REVIEW AND APPROVALS

OKEFENOKEE NATIONAL WILDLIFE REFUGE

FOLKSTON, GEORGIA

ANNUAL NARRATIVE REPORT

Calendar Year 2002

Refuge Manager	**Date** 5-21-03
Refuge Supervisor, Area III	**Date** 6-24-03
Chief of Refuges	**Date** 7/1/03

TABLE OF CONTENTS

INTRODUCTION

The Okefenokee National Wildlife Refuge is situated in the southeastern Georgia counties of Ware, Charlton and Clinch and northeastern Florida's Baker County. The refuge was established by Executive Order in 1937 and consists presently of 395,080 acres. The primary purpose of the refuge is to protect the ecological system of the 438,000-acre Okefenokee Swamp. Approximately 371,000 acres of the Okefenokee Swamp wetlands are incorporated into the refuge, and 343,981 acres within the swamp were designated as wilderness by the Okefenokee Wilderness Act of 1974. In 1986, the Okefenokee National Wildlife Refuge was designated by the Wetlands Convention as a Wetland of International Importance.

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

The establishment of Okefenokee National Wildlife Refuge on March 30, 1937, marked the culmination of a movement that had been initiated at least 25 years earlier by a group of scientists from Cornell University who recognized the education, scientific and recreational values of this unique area. The Okefenokee Preservation Society, formed in 1918, promoted 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. Access via Suwannee Canal, the east entrance, located 11 miles southwest of Folkston, Georgia, is the location of the refuge headquarters and is managed solely by the Fish and Wildlife Service. The Stephen C. Foster State Park is located at the refuge's west entrance 18 miles northeast of Fargo, Georgia. This state park is operated on refuge lands under the provisions of a long-term agreement with the Georgia Department of Natural Resources. The refuge's north entrance is via the Okefenokee Swamp Park which is located about 13 miles south of Waycross, Georgia. 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 area on the west side are considered the secondary entrances into the refuge.

HIGHLIGHTS

- Drought conditions persisted throughout the year with rainfall below the average for the fourth consecutive year. (Climate Conditions)

- A final report for the five-year study Population Ecology of Black Bears in the Okefenokee Swamp-Osceola Ecosystem was completed. (Section 1.b.)

- Lightning caused two major fires on the refuge and a third started after drying conditions allowed a prescribed fire to move off Number One Island. Total acres burned in the three fires was 124,110 acres. (Section 3.e.)

- Refuge staff were presented with a Unit Award for Excellence of Service by Director Steve Williams for exceptional preparation, cooperation, and teamwork exhibited during wildland fires in 2002. (Section 8.a.)

- Okefenokee Wildlife League (OWL), cooperating association for the refuge, sponsored a visit to the swamp by Ann Klee, Special Counsel to Interior Secretary Gale Norton, and Jon Andrew, Southeast Regional Chief of Refuges. (Section 8.a.)

- The refuge entered into an Memorandum of Understanding with International Paper Company to provide an interpretive trail and habitat buffer along the East Entrance access road. (Section 8.b.)

CLIMATIC CONDITIONS

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

The following six 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
Durdin Prairie	Water level and water quality
North Fork (Sill)	Water level
Cypress Creek	Water level and precipitation

North Fork and Cypress Creek stations were installed this year. Access to the sites for maintenance and replacement of the YSI water quality probe has been difficult with the low water levels.

Precipitation during 2002 resulted in a total of 49.47 inches falling at Camp Cornelia on the east side of the swamp (Table 1). Rainfall was less than the 57-year average of 52.34 inches. This is the fourth year rainfall was below the average amount. The most significant rain fell in March, August, November and December. During April and May when the demand for water is the greatest, only 1.18 inches fell compared to an average of 6.98 inches. Water levels fell to their lowest levels in July and then climbed to above average levels in November (Section 3.a.).

We primarily gauge the condition of the swamp by the east side's historical records; however, rain distribution varies over the swamp. Jones Island located on the west side of the swamp received approximately 43 inches of rain through the year. On the northwest side at Suwannee Creek, total rainfall was 35 inches and the northeast side at Kingfisher Landing received 38 inches, both similar to last year's rainfall.

Temperatures ranged from 21°F to a high of 102°F (Table 2). Spring and fall temperatures tended to be slightly warmer on the average.

Lightning caused two large fires on the refuge in May while a third was the result of drying conditions in April allowing a prescribed burn to escape off Number One Island (Section 3.f.).

Table 1. Monthly precipitation (inches) for 2002 compared with the 57-year monthly average at Camp Cornelia.

Month	2002	Average 1945-2001
January	3.55	3.50
February	0.76	3.44
March	6.79	4.21
April	0.71	3.30
May	1.47	3.68
June	4.21	5.85
July	4.78	7.51
August	9.05	7.20
September	5.38	5.41
October	3.06	3.21
November	4.16	2.17
December	5.55	2.86
TOTAL	49.47	52.34

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

	Average Minimum		Average Maximum		Absolute Minimum		Absolute Maximum	
Year	**2002**	**90-01**	**2002**	**90-01**	**2002**	**90-01**	**2002**	**90-01**
January	44	42	73	67	21	18	83	84
February	43	46	70	71	22	13	85	88
March	52	49	79	76	23	21	91	90
April	61	54	86	82	42	35	94	95
May	61	62	89	89	44	38	94	103
June	69	68	91	92	60	54	101	104
July	71	71	94	95	65	63	102	106
August	71	70	92	93	62	61	99	104
September	72	68	91	89	66	50	97	98
October	64	58	85	82	46	36	95	95
November	47	49	73	75	28	24	88	88
December	41	44	65	67	31	19	76	83

1.

MONITORING AND STUDIES

1.a. SURVEYS AND CENSUSES

As refuge staff work on the station's Comprehensive Conservation Plan (CCP), surveys and techniques are being evaluated for compatibility with Wilderness, feasibility using new protocols, reliability and the usefulness of the data, and the need for other information. The minimum tools for these surveys are being considered.

Several factors limited the number of surveys conducted during the year. Assistant Biologist Cindy Thompson, who conducted most of the surveys left, Okefenokee in February for another position. With this position vacant the rest of the year, and Biologist Sara Aicher being the coordinator for the Comprehensive Conservation Plan at Okefenokee NWR, most surveys were put on hold. In addition, wildfires within the swamp demanded full attention by the staff for several months. Low water levels also limited access to most survey routes.

Threatened and Endangered Species

Bald Eagles

Midwinter bald eagle surveys in Georgia are not used in overall bald eagle population trend analysis. Bald eagles have not been seen on recent Okefenokee surveys at the beginning of January. Therefore, this formal survey was discontinued at Okefenokee NWR. Incidental sightings will continue to be recorded and if they fall within the target dates for the state survey, they will be reported. If there is an increase in sightings, the survey can be reinitiated.

One adult bald eagle was seen over the Pocket during mid-December.

Red-cockaded Woodpeckers

Population Status

Okefenokee National Wildlife Refuge has a total of 90 red-cockaded woodpecker (RCW) clusters with 39 active and 51 inactive (Figure 1). The increase in the number of clusters from last year is the result of examining the distribution of the cavity trees on the islands and making a call on cluster boundaries. Thirteen active and 32 inactive clusters are in the upland forests surrounding the swamp (Table 3). Twenty-six active clusters and 19 inactive clusters are on the interior islands (Table 4).

Although long-term viability of the RCW populations spread across the fragmented landscape is being analyzed, the greatest regional value of these island clusters is their natural state, with no inserts or restrictor plates. The suitability of the habitat is critical in determining the limiting factors within these populations of RCW. The last comprehensive inventory of suitability and activity on the islands was conducted in spring 2000.

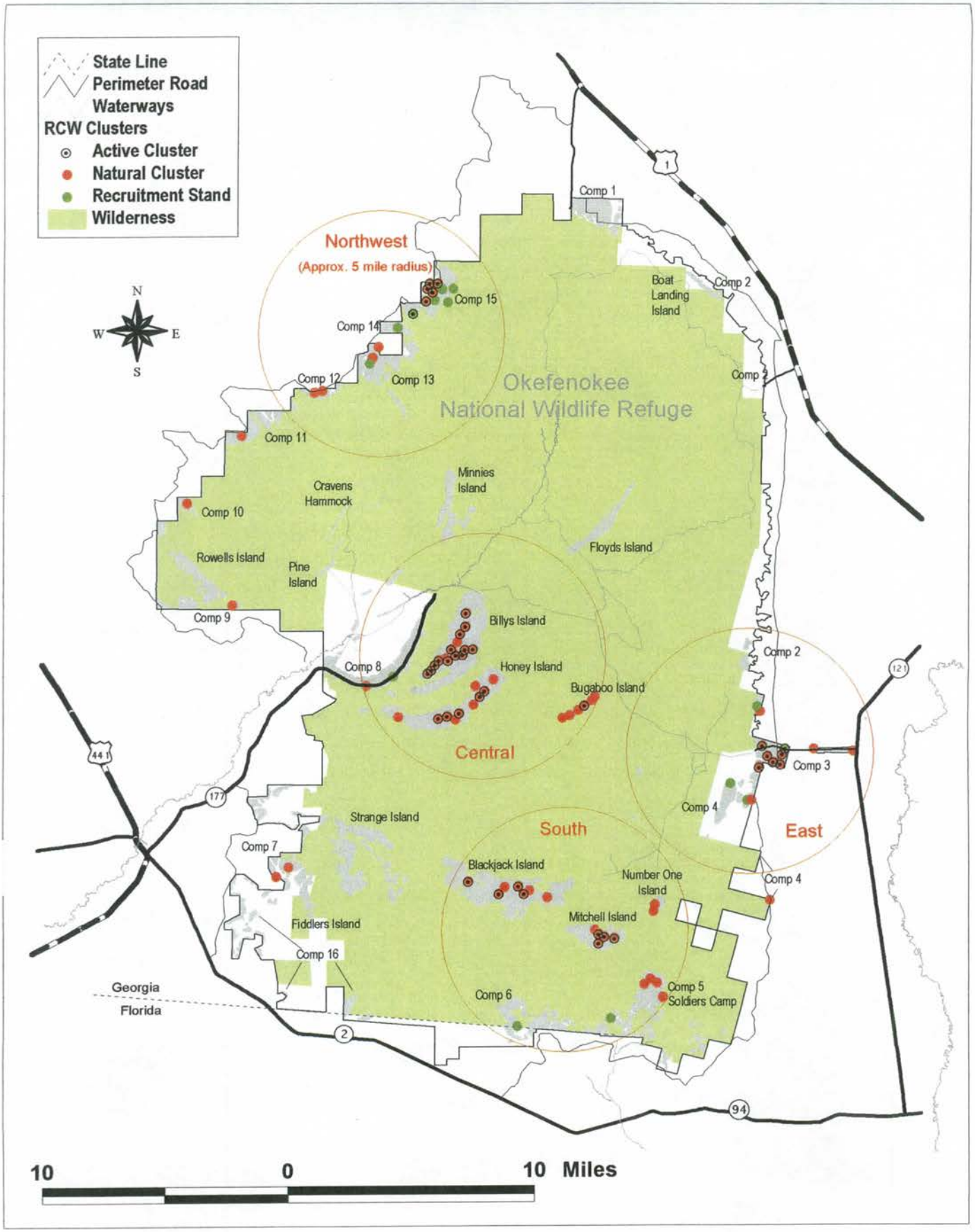

Figure 1. Red-cockaded woodpecker cluster locations and status in 2002.

Table 3. Red-cockaded woodpecker clusters in upland forest compartments on Okefenokee National Wildlife Refuge - 2002.

Compartment	All clusters		Artificial clusters	Artificial clusters occupied this year	Inserts installed this year	Total Clusters
	Active	inactive				
2	0	A, B	B	0	0	2
3	C, E, F, G, H, I, J	A, B, D, K	J, K	J	2 1 replaced	11
4	0	A, B	B	0	0	2
5	0	A, B, C, D, E	E	0	0	5
6	0	A	A	0	0	1
7	0	A, B, C	0	0	0	3
8	0	A, B,	B	0	0	2
9	0	A	0	0	0	1
10	0	A	0	0	0	1
11	0	A	A	0	0	1
12	0	A, B	0	0	0	2
13	0	A, B, C	C	0	0	3
14	0	A	A	0	0	1
15	A, B, C, D, J, I	E, F, G, H,	E, F, G, H, I	I	4	10
Totals	13	32	15	2	6 1 replaced	45

Table 4. Red-cockaded woodpecker clusters on interior islands of Okefenokee National Wildlife Refuge during the last visits - 2000/2001.

