning in November and ending in May. The program is currently under revision and will be known as Nocturnal Nature in 2006.

A new cultural program demonstrating the process of making cane syrup was developed and presented by Ranger Sallie Gentry and Chesser descendant/volunteer Sheila Carter at the Chesser Island Homestead. Visitors were able to cut cane from the Homestead garden, grind it, and sample the fresh-squeezed juice.



Figure 19. AmeriCorps member assists a young visitor push a sugar cane stalk through the grinder at the Chesser Island Homestead.

Volunteers were given a formal orientation to the Okefenokee NWR and interpretive basic training in the fall.

Environmental Education

Planning and Scheduling

Revisions were made to the draft *Environmental Education* section of the draft Visitor Services Management Plan. This plan presents the proposed direction for the expansion and enhancement of the Refuge's Environmental Education Program.

A new Environmental Education Program section was added to the revised refuge website in spring 2005. This section contains information about on-site Environmental Education (EE) activities and programs, which are available for school groups and the general public. It also contains the forms for requesting a fee waiver, and student activity sheets for both the visitor center and homestead, all of which can be downloaded by the public.

A new *Junior Refuge Manager Activity Guide* was made available this year for children ages 7 to 12 visiting the refuge with their families. It contains fun science, math, history, reading, and writing activities the children complete as they explore the east side of the refuge. The guide explores the natural and cultural history of the refuge and the different jobs staff members do to protect refuge resources.

Programs

New curriculum-based programs that meet the new *Georgia Performance Standards* and the State of Florida's *Sunshine State Standards* were presented this year to students from grades kindergarten to fifth. Additional specialized programs were offered to students from kindergarten to college. Visitor Services staff continue to work with Okefenokee Adventures Inc., Okefenokee Education and Research Center, and other organizations in planning and implementing quality environmental and cultural education programs.

Table 20. Environmental Education conducted by refuge staff CY 2005.

Visitor Type	Number of Participants*	Activity Hours (x 4)+
Student	1,644	6,576
Teachers and Chaperones	362	1,448

* Actual number of participants in an EE Program

+ Average number of hours participants spent at refuge in an EE Program and other activities.

Many school groups took advantage of these opportunities, with the total number of students participating in an EE program up 29% from CY2004 (Figure 20).



Figure 20. Volunteer Don Berryhill instructing students from St. Marys Elementary School about wetlands.

Interns

Melissa Lackey, a student from Ohio North University, interned at the refuge from May to August 2005. She assisted with environmental education and interpretive programs, including conducting tours of the Chesser Island Homestead. She also assisted with the Junior Ranger Summer Day Camp.

Leah Crouse, a student from Ohio North University, is interning at the refuge from November 2005 to February 2006. She is assisting with environmental education and interpretive programs.

Junior Ranger Summer Day Camp

Children ranging in ages from 8 through 12 descended on the refuge in June for the annual Summer Camp. Refuge staff and volunteers participated in programs that included reptiles, a swamp trip, animal tracking and nature hike, and mapping exercises. They stepped back in time with a Chesser Island Homestead tour, tried butter churning, and played old-time games. They discovered items from the past in the Chesser Island sand using techniques that archeologists use (Figure 21). Staff biologists taught them how the refuge protects endangered species. The

children waited in anticipation for the refuge wildland fire engine to arrive, hoping to get caught downwind of the cool fire hose spray. They enjoyed craft projects, decorating back packs, and working in their nature journals. Their passage into Junior Refuge Ranger status was marked with certificates, Junior Ranger t-shirts, cake, and other refreshments.



Figure 21. Participants in the Jr. Ranger Summer Camp “dig” this part of the archeology exercise.

Environmental Education Classroom

Planning continued this year on the design of a new Environmental Education Classroom to be built at the Suwannee Canal Recreation Area near the current visitor center.

Student/Teacher Training

On March 9, 2005, thirteen graduate students and two instructors from Virginia Tech University visited the refuge to experience an overnight wilderness canoe trip and to participate in a special program that examines the fundamentals of refuge management and the role of wilderness and wilderness users in day to day decision making. The program generated interest, concern, and excellent class participation. The instructors commented very favorably on the presentation and requested the same for another group in 2006.

On May 6, 2005, twenty-four students from University of Georgia Recreation and Leisure Studies Department visited the refuge to do research on Visitor Services and recreational facilities. A special program about refuge Visitor Services was presented and the students took a tour of refuge facilities.

Other Training

Leave No Trace

On October 22nd, Traveling Trainers Marcia and Gabe Williamson and refuge staff 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.

On-site Special Events

Wings Over the Swamp

The year kicked off with Okefenokee NWR's *Wings over the Swamp* celebration on February 12th. This special event celebrated birds and butterflies with a morning birders boat tour, bird and butterfly crafts and activities (Figure 22), a special movie "A Home for Pearl", and a guided bird walk. Visitors also enjoyed seeing captive birds displayed by *Sanctuary on the Sapelo*, butterflies brought by *Greathouse Butterflies*, a special sunset boat tour, and an evening Owl Prowl. Approximately 230 people participated, a substantial increase from 2004.



Figure 22. AmeriCorps members helping with bird and butterfly crafts.

National Wildlife Week/Earth Day

This year's theme was "At Okefenokee, Every Day is Earth Day". The celebration kicked off with the Art Contest in March. A total of 46 students from area schools and home-schools submitted artwork depicting the wildlife and wonders of Okefenokee. Students whose artwork was judged to be one of the best three for their grade received ribbons and other prizes, and every student received a certificate of appreciation. This year's Grand Prize winner was Christin Spurlock, a 5th grader from Folkston Elementary School, whose artwork was reproduced on free t-shirts that were given away during the bike tour (Figure 23).



Figure 23. Winning T-shirt artwork by Christine Spurlock.

All entries were posted at Charlton County Public Library from March 29th – April 18th, and the top three entries for each grade were posted at McDonald's in Folkston during the week of Earth Day and National Wildlife Week April 18th – April 25th. The art contest was sponsored by Okefenokee Wildlife League, Kiwanis of Folkston, and McDonalds of Folkston.

On Saturday, April 16th, the celebration continued with a litter pick-up by almost 50 volunteers and refuge staff (Figure 24). The Georgia Department of Transportation Adopt-a-Highway Litter Pickup Program provided trash bags and gloves for the event, in which approximately 3,225 pounds of litter was picked up in two hours along Georgia Highway 121/23.



Figure 24. The Earth Day Litter Pick-up Crew.

Over 300 people participated in the “Discover Okefenokee” Bicycle Tour. This annual event promotes alternative travel methods and refuge management strategies including biology, forestry/fire, public use, cultural preservation, and animal and plant diversity. Participants received a free t-shirt. New exhibits at this year’s event included a Leave No Trace campsite, a Georgia Forestry Wildfire exhibit, and Okefenokee habitat crafts (Figure 25). *Sanctuary on Sapelo* provided a live bird demonstration. Approximately 389 visitors participated, including 100 bicyclists, almost double in total participation and bicyclists from 2004. Over 50 staff members and volunteers made this event a great success. Everyone had a lot of fun and helped demonstrate what makes Okefenokee special.