Interior Island	Active	Inactive	Total Clusters
Billys Island	A, B, D, F, G, H, I, J, K, L, P, Q	E, R, S	15
Blackjack	C, D, E, F	A, B, G	7
Bugaboo	C	A, B, D, E, F	6
Honey (year 2000)	B, C, F, H, I	A, D, E, G, J	10
Mitchell	A, B, D, E	C	5
Number One	0	A, B	2
Totals	26	19	45

Population Monitoring and Translocations

Northwest Population

No translocations were conducted in this area this year. Four nests were initiated in Compartment 15 with three eggs each (Table 5). Cluster I showed signs of activity around one tree and a red-cockaded woodpecker was heard in the area. No other recruitment stands have shown any other activity.

East Population

The clusters in this population were highly successful in nest initiation (Table 5). Competition for cavities was great in Cluster 3C. Red-cockaded woodpeckers were heard or seen in this cluster throughout the breeding season but no nest was found. A red-bellied woodpecker and flying squirrel produced young in two of the cavities. Predation occurred in Cluster 3E. One egg was found in a cavity, but seven days later, the cavity was empty and no red-cockaded woodpeckers were heard or seen in the area.

Toledo Manufacturing Company clear cut the timber adjacent to the refuge boundary of Compartment 3 during the year. Clusters 3C, 3E, and 3I were impacted the most by this activity due to its proximity.

Table 5. Nesting and reproduction in perimeter clusters during 2002.

Cluster	Clutch size	No. Banded	No. Fledged	Sex	Adults
3C	No nest could be found.				1 in area
3E	1 egg	No egg seven days after checked			2
3F	3	0	3	1 male	3
3G	3	1			3
3H	?	0			4
3I	2	0	2		2
3J	No nesting - 2 adults in area				
15A	No nesting				
15B	3	0			2
15C	3	0			2
15D	3	0		1 male	2
15E	Recruitment site - no activity				
15F	Recruitment site - no activity				
15G	Recruitment site - no activity				
15H	Recruitment site - no activity				
15I	No nesting				1
15J	3	0			2

Central and South Populations

These clusters are located primarily on interior islands and were not surveyed during 2002. Wildfires began in April and moved across the landscape until July limiting access to the islands. All islands with red-cockaded woodpecker cavities burned during the wildfires. Only the north end of Bugaboo Island burned with a high intensity head fire. Because of the chance of misinterpreting the effects of the fires and limiting our use of the helicopter within the Wilderness area, a survey is planned for 2003 breeding season.

Habitat Management

Extended drought conditions continued into the year 2002 with reduced opportunities to burn RCW habitat. Dormant season burns took place around recruitment stands in Compartment 3 and 4. The only island to be prescribed burned was Number One. This fire, after 14 days, burned outside of its expected boundary and became a wildfire.

Table 6. Prescribed burns in red-cockaded woodpecker areas in 2002.

Burn Category	Active Clusters	Inactive Clusters	Recruitment Stands
growing season			
dormant season		C3-4A south (51 acres) Number One Island (170 acres)	C3-5A (28 acres) C4-1,2,3 (670 acres)

Wildfires

The Number One Island and Blackjack02 Fires burned across six pine islands that provide habitat for the endangered red-cockaded woodpecker: Number One Island, Blackjack Island, Mitchell Island, Honey Island, Bugaboo Island, and Billys Island. These islands are also in the designated Wilderness Area. Five of the six islands are accessible only by helicopter.

All high priority RCW cavity trees on all the islands except Honey Island were prepared for fire activity prior to April 1st. This involves clipping the understory within five inches of the ground in a 10-20 foot radius around the base of the tree, scraping loose bark from the base of the tree, and ensuring there is no continuous flow of resin into the ground fuels adjacent to the trunk of the tree.

The fires burned across the islands as follows:

Number One Island: This island was prescribed burned on March 7th . Conditions were good with no damage observed from subsequent flights over the area. It re-ignited on March 20th and portions of the island continued to burn; however, most of the activity was within the adjacent swamp habitat. Number One Island has a stand of old-growth slash pine, a rare habitat community.

Blackjack Island: Blackjack02 fire backed onto Blackjack Island on May 8th, and continued to slowly burn the west half of the island (north to south) from May 9th-14th, when it reached the south edge of the island. Fire also came onto the island on the east side May 14 and on the southeast side May 27-29. The central portion of the island had been burned during a wildfire in 2001. The island had not been prescribed burned since September 1995.

Mitchell Island: Blackjack02 fire reached the northwest side of Mitchell Island on May 26th, and burned across the island for the next four days. This island was prescribed burned in July 1999.

Honey Island: The western two-thirds of the island burned on May 9th. Once the Blackjack02 fire came onto the island, it fanned out and lost intensity. The following day, the northeast third burned. The last prescribed burn was June 1997.

Bugaboo Island: Blackjack02 fire reached Bugaboo Island's southwest edge on May 12th. The following day, the fire made a significant run to the northeast burning the rest of the island. Bugaboo Island was prescribed burned in July 1997.

Billys Island: Blackjack02 fire crept onto the island on May 15th. It burned the south central portion of the island on May 16th and then crept north and south on May 17th and 18th. This island was prescribed burned February 1999.

Recruitment Stands and Artificial Clusters

No recruitment stands were created this year. Four inserts were installed in Compartment 15 to allow four suitable cavities per cluster. In addition, two inserts were installed in Compartment 3 and one was replaced due to excavation through the back wall of the box.

American Alligator

No alligator surveys were conducted in 2002 due to low water levels, wildfire activity, and lack of staff. The low water levels limited accessibility by visitors; therefore, there were no nuisance alligator complaints this year. Trail cutting operations took approximately 10-12 alligators that could not escape out of the channel.

Other Wildlife

Waterfowl

The mid-winter waterfowl count was not conducted this year due to scheduling conflicts for the helicopter.

Information on waterfowl populations moving in and out of the swamp has been collected during monthly bird surveys. Conducted in the past by airboats, this mode of transportation is being re-evaluated in relation to the Wilderness guidelines.

Marsh and Water Birds

Information on the distribution of marsh and water birds is important and may be correlated with other factors. Past monthly wildlife surveys by airboat tracked the more conspicuous waders, including the migratory greater sandhill cranes and the resident Florida sandhill cranes. Airboats are currently being re-evaluated in relation to the Wilderness "minimum tool requirement". Most of the survey routes are not accessible by motorboat during low water levels. The refuge purchased a "Go-Devil" (a boat which operates in shallow water) for a possible alternative; however, there has not been sufficient opportunity during the year to try it out for this purpose.

Throught the CCP other methods are being considered that would provide data on distribution over the expanse of Okefenokee in a timely manner, including aerial surveys.

Wildfires were active in the swamp during the colonial waterbird survey; therefore, no survey was conducted. Helicopters were regularly flying over the swamp, but no reports came back of any large rookeries being seen.

An aerial survey for sandhill cranes was conducted on November 4th. It was surprising that only 27 cranes were observed within Chesser, Grand, Mizell, Christie, Floyds, and Chase Prairies. The migration into Okefenokee appeared to be later than usual.

A roseate spoonbill was observed in Chesser Prairie by visitors in June.

Raptors

The annual osprey nesting survey was not conducted due to wildfire activity.

Swallowtail kite sightings were common during the summer. Two were regularly seen along U.S. 1 near Spanish Creek. Kites were also working the edge of the burn areas.

Other Birds

Sheila Willis discontinued conducting bird surveys twice a month along the Perimeter Road on the east side of the refuge and avian point counts this year. Sheila has provided valuable information for three years. These surveys will be conducted periodically to look at trends.

The annual Christmas Bird Count was held on December 27th. Seventy-seven species were observed including an immature golden eagle and a barn swallow. The robin dropped from being the most abundant bird observed during our count to fifth most abundant.

Mammals

A deer herd health check was conducted by the University of Georgia College of Veterinary Medicine and Area Biologist Ron Freeman at the east and west entrances of the refuge. The health evaluations involved examination of five adult deer from each of the two areas. An overview is as follows for both populations: 1) the herd is probably below nutritional carrying capacity; 2) the levels of important pathogenic parasites, excepting possibly large stomach worms, were not at levels sufficient to be of concern; 3) the population has recently experienced widespread hemorrhagic disease virus activity but currently has a high level of herd immunity; 4) other selected viral and bacterial diseases have not had high levels of activity on the area (except for probable exposure to leptospires at the west entrance); 5) the overall health status of the herd is such that disease-related mortality probably is not occurring to a significant extent at present. Continuation of current herd density would not be expected to risk a decline in herd health or increased rates of disease-induced mortality.

The east entrance deer hunt in Compartments 3 and 4 (along the Wildlife Drive) was conducted on October 25th and 26th. Because harvest levels are too low for statistically significant values, no check stations were set up during the hunt to collect weight or age data. Chesser Island is for wheelchair-use only with a quota of ten hunters and an additional 30 hunters are allowed in the remaining area. Seventy-seven people applied and 34 hunters were selected with no wheel-chair hunters. With an additional 16 stand-by hunters, 52 slots were filled over the two-day period. Ten deer (five females and five males) were harvested.

Refuge land on Cowhouse Island was open to deer hunting for the third year and administered by Georgia Department of Natural Resources in conjunction with scheduled hunts on Dixon Memorial State Forest (DMSR). All dates and deer quotas for the refuge property matched the 2002-2003 Georgia state regulations. For the entire DMSR, 1,668 hunter visits harvested a total of 79 deer; 54 males and 25 females. Three females and one male deer were reported by hunters as being harvested on the refuge. Small game hunting was opened on Cowhouse in accordance with state seasons and regulations.

The Pocket was opened for archery season for the second year. As with Cowhouse Island, all dates and deer quotas for the refuge property matched the 2002-2003 Georgia state regulations. Total hunter visits were 502. Nineteen deer were harvested with nine females and ten males.

Bear hunting is not allowed on refuge lands; however, during the 2002 season, 50 bears were taken in the five Georgia counties surrounding the swamp. Thirty-six were males, 14 were females. No bears were harvested on DMSR.

Bear Bait Stations

Surveys of black bears visiting sardine bait stations were conducted July 8th through 17th. Thirty-two stations were set. We had six hits: one on Moonshine Ridge, one on Soldier Camp Island, three on Fiddler's Island, and one on the Pocket. Including the transects set out by Georgia Department of Natural Resources, the number of stations around the swamp comes to 192.

Fisheries

The Okefenokee Swamp is the headwaters of the well-known Suwannee River and the St. Marys River. The swamp contributes to the fisheries in these two rivers.

Georgia Department of Natural Resources and Panama City Fisheries Assistance Office were unable to conduct the annual 2001 fish survey until the beginning of 2002 (Table 7). Low water limited their survey area. On the east side of the refuge, sport fisheries appears to be limited to fliers and warmouth. Warmouth make up the majority of the fish sampled on the west side.

Table 7. Electrofishing results in January 2002 compared to previous years.

	East Side									West Side								
Species	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Dec94	Jan94	Jan02	Dec00	Dec99	Dec98	Jan98	Dec96	Dec95	Jan95	Dec93
Pedal Time	2.5	3+	4	6	6	6	4	6	6	3	3	4	6	6	6	2	6	6
Warmouth	38	26	28	17	4	5	6	21	7	66	84	99	65	27	15	9	5	20
Pickerel	18	28	27	34	8	15	43	57	19	27	28	34	31	12	25	47	15	37
Lake Chubsucker	35	41	14	16	9	1	1	0	0	2	1	0	1	0	0	2	0	0
Sunfish	20	0	0	0	0	0	0	1	2	12	3	0	0	0	1	0	0	3
Flier	90	113	171	178	60	98	387	634	427	14	10	67	133	35	77	137	29	157
Bowfin	317	719	725	258	123	85	67	169	308	1	4	24	181	68	142	41	66	135
Bullhead	3	17	5	15	2	1	0	3	4	24	35	25	41	10	52	0	9	39
Other	36	9	14	13	2	2	12	2	0	4	80	47	37	1	16	12	0	0
Total	557	953	984	531	208	207	516	887	767	150	245	296	489	153	328	248	124	391

Over the past 30 years, fliers have become the dominant sport fish by number with warmouth declining from historic levels. Chain pickerel and bullhead appear to be stable. Bowfin are the most abundant predator in the system, while largemouth bass have become almost non-existent. The acidity of the water is a concern for survival and reproduction. Other factors may be contributing to the decline in the Okefenokee fisheries as well.