Figure 25. Biologist Sara Aicher and Volunteer Sally Webb help children with a habitat craft.

International Migratory Bird Day

On May 14th, visitors to the refuge learned about the importance of protecting migratory birds with a birders boat tour and a beginner's bird walk in which 24 people participated! Volunteers helped 84 kids and adults make bird anti-collision ornaments out of recycled CD's, measure their "wingspans", and discover how birds feed with different-shaped beaks (Figure 26). A special exhibit showcasing International Migratory Bird Day (IMBD) posters from the past ten years was displayed, and visitors received a free 2005 IMBD poster that promoted this years theme, "Collisions: Clear the Way for Birds". Over 200 visitors enjoyed the celebration.



Figure 26. Volunteers Theresa and Jennifer Hogan demonstrate how to make bird anti-collision ornaments.

National Fishing Week

Refuge staff have developed and annually presented a very popular National Fishing Week program at Banks Lake National Wildlife Refuge near Lakeland, Georgia. Refer to Banks Lake Narrative, section 8.a. for a summary of this Special Event.

National Public Lands Day/Paddle for Wilderness

On Saturday, September 24th, Okefenokee National Wildlife Refuge (NWR) celebrated National Public Lands Day from 8:00 a.m. to 5:30 p.m. The event began at the historic Chesser Island Homestead, where 23 volunteers participated in a service project (Figure 27). This was in preparation for the annual Chesser Island Homestead Open House during Okefenokee Festival in October. Accomplishments included cleaning the historic house, trimming vegetation along the Homestead trail, raking and hoeing the yard, and splitting wood. A traditional Martin birdhouse made out of gourds was also installed. Equipment, gloves, cold drinks, and a cookout lunch at the Homestead were provided to participants.



Figure 27. Volunteers working at the homestead.

At 1:30 p.m., the event continued with a four-hour guided *Paddle for Wilderness* tour through the Okefenokee National Wilderness Area to the Cedar Hammock Shelter. At the shelter, a program about *Leave No Trace* principles and the Okefenokee Wilderness was presented. The *Leave No Trace Center for Outdoor Ethics* provided energy bars, Front-country ethics hangtags, and *Leave No Trace* brochures for participants.

For several weeks, visitors could view a table top display about National Public Lands Day and the principles of *Leave No Trace* at the visitor center. Brochures about public lands and activity sheets for children about America's National Public Lands were provided. Sponsors for the event included Okefenokee Adventures, Okefenokee Wildlife League, and the Leave No Trace Center for Outdoor Ethics.

National Wildlife Refuge Week/Okefenokee Festival

The Okefenokee Festival was held on Saturday, October 9. This event is a celebration the refuge and the City of Folkston holds each year to celebrate the natural and cultural heritage of the Okefenokee Region. The refuge portion of the event took place at the Chesser Island Homestead, a restored "swamper" homesite, where participants had a chance to learn about the ways of the old swamp culture. Approximately 650 visitors enjoyed the activities at the homestead, and over 50 volunteers helped out with the event. Visitors also encountered mules

and chickens, and sampled boiled peanuts, soup, biscuits, and other items cooked on a wood-burning stove. Volunteers demonstrated how settlers made soap, brooms, butter, quilts, baskets, and other everyday items. Visitors also learned how settlers washed clothes, smoked meat, collected turpentine, and survived in and around the swamp. The sounds of bluegrass music (Figure 28), stories, and four-note singing were enjoyed along with traditional games of musical chairs, wheelbarrow races, and more. Okefenokee Adventures also offered a sunset boat tour in the Okefenokee Swamp for an additional charge.



Figure 28. The Shade Tree Pickers provided musical entertainment at Okefenokee Festival.

In nearby Folkston, the town held a parade and had musical acts, food vendors, and arts and crafts booths. Refuge staff and volunteers constructed a parade float portraying this year's parade theme, "Life in the Okefenokee" (Figure 29). The float won the parade award for "Most Creative." Refuge staff along with volunteers also staffed a Refuge exhibit booth in Folkston. An estimated 5,000 to 6,000 people attended the parade and craft fair (Figure 30).



Figure 29. Okefenokee National Wildlife Refuge's Parade Float.



Figure 30. Volunteer Frieda Powers explains to a visitor all there is to do at Okefenokee NWR.

Christmas on Chesser Island Program

Many local people and visitors from as far away as Savannah came to the refuge on December 10th to enjoy the holiday festivities on Chesser Island. The event began at 6:00 p.m. with hayrides along Swamp Island Drive and a holiday crafts booth at the homestead parking area. Children also had their picture taken with Santa Claus, and admired a Christmas tree that had been decorated with food for wildlife. This tree was later displayed at Okefenokee Education and Research Center as part of their Christmas tree contest. The historic Chesser Homestead was open for tours for visitors to enjoy its traditional holiday decorations. Luminaries provided a soft glow that illuminated both the yard and pathways leading to and from the parking area. At 7:00 p.m., a special swamp version of the classic holiday tale "*'Twas the Night before Christmas*" was presented by refuge staff and volunteers. The Roddenberry Sisters, a Charlton County favorite, then performed traditional holiday songs. The public was invited to join in singing as they enjoyed free refreshments of homemade cookies, hot chocolate, and cider around a bonfire. The hayrides then resumed from 7:30 to 8:15 p.m. More than 300 visitors enjoyed the holiday festivities and 25 volunteers helped with the event.

Hunting

Retired Georgia DNR Ranger Mike Brooks offered two sessions of the Georgia Hunter Education course at the refuge. A traditional course was offered on August 6th and 7th. It was cancelled due to low enrollment. A second class, consisting of pre-class work done on a Compact Disc, was held on August 27th at the refuge administrative office. Sixteen people completed this course on hunting knowledge, safety, and ethics (Figure 31).



Figure 31. Retired GA DNR hunter safety educator Mike Brooks hands a happy class graduate his hunting license.

Refer to Section 1.a. for information on the east entrance deer hunt conducted on October 28 and 29.

The Pocket was opened for archery season for the fourth year from September 11th to October 21st. Refuge hunters were required to follow the 2005/2006 Georgia state regulations. There were a total of 362 hunter visits, which was down from 625 hunter visits in 2004. Fifteen deer, five does and ten bucks, were harvested.

The Cowhouse Island section of the refuge was open to deer hunting for the fifth year and administered by GA DNR in conjunction with hunts conducted on DMSF. Refuge hunters were required to follow the 2005/2006 Georgia state regulation guide pertaining to the DMSF. A new sign-in kiosk, including sign-in sheets and updated Cowhouse Island maps, was installed in cooperation with GA DNR along the north boundary. One hundred three hunts were recorded for the fall season. Two does and one hog have been reported during the Big Game hunt season. Small game hunting for rabbit, squirrel, and quail was open on Cowhouse in accordance with state seasons and regulations. To date, twenty-two squirrels, taken in December, have been recorded for the ongoing small game season (Figure 32).



Figure 32. A new sign-in kiosk for hunters was installed at Cowhouse Island.

Fishing

Table 21. On-refuge anglers.

Refuge Access	2005	2004	2003
East Entrance	1,639	1,695	1,277
West Entrance	2,982	2,626	2,996
Kingfisher Landing	278	367	996
Suwannee River Sill	1,132	911	1,373
TOTAL	6,031	5,599	6,642

Camping

Table 22 shows Tent and RV camping and cabin rentals at the West Entrance in Stephen Foster State Park. (See Table 22)

Table 22. Campers at Stephen C. Foster State Park.

Camp Site	Number of Visits		
	2005	2004	2003
Tent/RV Campers	26,814	19,430	9,557
Cabin Users	18,490	8,060	3,578
Total	45,304	27,490	13,135

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.

Refuge Management approved a non-competitive five year extension of the East Entrance concession contract for Okefenokee Adventures Inc., beginning in August 2005 and running to August 31, 2010. 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

Refer to Section 6.h. Land Acquisition.

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

On December 10, 2005, a ribbon cutting ceremony was held to commemorate the official opening of the Okefenokee Environmental Education Teaching Site on the Mizell Prairie and the improved Cane Pole Trail. The ceremony marked the completion of the Mizell Prairie Environmental Education Platform project, which was made possible by a "*Power of Flight*" Grant, sponsored by The Southern Company and the National Fish and Wildlife Foundation.

Banrock Station Winery/The Conservation Fund

Two temporary interpretive wayside panels were installed along the Cane Pole Trail as part of the Mizell Prairie Environmental Education Platform project. The panels, one highlighting the

ecology of the Suwannee Canal and the other discussing the importance of wetland prairies in the Okefenokee Swamp, were paid for in part through a wetlands conservation and education grant awarded the Okefenokee NWR by Banrock Station Wines and The Conservation Fund. The temporary panels were produced and sent to the Refuge to be used until the permanent panels are completed, which is expected to take place in January 2006.

Georgia Wildlife Federation

The refuge continued its long standing relationship with the Georgia Wildlife Federation (GWF), primarily utilizing their facilities and their conservation contacts to facilitate a Public Meeting to discuss the Draft Comprehensive Conservation Plan. Numerous State and National Conservation groups attended and commented very favorably on our proposed plan.

The Federation also played a key role in the donation of 6,782 acres of upland forest to the Okefenokee NWR. TCF and IP legally conveyed the development right for that property and another 9,000 adjoining acres to the GWF to be retired.

GWF held its annual Conservation Legacy Awards Banquet on May 13, and among the year's award recipients were Okefenokee NWR Manager Skippy Reeves, and Chip and Joy Campbell, owners of Okefenokee Adventures, Inc. Skippy Reeves was recognized with the Federation's *Wildlife Conservationist of the Year Award* for his innovative management, expert team-building efforts, and his superior communication skills. Chip and Joy Campbell received the *Conservation Educators of the Year* award for their work in conservation education at the Okefenokee NWR.

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 Okefenokee Festival, RailWatch, Trick-or-Treat on Main Street, and a Hometown Christmas in Folkston.

Other Outreach Initiatives

On May 6, 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.

Supervisory Refuge Ranger Burkhart serves as a non-voting member on the Okefenokee Education and Research Center Board of Directors.

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 Burkhardt 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 2005. Representatives of the St. Johns River Water Management District, St. Marys River Management Committee, and Suwannee River Water Management District met during 2004 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 Refuge Ranger Burkhardt 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

Refuge staff released 29 press releases in 2005, which covered a variety of topics ranging from public notices to special events. In addition, refuge staff contributed a feature article about former Refuge Manager Skippy Reeves, which was printed in the July/August 2005 (Vol.2, No.4) edition of *Refuge Update* magazine.

The *Blue Goose Corner* continued its second year of outreach. This monthly series, released to all the surrounding counties print media sources, highlights the refuge, FWS policies, and other interesting aspects about the role and responsibilities of federal conservation organizations. Topics covered in 2005 include:

- Make a Difference at Okefenokee NWR - Volunteering (January)
- Running the Robin Gauntlet (February)
- Why Can't I Hunt Easter Eggs at the Okefenokee NWR - Compatibility (March)
- Stay and See Georgia's National Wildlife Refuges (April)
- Okefenokee – A Memoir of a Mysterious Place (May)
- A Proven Leader Steps Down (June)
- Saving the Past for Future Generations (July)

- Fall at Okefenokee Provides Many Opportunities (August)
- Celebrate Your National Public Lands this September 24th (September)
- Watch Out! Little Green Monsters Lurk in the Okefenokee (October)
- Fall Spectacle: Winged Migration (November)
- Gifts We Give Ourselves (December)

Refuge staff took an active part in contributing short news articles to the Southeast Region's electronic newspaper E-Grits. Refuge staff contributed sixteen articles to *E-Grits*, which covered a variety of topics ranging from special events to commercial film activities on the refuge.

In addition, a film permit was issued to *Natural History New Zealand* to film a special Okefenokee NWR installment of "Buggin' with Ruud," which aired in September (Figure 33), and to NBC Dateline to film scenes for a special documentary on "The Hunt for Flight 19," which aired in November.



Figure 33. "Buggin' with Ruud" film crew.

Web Page

The refuge web page was updated. 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

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 7-9. Savannah NWR supported the event along with other refuge partners.

CoastFest

CoastFest was held on October 1 at the Brunswick Department of Natural Resources (DNR) office and sponsored by Georgia DNR. The refuge co-hosted a FWS booth with the Brunswick Ecological Service Office. Approximately 7,000 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 (Figure 34).



Figure 34. Ranger Sallie Gentry watches as young visitors try their hand at the Swamp Loop Game.

9.

PLANNING AND ADMINISTRATION

9.a. COMPREHENSIVE MANAGEMENT PLANNING

A draft of the Comprehensive Conservation Plan was available for public review between August 1 and September 16, 2005. Three public meetings (Waycross, Folkston, and Fargo) were held in August to explain the content of the CCP and provide an opportunity for individuals to present verbal comments. Only 17 comments were received throughout the public comment period. At year's end, changes and corrections were being made for final printing. The step-down plans require additional work and will not be printed with the final CCP as anticipated.

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 23). Table 24 lists refuge employees and current positions. Staff photos are included in Figure 35.

Table 23. A five-year comparison of Okefenokee's staffing pattern.

Year	Full-time	Career-Seasonal Firefighters	Temporary	Firefighters
FY 2005	26	5 (3.55 FTE)	1	0
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

Table 24. Okefenokee Refuge Staff for 2005.

Name	Title
*M. Skippy Reeves (EOD 02/21/93)	Refuge Manager (GS 14, PFT)
George M. Constantino (EOD 06/26/05)	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)	Wildlife Biologist (GS 12, PFT)
Dean E. Easton (EOD 03/09/03)	Wildlife Biologist (GS 11, 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)
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 7, 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)
Heather A. Lee (EOD 11/13/05)	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)
Christopher M. Wright (EOD 11/13/05)	Forestry Technician (GS 5, PPT)
Robert R. Vernachio	Lead Forestry Technician (GS 6, 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)

* Reeves retired, June 30, 2005.

* Welch transferred to Harris Neck NWR, June 6, 2005.

* Beacom transferred to Prescott National Forest, May 1, 2005.

* Laber transferred to Texas Midcoast Refuges Complex, October 16, 2005.