Amphibians

The United States Geological Survey (USGS) Florida Caribbean Research Center in Gainesville, Florida continue to collect data for the *Amphibian Research and Monitoring Initiative in the Southeastern U.S. and U.S. Caribbean.* (See Section 1.b.)

It was reported by trailcutter operators that numerous sirens and/or amphiumas were killed by the trailcutter. This perhaps was due to cutting trails during low water levels.

Invertebrates

The study "Wetland macroinvertebrate dynamics within the Okefenokee Swamp" continued this year by University of Georgia, Department of Entomology professors Joseph McHugh and Darold Batzer (Section 1.b.).

1.b. STUDIES & INVESTIGATIONS

Ecological

Control of wetland carbon sequestration by climate: A latitudinal comparison of soil organic carbon accumulation in freshwater peatlands - Amy Parker, Warnell School of Forest Resources, University of Georgia

Amy Parker initiated this study in 2000 and proposed to measure peat accretion and organic carbon accumulation in peat lands along the coastal plain region of the eastern U.S. This information would fill in gaps in the existing data set and test the hypothesis of global (climate) versus local control of wetland carbon accumulation. U.S. EPA will use the results to characterize wetland organic carbon accumulation for various Nutrient Ecoregions and assist in developing technical guidance manuals for the Wetland Nutrient Criteria Program. The results indicate more local influence than global control. A report was completed for EPA.

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

See Section 3.a for the status of this study.

Wildlife

Amphibian Research and Monitoring Initiative in the Southeastern U.S. and U.S. Caribbean - Dr. Steve Johnson, USGS Florida Caribbean Science Center, Gainesville, FL

Dr. Lora Smith initiated this study at Okefenokee NWR in 2000. The initial approach to the amphibian inventory and monitoring initiative included: 1) "extensive" sampling to determine species presence and distribution on the refuge; 2) "intensive" sampling at 16 permanent monitoring sites within the refuge; and 3) development of a protocol for monitoring aquatic salamander populations. Monitoring at Okefenokee was scaled back during 2002 due to logistical difficulties reaching sites and the re-prioritizing of study needs. Steve Johnson is currently heading the study group. Sampling will be done periodically.

University of Florida student Kristina Sorensen continued her sampling for aquatic salamanders throughout the year and was working to complete her master's thesis at the end of the year.

Evolutionary and Ecological Processes within Dystrophic Blackwater Habitats: Speciation and Historic Biogeography in Enneacanthini Sunfishes and Potential Factors Influencing Their Local Distributions - Tanya Peterson Dardin, University of Southern Mississippi

No collection was done this year on this study. The genetic data is currently being processed and expected completion is Spring 2004.

Wetland macroinvertebrate dynamics within the Okefenokee Swamp - Department of Entomology, University of Georgia

Joseph McHugh, Darold Batzer, and Ray Noblet initiated sampling in December 1998. In August 2000, a two-year sampling effort was completed to describe the structure of wetland invertebrate communities and assess concentrations of mercury in select invertebrates across the Okefenokee Swamp. Additional sampling was conducted in 2001 for mercury analysis along boat trails. Results from the mercury and the community distribution portion of the study were received in 2002. The following were noted in the reports:

- Taxa richness (104 taxa) in the Okefenokee fits within the range found among other Southeastern U.S. wetlands.
- Chironomids, water mites, and ceratopogonids were the numerically dominant taxa, collectively comprising 85% of total individuals collected.
- The relative dominance of amphipods, in particular *Crangonyx*, was not as great in the Okefenokee as it is in other southern wetlands.
- Water mites were unusually dominant in the Okefenokee.
- Molluscs and oligochaetes were conspicuously absent from Okefenokee samples.
- Presence of numerous taxa of large predatory invertebrates in this perennial, fish-bearing habitat was unexpected.
- Levels of mercury detected in Okefenokee invertebrates were extremely high, even for wetlands.

- Higher mercury levels were detected in amphipods possibly due to their close association with sediments or with mercury sequestering plants.
- Crayfish do not appear to be an optimal indicator organism for detecting mercury.
- Mercury levels in Okefenokee invertebrates is less affected by drying and reflooding cycles than elsewhere.
- Mercury monitoring must address temporal variation possibly around drought and fire.

Population Ecology of Black Bears in the Okefenokee Swamp-Osceola Ecosystem - University of Tennessee, National Biological Service and the University of Florida

A final report was submitted to the refuge on this five year study on black bears in the Okefenokee Swamp-Osceola Ecosystem. Co-investigators of this study are Dr. J. Clark, National Biological Survey, University of Tennessee-Cooperative Park Studies Unit; Dr. M. Pelton, Department of Forestry, Wildlife and Fisheries, University of Tennessee; and Dr. M. Sunquist, Department of Wildlife Ecology and Conservation, University of Florida.

In addition, the following theses were received:

- Black bear diet, movements, and habitat selection in North Florida and South Georgia - Brian Scheick.
- Abundance and density of Florida black bears in the Okefenokee National Wildlife Refuge and Osceola National Forest - Steven Dobey.
- Fine-scale habitat use, activity, and movements of female black bears in North-Central Florida - Darren Masters.

From the final report, the following was noted:

- On Osceola, protection from hunting has resulted in high population growth and high emigration rate of subadults. Population growth appears to be spurred by the use of corn feeders on Osceola.
- On Okefenokee study area, mortality from hunting is high but sustainable because of the constant influx of immigrants.
- A major component of bear management surrounding the Okefenokee Swamp will involve harvest regulation. Researchers cautioned against increasing bear hunting opportunities at this time because the harvest needs to accommodate the extreme fluctuations in harvests.
- Bears in the Okefenokee-Osceola ecosystem could not survive without the security provided by the swamp itself.
- Where bears are not tolerated by man, they do not exist.
- Okefenokee-Osceola bear population is relatively large and not in jeopardy, unlike other Florida black bear populations.

Contaminants

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

Okefenokee NWR is the site for monitoring air quality conditions through the following programs:

- Interagency Monitoring of Protected Visual Environments (IMPROVE)
- National Atmospheric Deposition Program (NADP)
- Mercury Deposition Program (MDP)

Contractor Ron Phernetton operates the air quality station at Okefenokee.

The Health of Amphibian and Reptile Populations at Okefenokee National Wildlife Refuge - Southeast Georgia - Ecological Services, Brunswick, GA - Greg Masson collected amphibians and reptiles from the swamp in 1993 and 1994. The results of the lab analysis of the specimens was not reliable and therefore a report will not be written.

Other Researchers

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

Larry Thompson with the Georgia Forestry Commission supervised the crew that conducted and evaluated the Forestry Inventory Analysis plots within the swamp. This was the fourth year of a five-year rotation. The plots that could not be reached will be eliminated from the survey.

Sydney Bacchus with Applied Environmental Services in Athens, Georgia collected branch tips and cones from cypress to evaluate speciation of bald cypress and pond cypress.

Marc and Maria Minno under contract with Ecological Services-Jacksonville, Florida conducted a status survey of the Arogos skipper butterfly (*Atrytone arogos arogos*) within pine uplands.

Donald Macalady (Colorado School of Mines) and Richard Playle (Wilfred-Laurier University of Waterloo, Ontario) collected dissolved organic matter from the Suwannee River.

Charles Lagoueyte with Natural Resources Conservation Service in Waycross, Georgia documented the Dasher soil series in the prairie system of the eastern part of the swamp.

Beverly Beaumier under the direction of Dr. Andrew Madison from Waycross College examined the diversity of macroinvertebrate species and population within aphotic and photic areas.

Jimmy Thompson and Paige Allen, also under the direction of Dr. Andrew Madison from

Waycross College examined invertebrates within the substrate of the swamp and compared the findings to local isolated ponds.

There has been no on-refuge activity related to the following studies during 2002. The refuge is waiting for final reports.

Emissions of air pollutants from biomass fuels in the United States and Fuel loading and fire behavior photo series for major natural fuel types of the United States - USFS, Intermountain and Pacific Northwest Research Stations - Darold Ward and Roger Ottmar - 1996

Fire-adapted vegetation of the Southeastern Coastal Plain: A Template for restoration of the longleaf pine ecosystem. - University of North Carolina - Robert Peet

2.

HABITAT RESTORATION

2.a. WETLAND RESTORATION: ON-REFUGE

An environmental assessment was completed in 1998 on the future management of the Suwannee River Sill. The preferred alternative involves a phased approach to remove the concrete water control structures and breach the Sill in selected locations. This approach will restore the hydrologic link between the Okefenokee Swamp and the Suwannee River and in turn re-establish the ecological processes that are vital to the continued health of the Okefenokee ecosystem. The four-year study ended in October 2002. United States Geological Survey (USGS) continued to monitor flows at the sill and downstream. With personnel changes at USGS, the final report has not been received and is expected around March 2003. Barring documented impacts to public use and private landowners which cannot be mitigated through management actions, the two concrete water control structures would eventually be removed and four additional breaches would be made through the earthen dam. Funding for partial removal of the Suwannee River Sill will depend on Congressional action.

In October a new water monitoring station was placed at the mouth of the River Narrows near the south water control structure.

2.b. UPLAND RESTORATION: ON-REFUGE

See Section 3.e.

2.c. WETLAND RESTORATION: OFF-REFUGE

Nothing to Report.

2.d. UPLAND RESTORATION: OFF-REFUGE

Nothing to Report.

3.

HABITAT MANAGEMENT

Okefenokee National Wildlife Refuge (395,080 acres) includes most of the 438,000 acre Okefenokee Swamp.

The refuge objectives pertaining to habitat management are:

1) To provide protection to the unique environmental qualities of the Okefenokee Swamp (to perpetuate the health and integrity of the swamp considering the natural processes of fire and hydrology).

2) To provide optimum habitat and protection for endangered and threatened species, including the American alligator, red-cockaded woodpecker and indigo snake.

3) To provide optimum habitat for a wide diversity of birds, mammals, fish, reptiles and amphibians.

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

The most intensive management occurs on our 33,602 acres of upland pine stands. These upland pine forests are managed primarily for the re-establishment of the native long-leaf pine/wiregrass community and the red-cockaded woodpecker. Retired forester Ron Phernetton has re-written the Habitat Management Plan to encompass all habitats and management. This document will become an integral part of the Comprehensive Conservation Plan.

3.a. WETLAND MANAGEMENT

Water Levels

Acres classified as wetlands total 371,000. Although fire plays an important role in the landscape, we do not currently conduct prescribed burns in swamp vegetation communities. Because of the difficulty in fighting a fire within the swamp, fire fighting efforts are generally concentrated on the periphery to protect private property, while we continue to monitor the fire within the interior of the swamp.

Water levels are critical in the management of Okefenokee. We cannot control the level, but it influences our prescribed burning of islands, our travel and access into areas, and the distribution of wildlife species. Two new Forestry Technology System water monitoring stations were installed this year bringing the total stations to eight (Suwannee Canal, Jones Island, Suwannee Creek, Kingfisher Landing, Durdin Prairie, Gannet Lake, North Fork Suwannee River, and Cypress Creek). Stations at Chase Prairie and Sapling Prairie are planned. Water levels are recorded at all sites. A precipitation tipping bucket is located at all sites except Suwannee Canal Durdin Prairie, and North Fork. Water quality at Suwannee Canal, Durdin Prairie, and Gannet Lake include pH, conductivity, and dissolved oxygen.

Water levels throughout the swamp were below average until the fall (Table 8, Figure 2 and 3). Lowest water levels were seen mid-July through the first half of August. Dry conditions remained longer than in 2001. It was not until November when water levels climbed above the average levels.

Table 8. Water levels (msl) at Suwannee Canal Recreation Area (SCRA) and Stephen Foster State Park (SFSP) for 2002. Subscripts indicate number of years included in the average due to missing data.