* Barber termination of appointment, December 9, 2005.



Figure 35. First Row (L-R): S. Gentry, J. Drury, G. Constantino, D. Campbell, J. Burkhart.
Second Row: R. Forcine, G. Gooch, H. Lee.
Third Row: E. Sikes, B. Derouin, R. Barber, S. Aicher.
Fourth Row: W. Sikes, D. Easton, J. Shelton, C. Wright, B. Eckberg, D. Willis, R. Vernachio,
L. Crouse, C. Bryant, F. Wetzel, T. Gooch, S. Davis, R. Chesser, H. McCullough, R. Langford,
S. Gillette, S. Jones.



Figure 36. Refuge Manager Skippy Reeves retired on June 30, 2005.

Personnel Changes

May 1, 2005, Forestry Technician Raymond E. Beacom was terminated. He accepted a position with the Prescott National Forest in Crown King, AZ.

May 22, 2005, Student Trainee (SCEP) Jared Allsbrooks returned to duty for the summer.

May 31, 2005, Ima Jean Knowles was hired on as a 30-day emergency hire Laborer/YCC Adult Leader to work with YCC students on the west side in Fargo GA.

Effective June 6, 2005, Engineering Equipment Operator Stacey A. Welch accepted a full-time Law Enforcement position at Harris Neck NWR.

June 12, 2005, Refuge Ranger Blaine D. Eckberg was promoted to Full Performance Level (FPL); GS-7.

Effective June 26, 2005, George M. Constantino was selected as the new Refuge Manager.

Refuge Manager M. Skippy Reeves retired June 30, 2005.

Laborer/YCC Adult Leader Ima Jean Knowles' position extended an additional 30 days, effective July 1, 2005.

August 17, 2005, Student Trainee (SCEP) Jared R. Allsbrooks returned to school.

Effective October 16, 2005, Daniel J. Laber transferred to Texas Midcoast Complex in Angleton, TX.

November 13, 2005, Wildlife Biologist Dean E. Easton was promoted to FPL: GS-11.

James R. Barber, Temporary Refuge Ranger (1040 appointment) was terminated effective December 13, 2005.

9.c. TRAINING AND TRAVEL

Employees attended several off-station training courses in 2005 (Table 25). Table 26 includes other travel performed by refuge employees.

Table 25. Training attended by permanent personnel in 2005.

James A. Burkhart	GA Nature Based Tourism Conference	Madison GA	Jan 18 - 19
Blaine D. Eckberg	Grant Writing for Conservation	NCTC Shepherdstown WV	Jan 19 - 21
Blaine D. Eckberg	Interpretive Writing & the Process of Interpretation	NCTC Shepherdstown WV	Jan 24 - 28
James A. Burkhart Shawn G. Gillette Sallie D. Gentry	Managing Visitor Use in Wilderness	Atlanta GA	Jan 31 - Feb 4
Gracie A. Gooch	Friends Conference	Washington DC	Feb 4 - 8
Stiner Jones Willie E. Sikes Tony Gooch Rockwell M. Chesser Cory R. Bryant Stacey A. Welch	Wage Grade Workshop	Memphis TN	Feb 6 - 10
Frederick E. Wetzal James R. Langford	FMO & Rx Fire Workshop	Tallahassee FL	Feb 7 - 10

James N. Shelton	Annual LE Refresher	Tallahassee FL	Feb 23 - Mar 4
W. Shaw Davis Shawn G. Gillette	Annual LE Refresher	Tallahassee FL	Feb 27 - Mar 4
James N. Shelton	ROBS Instructor	NCTC Shepherdstown WV	Mar 21 - 25
Frederick E. Wetzel	S-580 Advanced Fire Use Applications Instructor	Tucson AZ	Mar 23 - 25
Dartha P. Campbell Beverly A. Derouin	Annual Southern Area Incident Business Management Workshop	Nashville TN	Apr 4 - 8
Stacey A. Welch	Annual LE Refresher	NCTC Shepherdstown WV	Apr 17 - 22
Tony Gooch	SAMMS	NCTC Shepherdstown WV	Apr 17 - 22
Daniel J. Laber	Refuge Manager Academy	NCTC Shepherdstown WV	Apr 24 - May 13
James R. Langford Reggie Forcine	Rx 410 Smoke Management	Kinston NC	Jun 6 - 10
Reggie Forcine	S-271 Helicopter Crew Member & Plastic Sphere Dispenser Operator Instructor	Thomasville GA	Jul 12 - 16
James R. Langford	S-230 Taskforce Leader	Brooksville FL	Jul 18 - 22
James N. Shelton	ROBS Instructor	NCTC Shepherdstown WV	Jul 18 - 22
Sallie D. Gentry Gracie A. Gooch	Volunteer Recruitment & Management Course	NCTC Shepherdstown WV	Aug 8 - 12
Howard E. McCullough	Status Trends & Future of South's Forest & Agriculture Biomass	Athens GA	Aug 28 - 31
Dean E. Easton	Seamless Network of Parks Workshop	McRae GA	Aug 24 - 26

James R. Langford	GA Rx Burn Certification	Dahlonega GA	Sep 21 - 23
James R. Langford	S-330 Taskforce/Strike Team Leader	Brooksville FL	Oct 10 - 13
W. Shaw Davis	Scenic Byways Conference	Cleveland OH	Oct 15 - 20
Willie E. Sikes	GA Rural Water Conference	Helen GA	Oct 23 - 26
Howard E. McCullough	Efficient Inventories and Cruising for Weights	Athens GA	Oct 31 - Nov 3
Rockwell M. Chesser	Heavy Equipment Operator Instructor	Lake Woodruff NWR DeLand FL	Nov 14 - 18
James R. Langford	R4 Rx Burn Workshop & EBAM	McBee SC	Dec 5 - 7
William E. Sikes Heather A. Lee Shawn G. Gillette Blaine D. Eckberg	Basic Aviation Safety	Titusville FL	Dec 15

Table 26. Travel by permanent personnel in 2005

Daniel J. Laber	Atlantic Flyway Wingbee	Laurel MD	Jan 23 - 29
Stacey A. Welch	Harris Neck NWR LE Detail	Savannah GA	Jan 27 - 29
M. Skippy Reeves W. Shaw Davis	DNR Hunt Meeting	Macon GA	Feb 8
M. Skippy Reeves W. Shaw Davis	Wildlife Federation Meeting	Covington GA	Feb 9
Dean E. Easton Howard E. McCullough	Detail to St. Marks NWR to show techs RCW insert techniques	St. Marks FL	Mar 7 - 9
Frederick E. Wetzel	Washington DC Detail	Washington DC	Mar 9 - 22
William E. Sikes Cory R. Bryant	Merritt Island Rx Burn Assist	Titusville FL	Mar 18 - 22

Raymond E. Beacom Daniel J. Laber	Merritt Island Rx Burn Assist	Titusville FL	Mar 25 - 26
James R. Langford	Fire Assist Vieques NWR	Vieques PR	Apr 2 - 17
Rockwell M. Chesser	Heavy Equipment Instructor Meeting	Greneda MS	Apr 11 - 15
Reggie Forcine	Fire Assist Vieques NWR	Vieques PR	Apr 14 - 29
W. Shaw Davis James N. Shelton	LE Assist	Savannah GA	Apr 15 - 16
M. Skippy Reeves	Finalize Retirement Paperwork	Atlanta GA	Apr 18 - 20
Shawn G. Gillette	2 nd Annual National Fish & Wildlife Foundation Meeting	Gulfport MS	Apr 20 - 21
Gracie A. Gooch M. Skippy Reeves	Bass President Federation Meeting	Orlando FL	Apr 28 - 29
W. Shaw Davis Stacey A. Welch	Ivory Billed Woodpecker LE Detail	Cache River NWR Augusta AR	May 4 - 11
M. Skippy Reeves	Accept GA Wildlife Federation Award	Mansfield GA	May 13 - 14
M. Skippy Reeves George M. Constantino	Meet with GA Forestry, Wildlife Federation, and GA DNR	Macon GA	May 22 - 23
Danny Jack Willis William E. Sikes	Merritt Island Rx Burn Assist	Titusville FL	May 23 - 25
Frederick E. Wetzel	Piedmont NWR Program Analysis	Macon GA	Jun 7 - 9
W. Shaw Davis	Manatee LE Detail	Jacksonville FL	Jun 9 - 12
Daniel J. Laber Rockwell M. Chesser James R. Barber	SAMMS Detail Regional Office	Atlanta GA	Jun 13 - 24
Frederick E. Wetzel	District 2 Fire Review Savannah Coastal & Santee NWR	Savannah GA Santee SC	Jun 21 - 24

George M. Constantino W. Shaw Davis Gracie A. Gooch	Director's Honor Awards Ceremony	Atlanta GA	Jul 12 - 13
Cory R. Bryant Douglas E. Nuss	Hurricane Dennis Assist St. Marks NWR	St. Marks FL	Jul 12 - 24
Richard B. Boatright	Support Dispatch Detail Florida Interagency Coordination Center	Tallahassee FL	Jul 15 - 25
George M. Constantino	LE Coordination Meeting	Cape Romain SC	Jul 19 - 21
Reggie Forcine Danny Jack Willis William E. Sikes	Western Fire Assist	San Carlos AZ	Jul 20 - Aug 1
Judy L. Drury	Support Dispatch Fire Assist	Rapid City SD	Jul 24 - Aug 8
Jared R. Allsbrooks	LE Detail Regional Office	Atlanta GA	Jul 25 - 29
Jared R. Allsbrooks	LE Detail	Clermont FL	Jul 31 - Aug 6
George M. Constantino	Meet with GA Conservation Fund & GA Wildlife Federation	Atlanta GA	Aug 3 - 4
Richard B. Boatright	Support Dispatch Detail Southern Area Coordination Center	Atlanta GA	Aug 9 - 24
Danny Jack Willis	Western Fire Assist	St. Regis MT	Aug 13 - 26
William E. Sikes	Western Fire Assist	Grangeville ID	Aug 13 - 28
George M. Constantino W. Shaw Davis	Town Hall Meeting	Mt. Pleasant SC	Aug 16 - 18
James R. Langford	Western Fire Assist	Grangeville ID	Aug 15 - 26
Beverly A. Derouin	Western Fire Assist	Riggins ID	Aug 18 - Sep 1

James R. Langford Danny Jack Willis Douglas E. Nuss Rockwell M. Chesser Cory R. Bryant	Hurricane Katrina Assist	Gautier MS	Aug 30 - Sep 14
Reggie Forcine	Hurricane Katrina Assist	Gautier MS	Aug 31 - Sep 14
Richard B. Boatright	Support Dispatch Florida Interagency Coordination Center Hurricane Assist	Tallahassee FL	Sep 1 - 15
Frederick E. Wetzel	Western Fire Assist	Idaho Falls ID	Sep 4 - 12
James A. Burkhart	Okefenokee Educational Research Center & UGA Meeting	Athens GA	Sep 14 - 15
William E. Sikes	Wildfire Assist	Iowa LA	Sep 14 - 22
W. Shaw Davis Shawn G. Gillette	Hurricane Katrina LE Assist	LaCombe LA	Sep 16 - 28
Douglas E. Nuss	Hurricane Katrina & Rita	LaCombe LA & Sulphur LA	Sep 20 - Oct 8
Danny Jack Willis	Hurricane Katrina Assist	Pascagoula MS	Sep 30 - Oct 17
Frederick E. Wetzel James R. Langford Howard E. McCullough Reggie Forcine Beverly A. Derouin	Hurricane Rita Assist	Sulphur LA	Sep 24 - Oct 8
Richard B. Boatright	Support Dispatch Hurricane Rita Assist Florida Interagency Coordination Center	Tallahassee FL	Sep 26 - Oct 11
Dartha P. Campbell Judy L. Drury	Hurricane Wilma Assist	Boynton Beach FL	Oct 24 - 30
Frederick E. Wetzel	District FMO Meeting	Decatur GA	Nov 1 - 2

W. Shaw Davis Sara B. Aicher	Environmental Education & Concession Building Design Meeting	Atlanta GA	Nov 17 - 18
George M. Constantino	Regional Office Visit	Atlanta GA	Nov 17 - 18
Reggie Forcine	Recon for Tornado Damage Wakulla District	Appalachicola NF Tallahassee FL	Dec 6 - 7
Frederick E. Wetzel	Fire Program Review Florida Panther NWR	Naples FL	Dec 12 - 14

9.d. ENERGY

In 2005, refuge usage showed an increase in electricity and diesel but a decrease in gasoline. A comparison of refuge usage from 2003-2005 is included in Table 27.

Table 27. Energy usage in CY 2005.

	CY 2005	CY 2004	CY 2003
Electricity (kwh)	256,504	251,529	286,407
Gasoline (gal)	24,708	31,970	14,270
Diesel (gal)	15,672	10,655	12,038

9.e. FUNDING

Funds allocated in 2005 were consistent with trends observed in previous years. A comparison of funds allocated for 2001-2005 are included in Table 28.

Table 28. Refuge fund allocations from 2001-2005.

ACTIVITY	2005	2004	2003	2002	2001
1260	1383.1	1451.4	1270.4	1131.9	1213.7
6860	65.0	60.0	60.0	60.0	60.0
9131/9251	652.7	742.5	741.9	875.0	1081.2
9132	0.0	345.7	0.0	0.0	0.0
9263	217.3	236.5	180.0	99.3	99.3
9264	104.5	20.0	105.0	21.0	0.0
9265	31.0	23.6	0.0	0.0	0.0
1100	0.0	0.0	0.0	8.0	0.0
2111/2810/2821	1110.2	427.8	0.0	67.1	465.7
2960	0.0	0.0	0.0	0.0	5.4
2977	1178.4	0.0	0.0	0.0	0.0
8555	0.0	0.0	1.2	0.0	0.0
Federal Highway	0.0	0.0	0.0	435.0	70.0
TOTAL ALLOCATION	4742.2	3307.5	2358.5	2697.3	2995.3

- 2005 Includes MMS projects (113.5), YCC (25.6), Banks Lake hyacinth control (15.0), Congressional for concession facility including carryover (919.5), storm (1178.4)
- 2004 Includes MMS (240.0), YCC (25.1), contaminant (6.9), Banks Lake herbicide (3.5), Hurricane Isabel (24.8), SAMMS (60.0), Congressional for concession facility (427.8), helicopter contract (25.0), fire facility (345.7)
- 2003 Includes MMS projects (140.0), YCC (19.2), safety signs (1.2), helicopter contract (25.0)
- 2002 Includes MMS projects (135.0), YCC (19.2), visitor center and restroom renovations (67.1), helicopter contract (25.0), locker/shower facility (28.0), urban interface (Stephen C. Foster State Park (21.0), contaminant (8.0)
- 2001 Includes MMS projects (108.1), LE visitor/resource protection (79.0), trailcutter/dozer/trailer replacement (274.9), carryover funds from VC renovation (122.8), helicopter contract (50.0), locker/shower facility (178.6), Federal Highway/VC restroom renovation (143.4)

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, load securement, power tool safety, dangers of lights on Christmas trees, and heat related illnesses were discussed.