	SCRA		SFSP	
	2002	Avg 90-01	2002	Avg 90-01
Jan 1	118.80	119.92	113.36	114.60_{11}
15	119.22	120.04	113.80	114.80_{11}
Feb 1	119.27	120.32	113.85	115.21
15	119.17	120.32	113.76	115.37
Mar 1	119.01	120.31	113.57	115.49_{11}
15	119.98	120.33	114.73	115.37_{11}
Apr 1	119.72	120.37	114.23	115.23_{11}
15	119.60	120.24	114.06	114.85_{11}
May 1	119.25	120.10	113.49	114.49
15	118.79	119.85	112.84	114.09
Jun 1	118.68	119.57	113.02	113.86
15	118.59	119.63	113.05	114.00
Jul 1	118.71	119.79	112.96	114.14
15	118.54	119.83	112.82	114.26
Aug 1	118.71	119.88	112.77	114.44
15	119.62	119.92	112.94	114.51
Sep 1	119.77	119.88	113.41	114.36
15	119.79	119.82	113.45	114.48_{11}
Oct 1	119.97	119.92	113.79	114.32
15	120.00	120.12	Missing Data	114.57_{11}
Nov 1	119.99	120.02	Missing Data	114.42_{11}
15	120.10	119.94	114.26	114.38
Dec 1	120.13	119.84	114.28	114.34
15	120.41	119.81	114.83	114.36

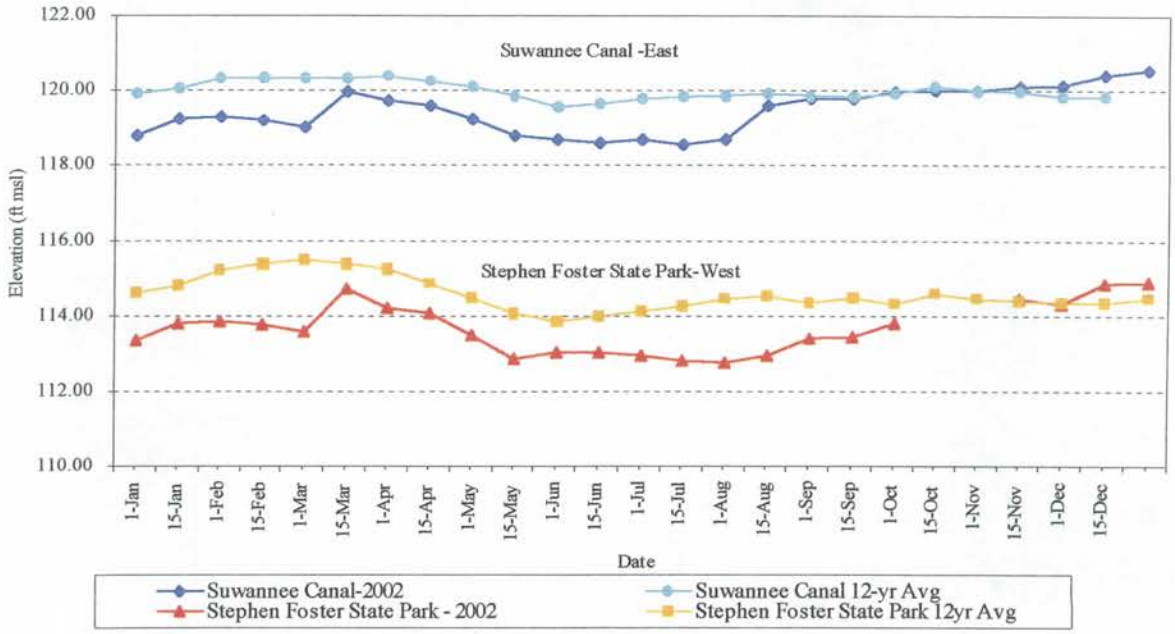

Figure 2. Water levels at Suwannee Canal Recreation Area (SCRA) and Stephen Foster State Park (SFSP) during 2002 compared to the 12-year averages.

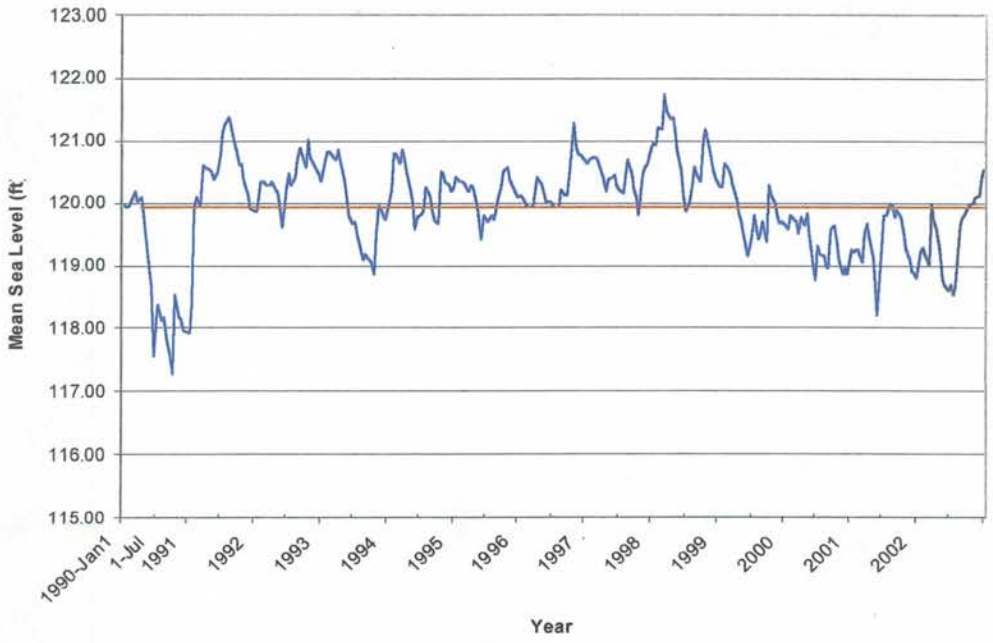

Figure 3. Water levels at Suwannee Canal: 1990-2002.

Suwannee River Sill

The two water control structures remained open this year according to the plan set forth in the 1998 Environmental Assessment. USGS continued to monitor conditions down stream. A final report of findings is expected in March 2003. For more details see Section 2.a..

3.b. MANAGE MOIST SOIL UNITS

Nothing to Report.

3.c. GRAZE/MOW/HAY

Nothing to Report.

3.d. FARMING

Nothing to Report.

3.e. FOREST MANAGEMENT

Okefenokee National Wildlife Refuge contains 347,131 acres of forest lands, including 313,529 acres of wetland hardwoods, cypress and brush lands. The remaining 33,602 acres are upland forest stands of longleaf, slash, pond pine and loblolly, 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 the Wilderness Area. The remaining 16,158 acres of upland forest are in areas designated as habitat management compartments. Commercial harvesting is permitted in the compartments as a tool to accomplish habitat management goals.

Upland Forests

Goals for upland forests on Okefenokee include the restoration of the longleaf pine communities once covering most of the refuge uplands, and maintenance of these habitats through replication of the natural processes that shaped these communities. These habitats deteriorated throughout the Southeast due to "turn of the century" logging and disruption of the natural, frequent fire regime. These open stands hosted a diverse understory of warm season grasses, many low shrubs, and forbs maintained by frequent, low intensity fire. The old growth longleaf pine communities were replaced by dense stands of more prolific, less fire dependent overstory and understory species normally restricted to wetter areas. Over most of its range, only remnant stands of longleaf pine remain, representing less than five percent of its former range. Many wildlife species associated with longleaf communities, including the red-cockaded woodpecker, are either endangered or threatened.

In 1936, by the time Okefenokee NWR was established, longleaf pine communities consisted of a few pure stands of longleaf pine on sandy ridges, a few predominately longleaf stands, and many mixed pine stands with a few relict longleaf stems left after logging in the 1920's. Because of the difficulty of re-establishing longleaf pine, and continued exclusion of fire, refuge 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 longleaf pine communities. Table 9 lists the present distribution of longleaf pine and other species throughout the refuge uplands. Figure 4 shows the locations of the 16 habitat management compartments and the wilderness islands.

Table 9. Upland forest stands on Okefenokee NWR.

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

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

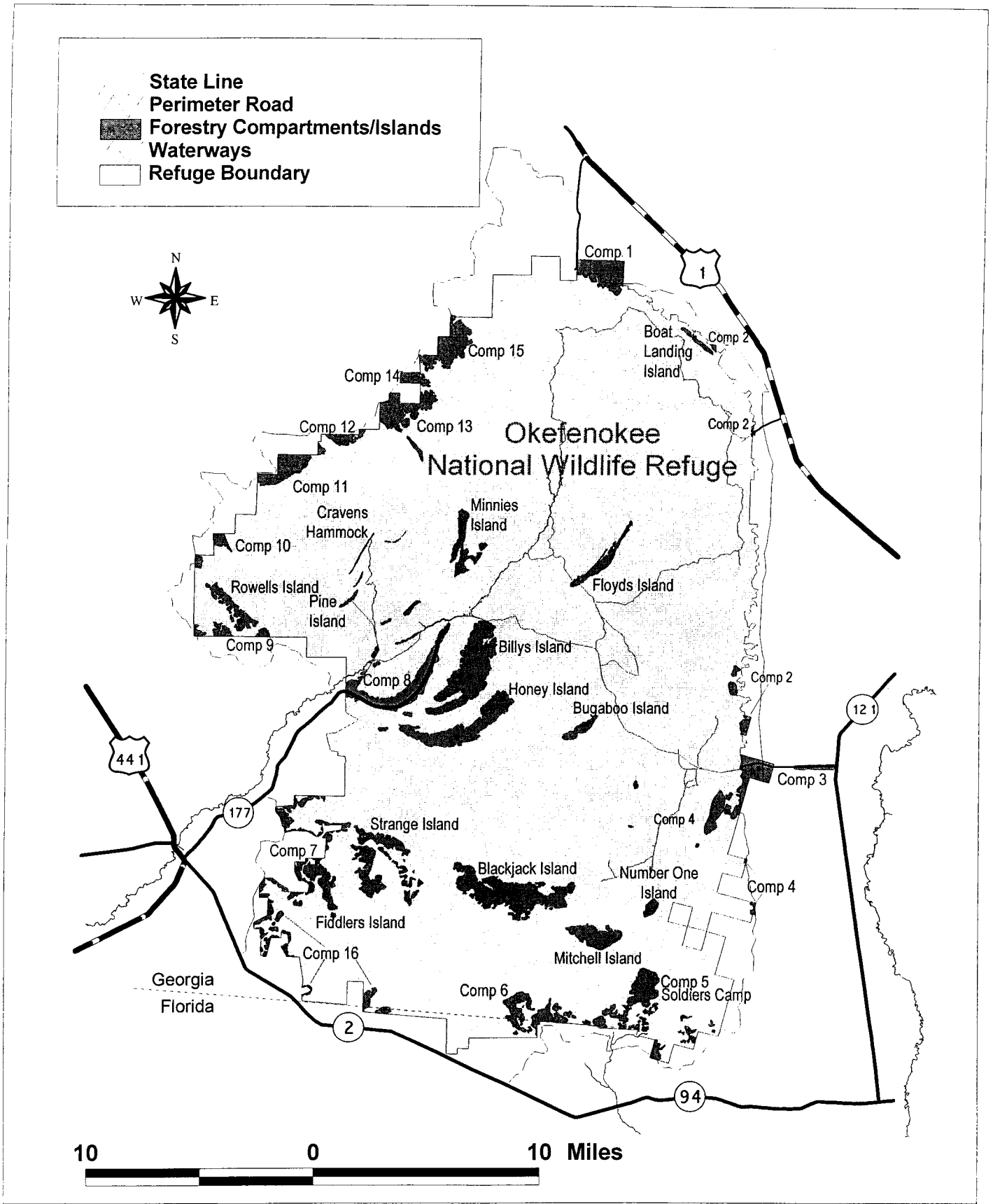

Figure 5. Habitat Management Compartments and Interior Islands.

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 (patch regeneration, shelterwood regeneration, direct seeding, planting of containerized seedlings, and mounding).

Restoration activities for the community understory component have been limited to dormant and growing season fire.