Permanent Employee Accidents

Willie E. Sikes – March 23, 2005

Sikes was replacing old boards on the boat dock at Okefenokee Adventures. He loaded the old boards into the back of a pickup truck and transported them to the pole building at Camp Cornelia. As he was unloading the boards a rusty nail punctured Sikes' left forearm. The area was red, swollen, and warm to the touch. Medical evaluation resulted in prescription antibiotics.

James N. Shelton – March 23, 2005

Shelton was preparing to depart NCTC for his home/permanent duty station. When he attempted to step off the back of the government pickup truck, his right foot caught the tailgate support cable causing him to fall to the pavement on his face, hands, and knees. He had abrasions and cuts on his forehead and nose. His left ring finger was smashed (black and blue). His right hand/wrist was sprained, swollen, and painful. He also bruised his knees. Medical evaluation resulted in light duty with no lifting over 10 pounds and no use of right hand until April 3, 2005. He was also provided a prescription for pain.

Dean E. Easton – June 21, 2005

Easton was traveling on the refuge's northwest forest compartment to conduct an early morning RCW survey. As he was entering property owned by Rayonier Corporation, an access gate was partially closed and at an angle Easton could not see in the dark. When he finally got close enough to the gate to notice it, he tried to swerve to avoid impact, but it was too late. The gate, which is 2" steel welded pipe, entered the front quarter panel on the passenger side and damaged the hydraulic line for the transmission. Easton was not injured in the mishap.

Stiner Jones – July 14, 2005

Jones stepped on a fire rake which sprung back and struck him on the right side of his face. The impact caused Jones to experience "floaters" in his right eye. Medical evaluation resulted in several return visits for re-examination.

James N. Shelton – September 1, 2005

During a search and rescue, Shelton was bitten three times by spiders; one to the left side of his neck, and two bites to the right elbow. Shelton received medical treatment at the Clinch County Hospital Emergency Room.

Howard E. McCullough Jr. – November 16, 2005

While marking timber in Compartment 1, McCullough began to notice an itching/burning sensation of his left jaw and neck. Pain became progressively worse with noticeable swelling of the left jaw. The sting was caused by a puss caterpillar found on his left shirt collar. McCullough chose not to seek medical treatment. He returned to work the next day. The swelling was gone and no itching or burning sensation remained.

Firefighter Accidents

Nothing to report.

Intern Accidents

Nothing to report.

Volunteer Accidents

Donald Ewing – January 6, 2005

Ewing grabbed a falling propane tank to keep it from hitting the cement. In doing so, he injured his right groin. Mr. Ewing went to the doctor. He was put on light duty and advised to begin taking prescription Ibuprofen for 21 days. A return follow-up visit for re-examination was completed, and Mr. Ewing was doing fine.

Gordon K. Truckle – October 26, 2005

While helping in the removal of the old platform at Maul Hammock, Truckle stepped from one platform to the next. His foot slipped from the platform, and he fell backwards into the water hitting a board. Truckle was transported to the Charlton County Memorial Hospital Emergency Room where x-rays were taken for possible rib fractures and other internal injuries. Medical evaluation showed no fractures. He suffered severe bruising and pulled muscles. Mr. Truckle was given pain medication and released.

AmeriCorps Accidents

Nothing to report.

Youth Conservation Corp Accidents

Nothing to report.

9.g. VOLUNTEERS

The volunteer program continues to grow at the refuge. The Volunteer Coordinator devoted more time to recruit volunteers and guide them on various refuge projects. In 2005, more than 200 volunteers contributed 18,629 hours, equivalent to more than eight full time employees. Volunteers have become integral to maintaining the refuge, assisting the biology and forestry staff, performing duties in Visitor Services, and undertaking various other tasks 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 Coordinator and Refuge Ranger Gracie Gooch and Refuge Manager Skippy Reeves presented "How to Motivate Volunteers" to more than forty Conservation Presidents of BASS in Orlando, FL, April 28-29.

Five volunteers participated in the scrub jay count at Merritt Island NWR, March 30-31.

Four volunteers enjoyed assisting Cumberland NS with their annual horse count, March 18-20.

Volunteer Recognition

The annual volunteer awards ceremony was held on June 7, 2005. The volunteers enjoyed dinner, which was immediately followed by the awards ceremony. Several volunteers received certificates and hour pins. Three volunteers, Debbie Todd, Edythe Williams, and Jack Webb received the *Take Pride in America Presidential Award* for volunteering over 4,000 hours (Figure 37).

Three Okefenokee NWR volunteers were presented with the Regional Director's Honor Award, November 16. Honorees were Jack and Sally Webb, and Dory Stauff (Figure 38).

Volunteers enjoyed several field trips throughout the year. They had the opportunity to visit all three entrances into the Okefenokee NWR to learn about the different ecosystems in the swamp. Quarterly sunset boat tours were offered, averaging over 30 volunteers each trip. The volunteers enjoyed a field trip to Gainesville, FL to visit Payne's Prairie, the Butterfly Garden, and the Natural History Museum. Twenty-one volunteers traveled to Okefenokee Swamp Park to see the Christmas Light Show, and over twenty volunteers traveled to Jacksonville, FL to see the "Christmas Parade of Lights" on the St. John River.



Figure 37. *Take Pride In America Presidential Award* recipients: Debbie Todd, Edythe Williams, Volunteer Coordinator Gracie Gooch, and Jack Webb.



Figure 38. Refuge Supervisor Area III, Pete Jerome presented Regional Director's Honor Awards to volunteers and GA Forestry Partner. Pictured left to right: Refuge Supervisor Area III Pete Jerome, Volunteers Sallie Webb, Jack Webb, Dory Stauff, GA Forestry District Ranger Frank Sorrells, and Refuge Manager George Constantino.

Interns

Gaia Meigs-Friend, Folkston, GA, February – June, 2005 (Biology)

Melissa Lackey, Ohio Northern University, Akron OH, May – August, 2005 (Public Use)

Leah Crouse, Ohio Northern University, Akron OH, November – February, 2005-2006 (Biology)

Projects accomplished include the following:

- Directed YCC members on maintenance projects.
- Assisted with annual events including National Wildlife Week, International Migratory Bird Day, and National Fishing Day.
- Aided with daily Visitor Center operations.
- Participated in interpretation program at Chesser Island Homestead.
- Assisted with Junior Ranger Camp.
- Assisted with red-cockaded woodpecker surveys, banding and cleaning nest boxes.
- Marked timber planted 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. Mud Lake wilderness boat trail was reopened after being closed for several years. The teams spent up to four days at a time in the swamp enduring harsh temperatures.

Youth Conservation Corps (YCC)

Okefenokee National Wildlife Refuge had a total of 32 applications for the 2005 YCC program. Three males and two females were selected to the Westside of the refuge. One of the Westside female employee's family moved, which forced her to resign her position. A male alternate was chosen as her replacement. One of the male employees from the Westside resigned. This resignation took place several weeks into the program and no alternate was hired. Three males and two females were selected to the Eastside of the refuge. Of the employees, two 18 year olds were appointed as YCC youth leaders for the Westside and Eastside work groups. An adult YCC leader was hired and stationed at the Westside entrance to supervise the YCC group and transport them to any work site that required travel off refuge property. The YCC conducted routine litter patrols 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 in the visitor center. Duties included work at the East and West entrances, Kingfisher Landing, Banks Lake NWR, and Okefenokee Education Research Center.

The YCC learned valuable lessons about work ethic, responsibility, and teamwork during their duty and gained knowledge about the refuge system. They were given educational and/or working field trips to the North, South, and East entrances to Okefenokee NWR, as well as Banks Lake NWR.

The YCC attended two of our monthly Staff/Safety Meetings to learn about safety in the workplace and the safe operation of tools and machinery. There were no accidents or injuries during the work period with the exception of minor scrapes, cuts, or bruises that occurred during routine operations. None of the minor injuries required medical attention or any other care than ointment and band-aids.

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. These reviews ensure the following:

- 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 employees' needs in their particular fields 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. During 2005, we continued to gather information to upgrade the 64-K line to a T1 line. On December 13, the request for an upgrade to a T1 was sent to the Branch of Communication Technology (BCT). However, the administrative office was only allowed to upgrade to a fractional T1. The local phone company began their portion of the upgrade installation. As the year ended, an upgraded router had been ordered by BCT for the refuge. Before actual startup, testing will be conducted by the government carrier and BCT.

Following recommendations from the Regional Office on the priorities for spending SAMMS money, a Skycaster satellite system, router, and other related pieces of equipment including cable for the east side shop were purchased. Tom Bender from the Regional Office, along with Office Assistant Drury, set up the new satellite hub connections to the various shop computers during April. The satellite has definitely speeded up e-mail and Internet connections. 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.


REVIEW AND APPROVALS

BANKS LAKE NATIONAL WILDLIFE REFUGE

LAKELAND, GEORGIA

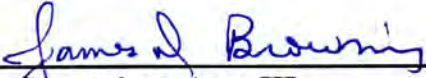
ANNUAL NARRATIVE REPORT

Calendar Year 2005



Refuge Manager

05/13/06
Date



Refuge Supervisor, Area III
Acting

5-23-06
Date



Chief of Refuges

5-24-06
Date

TABLE OF CONTENTS

INTRODUCTION	iii
HIGHLIGHTS	iv
MONITORING AND STUDIES.....	1
1.a. Surveys and Censuses.....	1
1.b. Studies and Investigation.....	2
HABITAT RESTORATION	3
2.a. Wetland Restoration: On-Refuge	(Nothing to Report).....3
2.b. Upland Restoration: On-Refuge	(Nothing to Report).....3
2.c. Wetland Restoration: Off-Refuge	(Nothing to Report).....3
2.d. Upland Restoration: Off-Refuge	(Nothing to Report).....3
HABITAT MANAGEMENT	4
3.a. Water Level Management.....	4
3.b. Moist Soil Management.....	(Nothing to Report).....4
3.c. Graze/Mow/Hay	(Nothing to Report).....4
3.d. Farming.....	(Nothing to Report).....4
3.e. Forest Management	(Nothing to Report).....4
3.f. Fire Management	(Nothing to Report).....4
3.g. Pest Plant Control	4
FISH AND WILDLIFE MANAGEMENT	6
4.a. Bird Banding.....	(Nothing to Report).....6
4.b. Disease Monitoring and Treatment	(Nothing to Report).....6
4.c. Reintroductions.....	(Nothing to Report).....6
4.d. Nest Structures.....	(Nothing to Report).....6
4.e. Pest, Predator, and Exotic Animal Control.....	(Nothing to Report).....6
COORDINATION ACTIVITIES	7
5.a. Interagency Coordination	7
5.b. Tribal Coordination	(Nothing to Report).....7
5.c. Private Land Activities	(Nothing to Report).....7
5.d. Oil and Gas Activities.....	(Nothing to Report).....7
5.e. Cooperative/Friends Organizations	(Nothing to Report).....7

RESOURCE PROTECTION.....	8
6.a. Law Enforcement.....	8
6.b. Wildfire Preparedness.....(Nothing to Report).....	9
6.c. Permits and Economic Management	9
6.d. Contaminant Investigation and Cleanup.....	9
6.e. Water Rights Management.....(Nothing to Report).....	9
6.f. Cultural Resource Management	9
6.g. Federal Facility Compliance Act.....(Nothing to Report).....	9
6.h. Land Acquisition	9
6.i. Wilderness and Natural Areas	9
6.j. Threats and Conflicts.....	9
ALASKA ONLY	11
PUBLIC EDUCATION AND RECREATION.....	12
8.a. Provide Visitor Services	12
8.b. Outreach.....	14
8.c. Concession Operations.....	14
PLANNING AND ADMINISTRATION.....	15
9.a. Comprehensive Conservation Planning.....	15
9.b. General Administration	15
9.c. Training and Travel	15
9.d. Energy.....(Nothing to Report).....	15
9.e. Funding.....(Nothing to Report).....	15
9.f. Safety	15
9.g. Volunteers.....	15

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, 1,000 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 (Figure 1).

On April 16, 1980, the U.S. Fish and Wildlife Service entered into a lease agreement with The Nature Conservancy to manage 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.



Figure 1. Banks Lake at sunset.

HIGHLIGHTS

- Georgia Department of Natural Resources (GA DNR) fisheries survey in December indicates a stable healthy fish population. (Section 1.a.)
- With the help of GA DNR about 200 acres of water hyacinth were sprayed in July and September. (Section 3.a.)
- The Grand Bay-Banks Lake Ecosystem team received a Department of Defense Legacy grant of \$172,000.00. (Section 5.a.)
- A record high of 40 federal violation notices were issued in 2005. (Section 6.a.)
- Five landowners with encroaching structures were issued Notices of Violation. (Section 6.a)
- Okefenokee Adventures was awarded a two-year contract for the operation of the concession “Banks Lake Outpost”. (Section 8.b.)
- Eight volunteers served as on-site refuge caretakers and contributed over 2,200 hours. (Section 9.g.)

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.

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

The Banks Lake NWR fishery was surveyed in December 2005. Six transects were surveyed for a total of 322 minutes. The results of this survey are presented in Table 1.