Existing hardwood stands, openings and wetland areas within or adjacent to the longleaf pine community are included in the burn areas 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 to 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 management of longleaf pine communities on wilderness uplands. Fire may be used to thin young forest stands, remove midstory pines and hardwoods, kill invading hardwood understory species, prepare seed beds for regeneration, and kill slash and other unwanted pine seedlings. If used skillfully, fire can accomplish most of these tasks without damage to the fire resistant longleaf seedlings. All distinguishable islands inside refuge boundaries receive periodic dormant or growing season burns. Other management activities conducted on the upland wilderness islands include red-cockaded woodpecker status surveys.

Habitat Management Planning

Okefenokee's forestry and biology staff are working on a new management plan, combining management of uplands, wetlands, hydrology, wildlife and other disciplines into one comprehensive habitat management plan. The draft of the plan is complete. Various units of the plan are undergoing staff review and rewrite. The fire unit is being revised to include Wildland Fire Use as a management option.

Forest Management Prescriptions

- The prescription for Compartment 1 was completed and approved.
- Field work for Compartment 4 was completed, and the prescription was started.
- Field work for Compartment 3 was started.
- Selective thinning was completed on three sites in Compartment 15 to improve RCW habitat.
- Selective thinning along the roads in Compartment 1 was started to facilitate the planned logging operations.

Timber Marking

Timber marking was limited to intermittent marking ahead of the producer harvesting right-of-way trees in Compartment 1. Several cutter select methods of harvesting (row thinning and distance spacing) were used on the Compartment 15 North sale. These cutter select methods can be used in areas that do not require single tree marking, resulting in a drastic reduction in the amount of marking by forestry staff.

Timber Harvesting

Timber harvesting was conducted in Compartments 15 and 1. The timber producer on the Wiregrass Road sale in Compartment 15 was moved to Compartment 1 to assist with road right-of-way improvements. The Break Road timber sale in Compartment 15 sold in late 2002 and harvesting will be completed in 2003. These 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.

Table 10. Forest products receipts for CY 2002.

Special Use Permit #	Permittee	Area	Product	*Value per ton	** Volume Harvested 2002	2002 Receipts
00-052	Pierce Timber Co.	Comp. 15 (completed)	Pine Timber	$8.64 (all)	6,786 tons (2,468 cords)	$58,633
01-059	M&G Logging	Comp.15 Wiregrass Rd.	Pine Timber	$3.64 (pw) $14.55 (cs)	1,565 tons (569 cords)	$17,693
02-037	M&G Logging	Comp. 15 SeldomSeen Rd. (completed)	Pine Timber	$3.64 (pw) $14.55 (cs)	690 tons (251 cords)	$7,702
02-041	M&G Logging	Comp. 1 right-of-way	Pine Timber	$3.64 (all)	1,105 tons (402 cords)	$4,021
TOTALS ALL PERMITS					10,146 tons (3,690 cords)	$88,049

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

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

Table 11. Ten-year forest products removal summary.

CY	ALL TIMBER CATEGORIES (CDS)	POSTS (EA)	TOTAL VALUE DOLLARS
1993	539	2,508	$ 23,336
1994	66	--	$ 3,199
1995	1,486	--	$ 77,559
1996	448	--	$ 23,489
1997	283	--	$2,778
1998	1,356	--	$43,438
1999	2,937	--	$94,619
2000	7,603	--	$290,028
2001	5,001	--	$147,693
2002	3,690	--	$88,049

Figure 5 is an aerial view of a 35 year old slash pine plantation (Compartment 15) where several cutter select methods of harvesting were used. Third-row thinning is shown on the left and distance spacing (25 feet) is shown on the right.

Figure 5. Aerial view of Compartment 15 showing different harvesting methods.

Reforestation

Twenty thousand containerized seedlings were obtained from Meeks Farms in Kite, Georgia. The seedlings were planted in ten sites by the fire crew and Americorps from Charleston, SC. Exact locations are shown in the Compartment atlases. Table 12 summarizes the year's planting efforts.

Table 12. Longleaf pine planting sites for CY 2002.

COMPARTMENT (Or Island)	MGT UNIT	NUMBER OF SEEDLINGS	AREA (Acres)	REMARKS
Compartment 7	5	1002	0.5	Blackjack Bay Complex fire burned area. Replanted w/LLP Seedlings.
Compartment 7	5 5	10,020 5,344	38.0 13.0	Blackjack Bay Complex fire burned area. Replanted w/LLP Seedlings.
Compartment 15	1 1 1 1 1 1 1	300 668 434 668 368 1002 1036	0.3 0.4 0.4 0.5 0.3 0.5 0.8	Patch regeneration/logging deck.

Status of Longleaf Pine Community Restoration

During the past 27 years, over 1,000 acres of longleaf pine have been planted, most of it on poorly drained, difficult to plant sites. The forestry staff has experimented with several methods of planting, including direct seeding, bare root and containerized seedlings. Site preparation has varied from clearing and harrowing to planting on suitable natural raised and individually mounded microsites. Local seed stock from refuge stands has been collected to compare seedling growth with those supplied by vendors. Refuge goals are best accomplished by establishing natural regeneration. Where this is not possible, best survival is obtained by hand planting containerized seedlings. New direct seeding techniques may hold some promise. Native stock is genetically preferable. Minimal site preparation is used to save remnants of fire-dependant understory communities that once existed. Open sites receive prescribed fire prior to planting. Shrub understories are chopped and burned. Heavy shrub sites are burned several times, then strip harrowed or mounded to provide planting beds without totally destroying native ground cover. Prescribed fire is used within two years after planting to reduce understory competition, stimulate native ground cover and unwanted slash pine volunteers.

Significant results from dormant and growing season fire and longleaf pine management are beginning to show. Patches of natural longleaf pine regeneration are appearing throughout the habitat management compartments. Many native longleaf pine community components 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 Okefenokee's forest management compartments without massive clearcutting and planting operations.

Timber Stand Improvement

No timber stand improvement (TSI) was accomplished in 2002. Most of the TSI work completed in forest stands, particularly mid-story hardwood removal in red-cockaded woodpecker foraging stands, is now achieved by growing and dormant season fire.

Swamp Forest

Swamp forest areas include all refuge wetland forest areas inside the swamp's edge and outside the perimeter of the interior islands (Table 13).

Table 13. Forest types within the swamp.

Forest Type	Acres
Broad Leaved Hardwoods	15,424
Cypress	11,831
Scrub Pine	728
Mixed (Bay, Cypress, Pine)	55,359
Scrub Shrub	230,187
Total Swamp Forest	313,529

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

3.f. FIRE MANAGEMENT

Traditional upland communities are valuable to those species of native wildlife adapted to these fire dependent communities. This habitat, including understory fuels, has been drastically altered by changes in the fire regime. Understory fuel loads vary from moderate too extremely heavy and always recover rapidly after fuel reduction fires. Although upland habitats are fire-dependent, fire must be carefully managed to prevent destruction of valuable habitat along with the unnatural rough fuels. Until upland fuel types are restored to presettlement conditions by careful application of fire, mismanaged fire or wildfire may destroy valuable habitat.

Within the swamp fire management is even more complex. Intense fire is desirable; however, under conditions when fire is the most beneficial, control is impossible. During this time, the probability of fire leaving the swamp and negatively impacting adjacent property is more likely to occur. Growing involvement of adjacent landowners in the Greater Okefenokee Association of Landowners (GOAL) has resulted in successful cooperative ventures, such as the Swamps Edge

Break (SEB) the establishment of a series of helicopter dip sites. These features, along with the cooperative spirit of GOAL members, allow greater flexibility in the use of prescribed and wildland fire for natural resource benefit (Fire Use) in the maintenance of upland and wetland habitats with less negative impact on private property.

Prescribed Burning

During the past 31 years, dormant season fire has been used to reduce existing fuels (Figure 6). 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 covers associated with longleaf pine communities. As more acres in forest compartments are converted to growing season prescribed fire, natural wildfires will benefit rather than destroy the habitat.

Figure 6. Prescribed burning around RCW trees.

The winter or dormant season burning by refuge staff was restricted due to dry conditions. The months of March through May brought much lower than normal precipitation creating an early spring/summer fire season. Burning conditions were too severe for growing season prescribed burning. A backlog of proposed growing season prescribed fires already existed. Many of these burning units will have to be shifted back into a dormant season fuels reduction schedule before growing season prescribed fire can be continued.

Benefits of prescribed fire when properly applied are:

- Reduction of understory fuels.
- Conversion of fuel types from southern rough to a more manageable grass/low shrub type.
- Restoration and maintenance of fire dependent understory communities.
- Control of diseases, insects, and parasites.
- Increase of available wildlife habitat.
- Seed bed preparation for natural forest regeneration.
- Improvement of access for forest and wildlife management.
- Enhancement of aesthetic qualities.

During calendar year 2002, hazard reduction and resource objectives were accomplished with 17 burns for a total of 1,570 acres (Table 14). This small number of acres was due to a La Niña weather event and the four-year drought it has caused.

Table 14. CY 2002 Summary and Evaluation Burning Activities.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval	Total Cost	Cost/ Acre	Remarks
C1-1	–	650	0	–	–	–	–	–	Unable to schedule.
C1-2	–	600	0	–	–	–	–	–	Unable to schedule.
C2-1	–	154	0	–	–	–	–	–	Unable to schedule.
C2-2	4493	114	114	03/07/02	G and A	A3	2359.00	20.69	Excellent burn.
C2-3	–	70	0	–	–	–	–	–	Unable to schedule.
C2-5	–	24	0	–	–	–	–	–	Unable to schedule.
C3-4a	4488	120	51	02/11/02	G	A3	1575.00	30.87	Overall good burn.
C3-4b	D001	109	83	12/16/02	G	A3	250.00	3.00	Overall good burn.
C3-5a (FY 2002)	4512	184	28	03/11/02	G	A3	1037.00	37.05	Overall good burn.
C3-5a (FY 2003)	D006	184	46	12/17/02	G	A3	617.00	13.41	Overall good burn.
C3-5b (FY 2003)	D011	184	109	12/16/02	G	A3	897.00	8.22	Overall good burn.
C3-6	–	78	0	–	–	–	–	–	Unable to schedule.
C3-7	–	130	0	–	–	–	–	–	Unable to schedule.
C3-MISC.D	4483	<100	7	01/16/02	G	A3	767.00	109.64	Overall good burn.
C3-MISC.D	4484	<100	50	01/17/02	G	A3	1385.00	27.71	Excellent burn.
C3-MISC.D	4485	<100	3	01/19/02	G	A3	470.00	156.57	Overall good burn.
C3-MISC.D	4486	<100	28	01/23/02	G	A3	611.00	21.83	Excellent burn.
C3-MISC.D	4487	<100	10	01/24/02	G	A3	1051.00	105.15	Excellent burn.
C3-MISC.D	4490	<100	8	02/25/02	G	A3	575.00	71.84	Overall good burn.
C3-MISC.D	D008	<100	3	12/09/02	G	A3	40.00	13.33	Overall good burn.
C3-MISC.G	–	<100	0	–	–	–	–	–	Unable to schedule.
C4-1,2,3	4,491	690	670	03/08/02	G	A3	1,763.00	2.63	Excellent burn.
C5-1	–	379	0	–	–	–	–	–	Unable to schedule.
C5-2	–	438	0	–	–	–	–	–	Unable to schedule.
C5-3	–	248	0	–	–	–	–	–	Unable to schedule.
C5-4	–	118	0	–	–	–	–	–	Unable to schedule.
C5-5	–	114	0	–	–	–	–	–	Unable to schedule.
C6-1	D010	174	174	12/22/02	G	A3	1,718.00	9.87	Excellent burn.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval	Total Cost	Cost/ Acre	Remarks
C7-1	–	240	0	–	–	–	–	–	Unable to schedule.
C7-2	–	179	0	–	–	–	–	–	Unable to schedule.
C7-3	–	252	0	–	–	–	–	–	Unable to schedule.
C7-4	–	379	0	–	–	–	–	–	Unable to schedule.
C7-5	–	355	0	–	–	–	–	–	Unable to schedule.
C7-6	–	241	0	–	–	–	–	–	Unable to schedule.
C7-7	–	200	0	–	–	–	–	–	Unable to schedule.
C8-1	–	328	0	–	–	–	–	–	Unable to schedule.
C8-2	–	272	0	–	–	–	–	–	Unable to schedule.
C8-3	–	417	0	–	–	–	–	–	Unable to schedule.
C8-4	–	327	0	–	–	–	–	–	Unable to schedule.
C8-5	–	460	0	–	–	–	–	–	Unable to schedule.
C8-6	–	100	0	–	–	–	–	–	Unable to schedule.
C9-1	–	74	0	–	–	–	–	–	Unable to schedule.
C9-2	–	195	0	–	–	–	–	–	Unable to schedule.
C9-3	–	120	0	–	–	–	–	–	Unable to schedule.
C10-1	–	214	0	–	–	–	–	–	Unable to schedule.
C10-2	–	102	0	–	–	–	–	–	Unable to schedule.
C11-1	–	295	0	–	–	–	–	–	Unable to schedule.
C11-3	–	242	0	–	–	–	–	–	Unable to schedule.
C11-4	–	122	0	–	–	–	–	–	Unable to schedule.
C12-1	–	291	0	–	–	–	–	–	Unable to schedule.
C13-1	–	126	0	–	–	–	–	–	Unable to schedule.
C13-2	–	580	0	–	–	–	–	–	Unable to schedule.
C13-3	–	236	0	–	–	–	–	–	Unable to schedule.
C13-4	–	225	0	–	–	–	–	–	Unable to schedule.
C14-1	–	230	0	–	–	–	–	–	Unable to schedule.
C15-1 Site Prep	4489	16	16	02/12/02	G	A3	2248.00	140.47	Excellent burn.
C15-2	–	387	0	–	–	–	–	–	Unable to schedule.
C15-3	–	363	0	–	–	–	–	–	Unable to schedule.
C16-1	–	305	0	–	–	–	–	–	Unable to schedule.
C16-2	–	211	0	–	–	–	–	–	Unable to schedule.
C16-3	–	55	0	–	–	–	–	–	Unable to schedule.