Table 1. Results of electrofishing the waters of Banks Lake in December 2005.

Pedal Time	December 2005
Species	
Black Crappie	124
Bluegill	134
Bowfin	107
Bullhead	6
Sunfish	1
Pickereel	33
Gar	45
Flier	41
Golden Shiner	22
Lake Chub Sucker	104
Large Mouth Bass	52
Warmouth	63
Total	732

1.b. STUDIES AND INVESTIGATIONS

See section 5.a.

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.

3.a. WATER LEVEL MANAGEMENT

Water levels at Banks Lake remained high throughout 2005. In January, water levels were up to 191.90 feet msl. They dropped to 190.85 in November, creating a range of 1.05 feet.

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 Department of Natural Resources (DNR) aquatic plant management staff sprayed approximately 200 acres of water hyacinth within Banks Lake NWR (Figure 2). Two applications were conducted in July and September. This treatment killed approximately 60 percent of the water hyacinth plants sprayed. Further investigation in 2006 will determine the need and extent of the next treatment cycle.



Figure 2. Water hyacinth was sprayed in 2005, but continues to be a problem around the edge of Banks Lake.

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 Ecosystem (GBBL) team met several times during the year. The Department of Defense Legacy Program approved \$172,000 to conduct a thorough examination of the interaction of hydrology and fire ecology to allow resource managers to develop a science-based plan to conserve the regionally significant communities, while facilitating execution of the military mission. With this funding, Amy Squire, from the University of Georgia, examined vegetation changes using photos taken since 1944. A contract was also awarded to Cecil Frost, a landscape Fire Ecologist from the University of North Carolina, to map the original fire regimes and pre-settlement vegetation of the area.

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 were carried out by Refuge LE Officers from Okefenokee NWR. A greater effort was placed on law enforcement activities this year due to the Lanier County GA DNR Ranger being out with health issues and the opening of Banks Lake Outpost. A kiosk with posted refuge regulations is at the boat ramp and informs the refuge visitors about refuge regulations.

The refuge boundary issue has finally been worked out with the courts concerning the fishing piers. Four of the property owners, whose piers were encroaching onto the refuge, have removed their structures. Only one pier is still in dispute, and the case should be decided sometime in February of 2006.

Fishing has improved, the Banks Lake Outpost opened for business, and visitation was up in 2005. As a result, an increase in LE efforts produced 40 federal violations issued by refuge officers this year, an all-time high. Fifteen incident reports were written, mainly involving trash dumping and late night beer parties. There have also been reports of illegal drug use and sales on the refuge; however, no cases were made in 2005. The placement of resident volunteers has curtailed many incidents from occurring, especially after dark.

Table 2. Federal violations issued by refuge officers in 2005.

Refuge Violations	Number of Cases
Operation of a boat without the required floatation device.	10
Possession of a firearm on a NWR.	7
Fishing on a NWR without a State License.	7
Construction of an illegal dock on a NWR.	5
Operation of a boat with no running lights.	3
Operation of a boat on a NWR with expired registration.	3
Use of an ATV on a NWR.	2
Use of a cast net on a NWR.	1
Trespassing in a closed area.	1
Operation of a motor vehicle with no driver's license.	1
Total	40

6.b. WILDFIRE PREPAREDNESS

The Grand Bay-Banks Lake Ecosystem (GBBLE) discussed the development of a Fire Management Plan for the greater Grand Bay area. A contract was given to Cecil Frost from the University of North Carolina for the development and completion of the historical fire data. There were no reported wildfires on or adjoining Refuge property.

6.c. PERMITS AND ECONOMIC MANAGEMENT

See Section 1.b.

6.d. CONTAMINANT INVESTIGATION AND CLEANUP

The septic systems of residences on the north edge of Banks Lake continue to be a concern; however, no action was taken in 2005.

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; however, one still remains. The Fish and Wildlife Service Regional Solicitor's Office and the United States Attorney's Office, Middle District of GA, are working together on the removal of this structure.

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 Health Department, Environmental Protection Agency, and Georgia Environmental Protection Division, requesting verification on wastewater treatment systems in compliance with all applicable county and state regulations 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

Facilities include a kiosk, concession operation, parking lot, fishing pier, and double-wide boat ramp. Information pertaining to visitation is not collected.

Special Events

Over 100 children participated May 28th in a fun-filled day of activities promoting kids fishing. The fishing derby portion of the event was held at Flatlanders Lake in Lakeland, GA (Figure 3). Kids from ages 3 to 15 competed in one of four age groups for prizes. Upon completion of the fishing derby, all participants received a fishing trophy, a certificate, and fishing lures.

The event then moved to Banks Lake NWR, where the CastingKids Contest was held. Kids from age 7 to 14 competed for trophies and prizes as they demonstrated their casting skills. The first-place winners in each age group for CastingKids will continue on to the state level competition held in Atlanta in February 2006. The top two competitors at the state level will then vie for a \$5,000 college scholarship, which is sponsored by the Bass Anglers Sportsmen's Society (B.A.S.S.) Federation (Figure 4).

All visitors to the fishing derby and casting competition enjoyed free hot dogs, chips, and drinks, compliments of Valdosta BassMasters, Pepsi-Cola, and Coca-Cola. Dozens of participants painted T-shirts with fish prints and other animals. Many tried their hand at worm gruntin', a traditional method of gathering earth worms. Kids and adults also challenged their fish identification skills. Numerous fishing related and refuge giveaways (bumper stickers, tattoos, various pamphlets, and booklets on fishing related topics) were given away. Pictures from last year's derby were posted for everyone to see. Every child at the awards ceremony received at least one gift of fishing tackle or a fishing rod. Okefenokee Wildlife League members assisted with registration and activity booths at the event, and fishing experts from Valdosta BassMasters and Valdosta BassBusters were on hand to help with the fish weighing, registration, food service, and casting competition.



Figure 3. Children enjoyed a day of fishing at Flatlanders Lake in Lakeland GA.



Figure 4. Winners of the CastingKids Contest.

8.b. Outreach

On November 15, ten members of the Leadership Lanier Program were given a VIP tour of Banks Lake NWR. The tour included an orientation to the public services provided by the refuge and a walk-in tour of the “Banks Lake Outpost.”

8.c. Concession Operations

Recognizing a need for providing the public with basic services we advertised for a contractor to occupy the vacant concession building and provide concession services at Banks Lake.

Okefenokee Adventures Inc. submitted the only proposal and was granted a two-year contract, beginning on September 1, 2005, to operate the “Banks Lake Outpost” as the primary concession at Banks Lake NWR, with an option for another three years at the discretion of the Refuge Manager.

The “Banks Lake Outpost” provides a sales outlet for retail items such as clothing, souvenirs, fishing equipment, live bait, and convenience items. In addition, the outpost provides services such as issuing state fishing licenses, 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 has a completion deadline of 2012

9.b. GENERAL ADMINISTRATION

Banks Lake NWR is an untended, unstaffed station 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 eight volunteers who contributed more than 2200 hours. An advertisement for a volunteer position was posted on www.volunteer.gov and through *Workamper* magazine. Selected volunteers live on the refuge by the boat landing. Duties include general maintenance of grounds and facilities and public contact.