Area Burn Unit	Fire No. (DI 1202)	Acres Planned	Acres Burned	Date Burned	Ignition Method	Burn Eval	Total Cost	Cost/ Acre	Remarks
Billys Island	–	3,330	0	–	–	–	–	–	Island was burned by a wildfire prior to scheduled prescribed burn.
Blackjack Is.	–	2,800	0	–	–	–	–	–	Island was burned by a wildfire prior to scheduled prescribed burn.
Boatlanding Island	–	175	0	–	–	–	–	–	Unable to schedule.
Bugaboo Island	–	352	0	–	–	–	–	–	Island was burned by a wildfire prior to scheduled prescribed burn.
Dog Fennel Group	–	152	0	–	–	–	–	–	Unable to schedule.
Ellicots Group	–	176	0	–	–	–	–	–	Unable to schedule.
Floyds Island	–	628	0	–	–	–	–	–	Unable to schedule.
Fowls Roost Island	–	296	0	–	–	–	–	–	Unable to schedule.
Honey Island	–	2,080	0	–	–	–	–	–	Unable to schedule.
Mitchell Island	–	1,070	0	–	–	–	–	–	Island was burned by a wildfire prior to scheduled prescribed burn.
Number One Island	4,492	170	170	03/21/02	A	A3	1,715.00	10.08	Good burn.
TOTALS		24,930	1,570				19,078.00	12.15	

IGNITION METHOD

G - Ignition by ground crews
A - Aerial ignition

BURN EVALUATION

Fire and Resource Management Objectives

1 - Prescribed fire failed to accomplish objectives.
2 - Prescribed fire accomplished objectives in part, but not within prescription limits.
3 - Prescribed fire accomplished objectives within prescription limits.
4 - Prescribed fire accomplished objectives beyond prescription limits.

Allowable Resource Damage Objectives (Crown Scorch, Mortality)

A - Little or no crown scorch.
B - Crown scorch within prescription limits.
C - Crown scorch exceeds prescription limits.
D - Excessive crown scorch - some mortality probable.

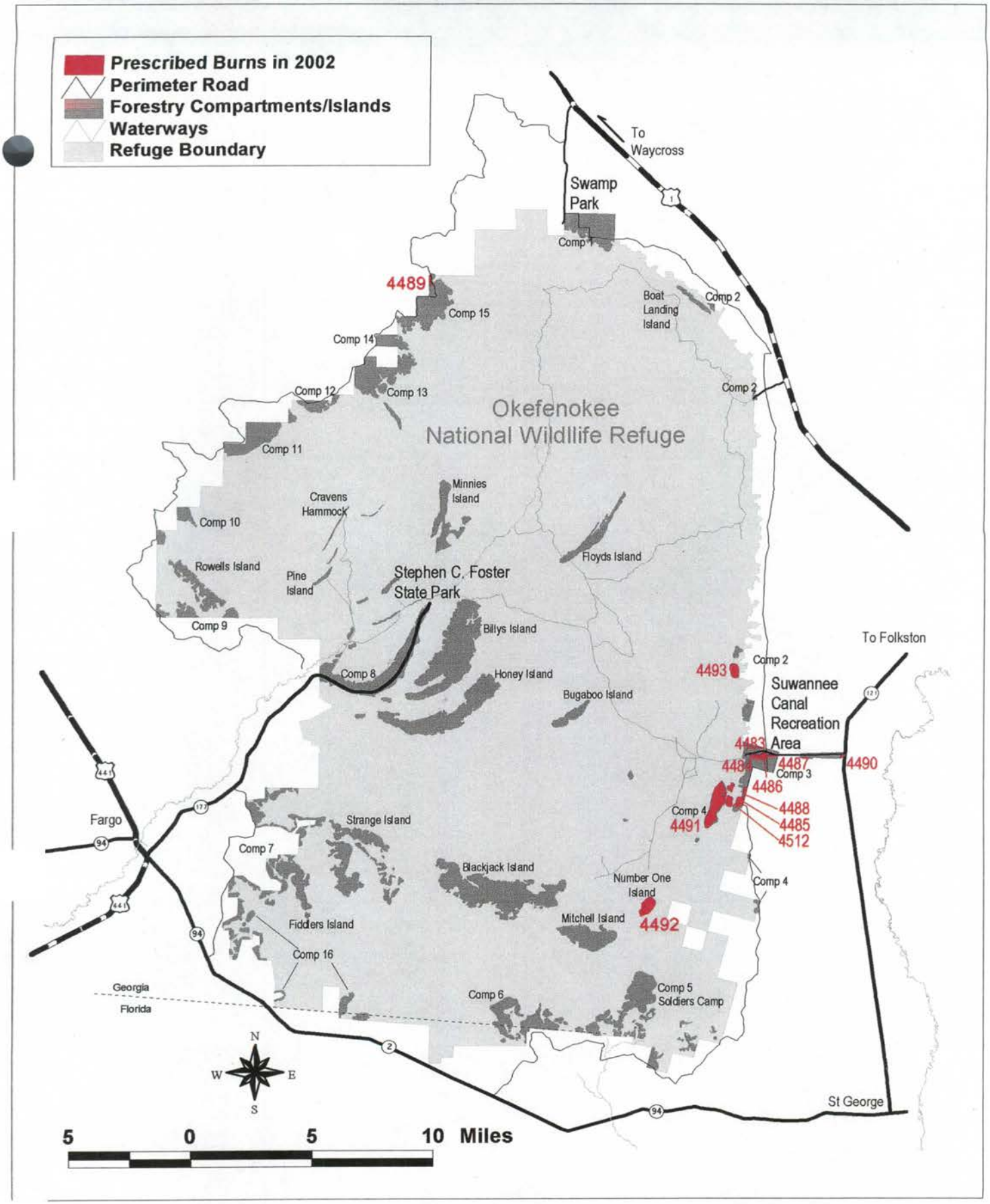

Figure 7. CY 2002 Prescribed fires.

Wildfire

For the fourth summer in a row, below average rainfall resulted in increased fire activity. This year produced three major wildfires totaling 124,110 acres (Figure 8). The smallest of the three, Number One Island fire (Figure 9), started from a prescribed burn, while the two largest fires, the Blackjack 02 (Figure 10) and Baycreek, were started by lightning. These three fires covered almost one-third of the refuge and less than 20 acres outside of the Swamps Edge Break. In December twice the normal monthly rain fell and the forecast is for an El Niño precipitation pattern in 2003. This forecast pattern should allow more prescribed burning and smaller wildfires.

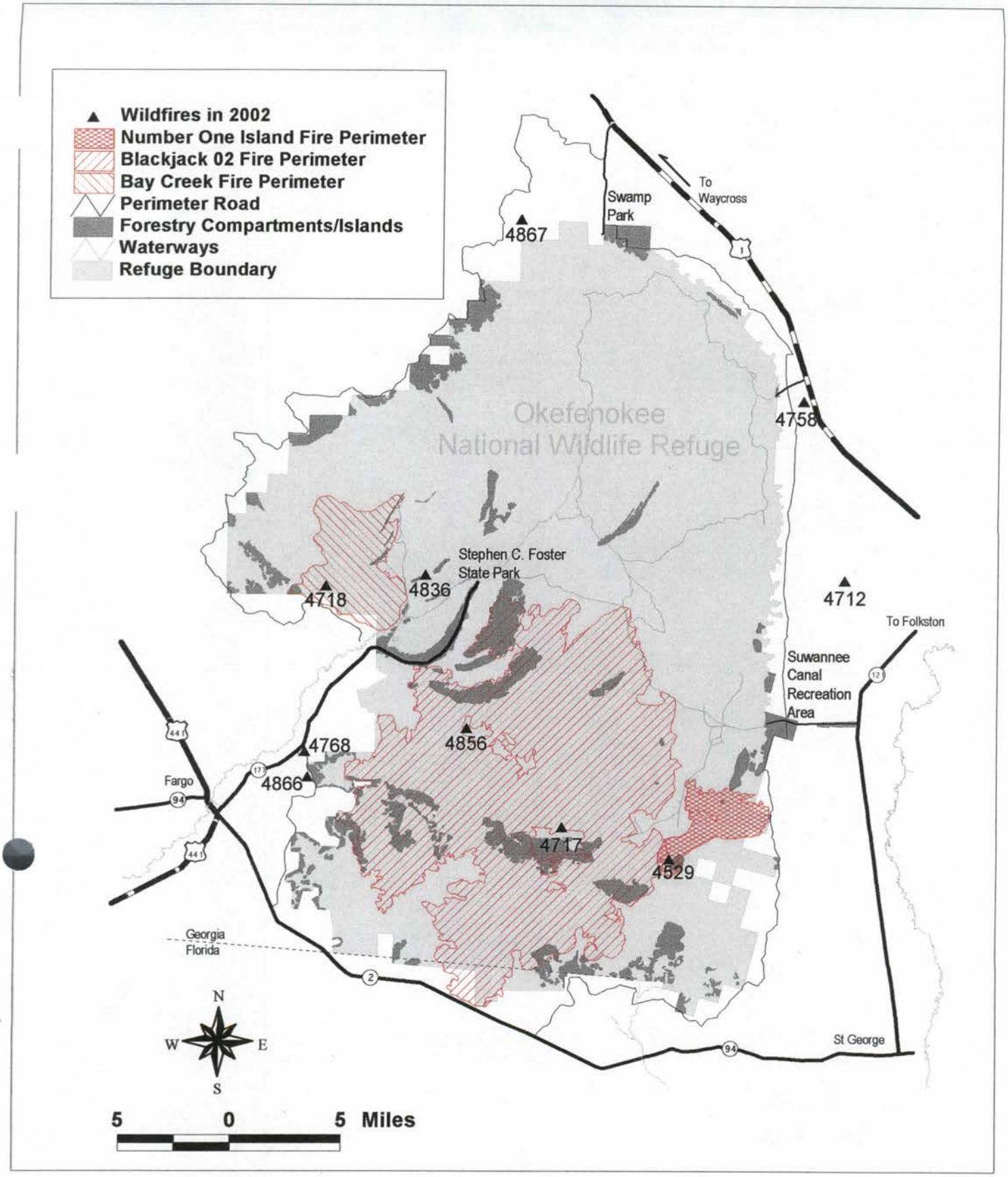

Figure 8. CY 2002 wildfires.

Figure 9. Number One Fire burnout.

Figure 10. The Blackjack02 fire burned more than 5,000 acres from 3:00 p.m. to 9:00 a.m. the next morning.

This year has been one of the most productive in terms of advanced technology development and application. All the planning and preparation resulted in 124,110 acres burning under the appropriate management strategy of containment/surveillance. This management option is approved in the current Fire Management Plan and most closely reflects the Fire for Natural Resource Benefits option found in the Fire Use strategy. The Fire Management Plan is currently under revision to include the Fire Use option.

These 2002 summer fires burned across six wilderness islands and onto five upland forest management compartments. All had approved, current prescribed fire plans. As a result, the refuge and region were allowed to claim 54,000 acres in hazardous fuels reduction accomplishments. Historically, all wildfire acres were excluded from positive fuels reduction accounting. The Fire Use option, when approved, will allow the refuge to showcase the beneficial effects of fire in this fire dependant ecosystem.

Table 15. Wildfires responded to by refuge staff in 2002.

Fire Number	Name	Start Date	Declared Out	Total Acres	Landowner	Location Lat/Long	Cause
4529	Number One Island	03/21/02	09/17/02	5,869	Refuge	39 03.6 082 12.19	Escaped Rx Burn
4712	GA - 1	04/28/02	04/28/02	25	Private	30 50.0 082 05.0	Escaped Rx Burn
4717	Blackjack 02	05/01/02	10/17/02	112,000	Refuge	30 40.08 082 17.37	Lightning
4718	Bay Creek	05/03/02	Ongoing	12,210	Refuge	30 49.3 082 28.3	Lightning
4758	GA - 2 Racepond	05/28/02	05/30/02	116	Private	30 57.0 082 08.5	Railroad
4768	GA - 3 Sweetwater Bridge	06/04/02	06/05/02	.2	Private	30 43.0 082 29.1	Lightning
4866	GA - 4 Sweetwater and Doe Bed Road	06/06/02	06/07/02	.1	Private	30 42.0 082 28.0	Lightning
4836	Snag 07-18	07/18/02	07/19/02	.1	Refuge	30 50.0 082 24.0	Lightning
4856	Snag 07-21	07/21/02	07/22/02	.1	Refuge	30 44.0 082 22.0	Lightning
4867	GA - 5 Big Turnaround	08/07/02	08/10/02	5	Private	31 04.0 082 20.0	Escaped Rx Burn
Totals	10 Starts			130,225.5	5 - Private 5 - Refuge		3 - Escaped Rx Burn 1 - Railroad 6 - Lightning

Off-Refuge Fire / Interagency Assignments

Assignments see Section 9.b.

Swamps Edge Break

The Okefenokee Swamp and surrounding uplands depend upon fire to preserve the conditions and habitats supporting the wildlife species native to the Okefenokee Refuge. The difficulty of keeping prescribed and wildfires within the swamp and refuge boundaries to accomplish desired objectives, presents a difficult and costly fire management challenge.

The Swamps Edge Break (SEB) was completed during 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 our 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 Fish and Wildlife Service and private landowners.

Maintenance and improvements were conducted on all sections of the SEB this summer during wildland fire operations.

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. Five years ago GOAL planned to build and rehabilitate 37 sites, as of 2002, 70 sites have been completed. This one project reflects the dedication of the members of GOAL to work together on projects mutually beneficial to the management of the ecosystem.

Fire Management Planning

The Fire Management Plan is being revised to address the changes in new terminology and to include the management option of Fire for Resource Benefit.

3.g. CONTROL PEST PLANTS

A new trailcutter to be shared with Reelfoot Refuge arrived in January (Figure 12). As water levels began to rise in early March (in an attempt to open canoe trails), the trailcutter was put in the water at Suwannee Canal. By May 23rd, trails to Gannet Lake and through Chase Prairie and Territory Prairie were cut as well as the trail to Bluff Lake from Kingfisher Landing. With decreasing water levels not allowing material to float out of the trails, the peat settled back into the trails and vegetation soon followed, continuing to make the trails hard to navigate. The trailcutter was again put in the water at Suwannee Canal in September as water levels rose. The trails to Gannet Lake and into Chase Prairie were again cut. On October 8th, the trailcutter was launched at Kingfisher Landing. The trail to Dinner Pond was cut prior to the end of the year.

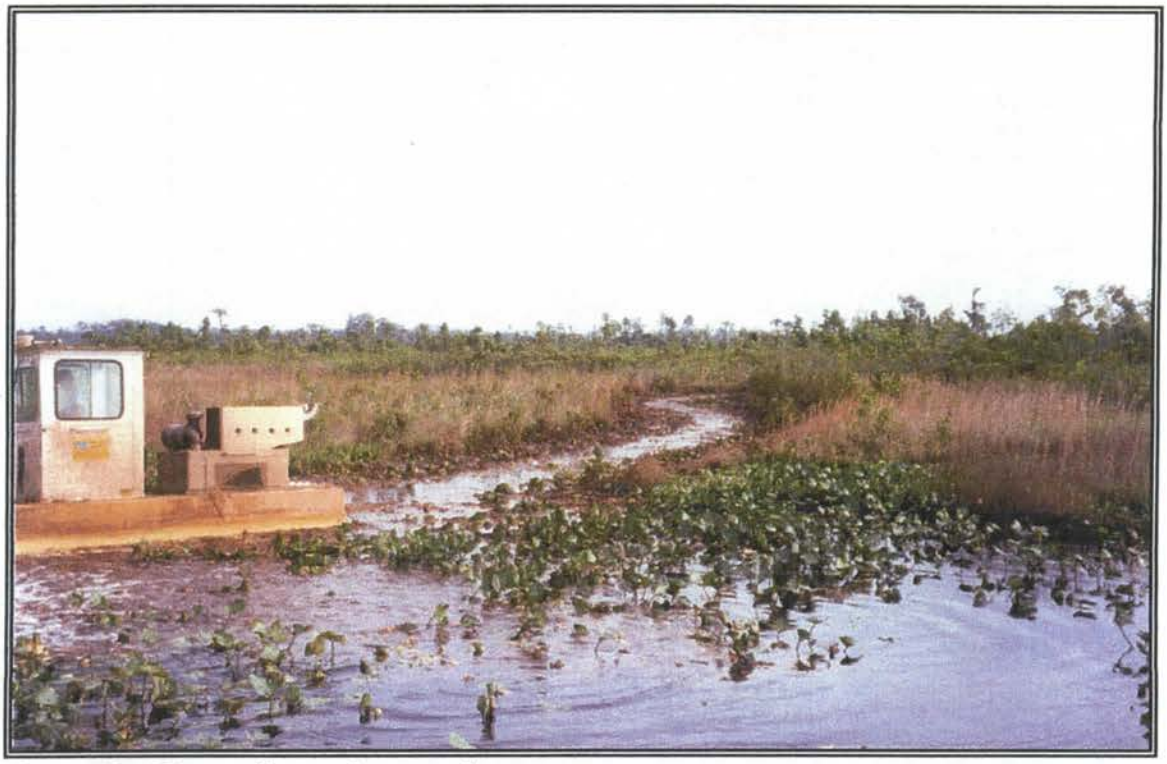

Figure 12. New trailcutter in operation.

Growth of shrubs, greenbrier, and swamp loosestrife along boat and canoe trails is a continuous problem. AmeriCorps groups and volunteers worked along the Orange Trail clearing out fallen trees and the mats of hatpin and swamp loosestrife. The group also cleared leaves from the east trail into Floyds Island and trimmed the trail between Dinner Pond and Big Water Lake. A large mat of grasses has floated into the head between Durdin Prairie and Territory Prairie continuing to make the trail impassable.

Pesticide Use Proposals were submitted for Rodeo, Garlon 3A, Amdro Granular Insecticide, Garlic Barrier, D-Con, Malathion, Recruit II Termite Bait, Orthene and Hydramethlynon Gel. Rodeo is used on mats of maidencane, emergent vegetation, and shrub species adjacent to canoe and boat trails; however, no Rodeo was used in this manner during 2002. Rodeo was only used around refuge and public facilities to eliminate weeds within graveled areas and around buildings. Garlon 3A is only used when it is desirable to kill larger trees to create snags and reduce competition for the establishment of more desirable trees. None was used in 2002. The other pesticides are insecticides used around public facilities and within refuge buildings.

4.

FISH AND WILDLIFE MANAGEMENT

4.a. BIRD BANDING

Refer to section 1.a. for RCW banding information.

4.b. DISEASE MONITORING AND TREATMENT

Concerns about West Nile Virus continue. Charlton County has begun a mosquito control program and sprays the road sides and housing developments. No mosquito spraying is done on the refuge.

4.c. REINTRODUCTIONS

Nothing to Report.

4.d. NEST STRUCTURES

Wood Duck Boxes

No work was done on wood duck boxes in 2002. The boxes on the west side were improved in November 2001. Boy Scout Troop #85 from Lake City, Florida has assisted in maintaining the boxes. With almost 400,000 acres of swamp and plenty of cypress-hardwood areas, it is doubtful that our wood duck box program has much of an impact on productivity. The wood duck box maintenance program serves a purpose in getting the scouts into the swamp, educating them about the ecosystem, and having them actively participate in some type of wildlife management.

Refer to Section 1.a. for installation of RCW inserts.

4.e. PEST, PREDATOR AND EXOTIC ANIMAL CONTROL

Three alligators were relocated from the west side of the refuge during the year. Hogs continue to be taken when the opportunity arises. Thirty were dispatched on the east side, four in Compartment 1, and one in Compartment 15. Pigeons periodically roost around the refuge's shop area and attempts to discourage this behavior continues. Eleven pigeons were dispatched during the year. In addition, one cat was dispatched on the west side of the refuge.

5.

COORDINATION ACTIVITIES

5.a. INTERAGENCY COORDINATION

Over the past year, the Suwannee Basin Interagency Alliance had no formal activities. This forum was initiated to promote communication and coordination among representatives of federal (Natural Resources Conservation Service, U. S. Fish and Wildlife Service, and U. S. Geological Survey), Florida (Suwannee River Water Management District, Department of Environmental Protection, Game and Fresh Water Fish Commission, Department of Agriculture and Consumer Services, and Division of Forestry), and Georgia (Environmental Protection Division, Division of Wildlife Resources, Department of Agriculture, and Forestry Commission) agencies, all working together to develop a comprehensive natural resource management plan for the basin, utilizing the planning process adopted by the State of Georgia.

Combined with the national fire community this summer, GOAL implemented a text book example of a unified command organization to manage the three major wildfires as the Blackjack Bay Complex. GOAL includes two federal and two state agencies, two state forests, two industrial and three private forest landowners, two forest investment companies and numerous individual landowners. The years of planning and cooperation were rewarded by a no lost-time accident record, low cost per acre figures (>70 dollars), and a desire by members to undertake new group projects in the coming years. GOAL hosted the Director of the Fish and Wildlife Service, Chief of the U.S. Forest Service and national/regional staffs of both to showcase the accomplishments of this summer's operations.

5.b. TRIBAL COORDINATION

Nothing to Report.

5.c. PRIVATE LAND ACTIVITIES

Proposed E.I. du Pont de Nemours and Company Titanium Mining Project

In 1994, DuPont proposed a heavy minerals mine on 38,000 acres directly adjacent to the east boundary of Okefenokee National Wildlife Refuge and Wilderness Area (see narratives for the last several years for a complete description). This proposal presented serious threats to the integrity of the swamp and was vigorously opposed by refuge staff, the Service, the Department, the State

of Georgia and environmental groups. Because of this opposition, DuPont placed the project on hold in 1997 and negotiated a no mine agreement with various stakeholder groups. The Service did not participate in these discussions. To date, this agreement has not been funded or implemented; hence, the proposed mine remains on hold and a serious, potential threat to the swamp.

In 2002, the refuge submitted a Pre-Proposal Investigation (PPI) through the North Florida Ecosystem team to the Regional Office requesting a Preliminary Project Proposal (PPP) be developed that would consider potential acquisition of the mine project area. Iluka, an Australia based mining company, began a similar mining project in Brantley County, just north of the refuge. This activity rekindled interest within refuge partners to find a permanent solution to the proposed mine adjacent to the swamp.

Included with the no mine agreement was a proposal to develop an Okefenokee Education and Research Center. In 2001, the State of Georgia appropriated $2 million to fund initial construction of the center. In partnership with the Georgia Wildlife Federation, the City of Folkston acquired ownership of two dilapidated school buildings in Folkston and began the task of renovating the site. Construction of the center is planned to be initiated in 2003. Roger Wangsness was hired by Georgia Wildlife Federation to oversee renovation operations.

5.d. OIL AND GAS ACTIVITIES

Nothing to Report.

5.e. COOPERATIVE/FRIENDS ORGANIZATIONS

Cooperating Association

The Okefenokee Wildlife League (OWL) is a 501(c)(3) nonprofit organization that supports education and research projects at Okefenokee National Wildlife Refuge. OWL provides a part time manager to operate the bookstore, funds special events, and supports the refuge with volunteer assistance.

On January 31, 2002, Okefenokee Wildlife League board member Russell Barber attended the first Friends Group Conference held in Washington, D.C.

Okefenokee Wildlife League continues to demonstrate support for the Centennial of the National Wildlife Refuge System. Members attended events at Pelican Island NWR, J.N. "Ding" Darling NWR, Florida State Fair, Fish-A-Rama and Buck-A-Rama, and Georgia Visitors Centers in Kingsland and Valdosta, GA. The League supported the Congressional Staff Day at Okefenokee last year and this year by providing funds, food, and volunteer support. They also helped develop Centennial Outreach kits for each staffed refuge in the region and supported Okefenokee's Centennial Focus event on October 12th. As the only cooperating association in the state of Georgia, OWL is a vital partner in our Centennial outreach efforts throughout the state.

Table 16. Profits for OWL over the past three years.

	2002	2001	2000
January	$ 1,674	$ 2,051 **	$ 1,646
February	$ 3,546	$ 4,915 **	$ 2,522
March	$ 4,889	$ 8,052	$ 5,335
April	$ 8,982	$ 7,433	$ 5,588
May	$ 5,942	$ 3,219	$ 2,409 *
June	$ 3,193	$ 2,625	$ 1,247 *
July	$ 3,347	$ 3,217	$ 1,794 *
August	$ 1,726	$ 2,075	$ 1,444 *
September	$ 2,021	$ 2,092	$ 1,979 *
October	$ 4,514	$ 3,523	$ 2,316 *
November	$ 3,874	$ 3,134	$ 5,891
December	$ 2,191	$ 2,544	$ 2,602**
Total	$45,899	$44,880	$34,773

* Richard S. Bolt Visitor Center closed for exhibit renovation.
** Swamp Island Drive closed for re-paving project.

6.

RESOURCE PROTECTION

6.a. LAW ENFORCEMENT

No changes in law enforcement staff occurred in 2001, as one full-time officer (Jim Shelton) and three dual-function officers (Shaw Davis, Greg Blanks and Stacey Welch) performed duties on the 400,000 acre refuge. Eighteen Federal cases and ten State/County cases were made this year (Table 17 and 18).

Table 17. Federal cases for CY2002.

Refuge Violations	Number of Cases
Possession of a firearm on a NWR	5
Trespassing on a NWR	3
Harassing Wildlife	2
Violation of a refuge hunting regulation	1
Operating a motor vehicle in excess of speed limit	1
Possession of a dog on the waters of the refuge	1
Hunting black bear on the refuge	1
Hunting over bait on a NWR	1
Off-road vehicle use in a closed area	1
Fishing on a NWR without a State License	1
Boating in a closed area	1
Total	18

Figure 18. Violations written by Georgia Department of Natural Resources Officers and County Sheriff Departments.

Violations	Number of Cases
Fishing without a valid fishing license	4
No PFD on board	2
Invalid boat registration	2
Possession of Cannabis less than 1 oz	2
Total	10

Forty incident reports were written by refuge officers, ranging from simple trespass to illegal taking of alligators. Refuge Officer Shelton, while patrolling a remote section of boundary before the Georgia state bear season, discovered a baited site complete with hunting stand on the refuge. The bait consisted of whole corn, chocolate, sugar coated pecans and nuts. Bait samples were taken as well as photographs of the area. On the opening day of bear season, Refuge Officers Shelton and Blanks apprehended a subject with a firearm on the refuge over the baited area. The subject was cited for hunting black bear on the refuge, hunting and placement of bait, and possession of a firearm on a National Wildlife Refuge. The subject later pled guilty to all charges and paid $1300.00 in fines. During the quota deer hunt held on the Swamp Island Drive, a subject was apprehended hunting from a lawn chair in the back of his pick-up truck while it was in motion. The two big annual law enforcement operations we normally have on the refuge were not held this year due to low water levels and most of the boat trails being closed. Officer Shelton was detailed to assist with Homeland Security in February of this year.

During 2002, a wireless video monitoring security system was purchased for the administrative building. The system includes two inside video cameras covering the front and rear entrances into the building. These video cameras transmit video through a 24-hour realtime VCR and processor to two monitors located in the building. An alarm system was also installed in the Visitor Center.

Refuge Officer Receives Award

Law Enforcement Officer Jim Shelton was announced as the James A. Clark Southeast Region Refuge Law Enforcement Award recipient during a ceremony in New Orleans, Louisiana. Recipients are chosen based on performance, conduct, commitment, contribution to the enhancement of resource law enforcement, the law enforcement profession, and the image of the U.S. Fish and Wildlife Service. Regional Director Sam Hamilton gives the final approval for the award recipient. Officer Shelton was presented a plaque and letter of commendation for the year 2002 Award.

6.b. WILDFIRE PREPAREDNESS

See Section 3.f.

6.c. PERMITS AND ECONOMIC USES MANAGEMENT

See Section 1.b.

6.d. CONTAMINANT CLEANUP

Nothing to Report.

6.e. MANAGE WATER RIGHTS

Nothing to Report.

6.f. MANAGE CULTURAL RESOURCES

On August 12, Ken Quintana and engineers from Merrick and Company conducted a historic facility assessment survey. This survey included Hebard Cabin on Floyds Island, John Hopkins Cabin and Chesser Island Homestead.

6.g. FEDERAL FACILITY COMPLIANCE ACT

Nothing to Report.

6.h. LAND ACQUISITION

A Preliminary Project Investigation on Trail Ridge property, adjacent to the east side of the refuge, was submitted to the regional office. This land is the property where DuPont holds interests in titanium mining.

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6.i. WILDERNESS AND NATURAL AREAS

Discussions on minimum tools used within the Okefenokee Wilderness Area continued throughout the year. A "Go-Devil" was tested to travel to and from the trailcutter. In the past, an airboat was used for this purpose. Trail maintenance tools are also being evaluated. The refuge's use of equipment is being evaluated through the Comprehensive Conservation Planning process.

6.j. THREATS AND CONFLICTS

See Section 5.c.

7.

ALASKA ONLY

8.

PUBLIC EDUCATION AND RECREATION

8.a. PROVIDE VISITOR SERVICES

Visitor Service Highlights

Instead of a year "Under Construction" as in 2001, this year the refuge spent a good portion of the year "Under Fire" as natural fires burned more than 124,000 acres of swamp habitat from February through June. The five-year drought experienced in the Southeast all but dried up boat trails and made swamp travel very difficult and even impassible at times. Visitation was noticeably affected by the fires and drought. When not working on fire related matters, interpretive staff were reviewing plans for the future development of the Visitor Center picnic area and the re-paving of the East Entrance parking lot through a Federal program administered by the Federal Highway Administration.

Visitor Use Statistics

Visitors continue to come to Okefenokee NWR from all 50 states and over 35 countries. Despite dry weather and low water conditions (guided boat tours were discontinued for a short time and canoe trails were limited), visitors took advantage of other recreational opportunities at Okefenokee NWR during 2002 (Table 19, 20, and 21).

Table 19. Visitation by entrance.

Entrance	2002	2001	2000	1999	1998
East	111,439	113,463	84,471	102,950	127,501
West	147,312	164,430	93,177	96,296	127,758
North	61,019	71,543	64,724	74,173	74,062
Total	319,770	349,436	242,372	273,419	329,321

Table 20. Day-use.

Trail	Number of Visits
Homestead Trail	1,287
Deerstand Trail	3,027
Boardwalk ("Swamp Walk")	24,276
Upland Discovery Trail	3,774
Canal Diggers Trail	3,024
Swamp Island Drive (auto tour)	75,429

Table 21. Visits to Interpretive Exhibits.

	2002	2001
Richard S. Bolt Visitor Center	41,916	34,919
Chesser Island Homestead	20,803	24,089

Public Use Facility Improvements

- AmeriCorps and volunteers re-established the old overgrown airboat trail. This trail gives canoeists an opportunity to get away from motor boats.
- Refuge volunteers continue to help trim boat, canoe, and hiking trails. Boat trails are currently being maintained by a new trailcutter.
- Minnie's Lake day use shelter was re-decked.
- Final changes to the Richard S. Bolt Visitor Center were completed. The restrooms were completely renovated resulting in more accessible, brighter, more user-friendly facilities.

Policy Changes

Nothing to Report.

Entrance Fees

Staff at the West Entrance (Stephen Foster State Park) and the East Entrance concession (Okefenokee Adventures) collect entrance fees for the refuge. In addition, the entrance fee program was expanded in 2000 to include the Suwannee River Sill and Kingfisher Landing. At both unstaffed areas, visitors are required to either go to a staffed location, or they have the option of purchasing by mail (hopefully the use of credit cards will become available and we can offer items on the internet) a weekly or annual pass. Both are remote areas; neither are secure

enough to locate a self-service fee station.

Fee booth operation at the East Entrance is staggered to meet projected demand throughout the year. Refuge staff and Okefenokee Adventures agreed to modify fee booth hours during the fall and winter to better manage Okefenokee Adventures' staff time. Staff and Okefenokee Adventures are evaluating the success of the program and adjusting to meet both needs.

Guiding

Because of the confusion between commercial and non-commercial guiding on the refuge, the policy now simply refers to "guiding." Any organization that charges fees to people for tours of the refuge, whether businesses or non-profit organizations, must abide by the refuge policy. There have been minimal problems with implementation of the policy.

Wilderness Canoe Program

A new computer program was purchased and installed to facilitate canoe reservations. The program eliminates the large manual desk chart and requires less time spent on typing names and addresses for mailing permits. Staff continue to monitor and adjust the system as needed.

Interpretation

Staff provided several different programs and orientations during 2002, including programs for Elderhostel groups, WWII veterans, Boy Scouts, 4-H Club, Cub Scouts, day cares, Jacksonville Naval Air Station, YMCA, church groups, primary and secondary school groups, college classes, and Florida and Connecticut Audubon Societies. Staff and volunteers spent time roving on hiking trails and providing interpretation at the Chesser Island Homestead as well as Coffee Bay Day Use Canoe Shelter.

Evening Owl Prowls began again this spring. A formal presentation was developed by staff and volunteers in the fall. Owl Prowls are currently held the second Saturday of each month beginning in November and ending in May.

Refuge Ranger Sallie Gentry and Gracie Gooch planned and implemented a two-day workshop on customer service/safety/interpretation/environmental education for volunteers. The first day included presentations by an Okefenokee Technical College instructor, Ranger Gentry, and Collateral Law Enforcement Officer Greg Blanks. On Saturday, volunteers received two-hour class instruction followed by in-the-field training for the remainder of the day.

Environmental Education

Refuge Ranger Sallie Gentry developed several EE programs meeting Georgia's Quality Core Curriculum. Many school groups took advantage of these opportunities (Figure 12). Public Use staff continue to work closely with Okefenokee Adventures in planning, developing, and

implementing quality educational programs. Ranger Gentry hosted a teacher workshop at the Visitor Center for Armstrong Atlantic University educators on July 9, with topics covering the swamp habitats and associated flora and fauna plus environmental education opportunities.

Figure 12. Volunteer's Erby and Marianne Dobbs assisted with an environmental education program at the Chesser Island Homestead.

Environmental Education conducted by refuge staff CY 2002.

	Visits	Activity Hours
Students	2818	11,272
Teacher	903	3,612

Coordination with the Georgia Wildlife Federation's Okefenokee Education and Research Center (OERC) was stepped up this year as a result of the start of construction on the renovation of the old school buildings in Folkston. Renovation of the first building is scheduled for completion in 2003.

On-site Special Events

Wings Over the Swamp

On February 10, over 600 visits were registered in celebration of "Wings Over The Swamp." Participants enjoyed programs that included a live raptor show by Georgia Southern Raptor Rehabilitation Center, singing by Bethune Elementary's Live Wire Choir, bird programs, nature photography workshops, youth activities, hourly prize drawings, and special boat tours (Figure 13). In addition, the Audubon Society officials honored the refuge as an Important Bird Area in a special ceremony held that morning.

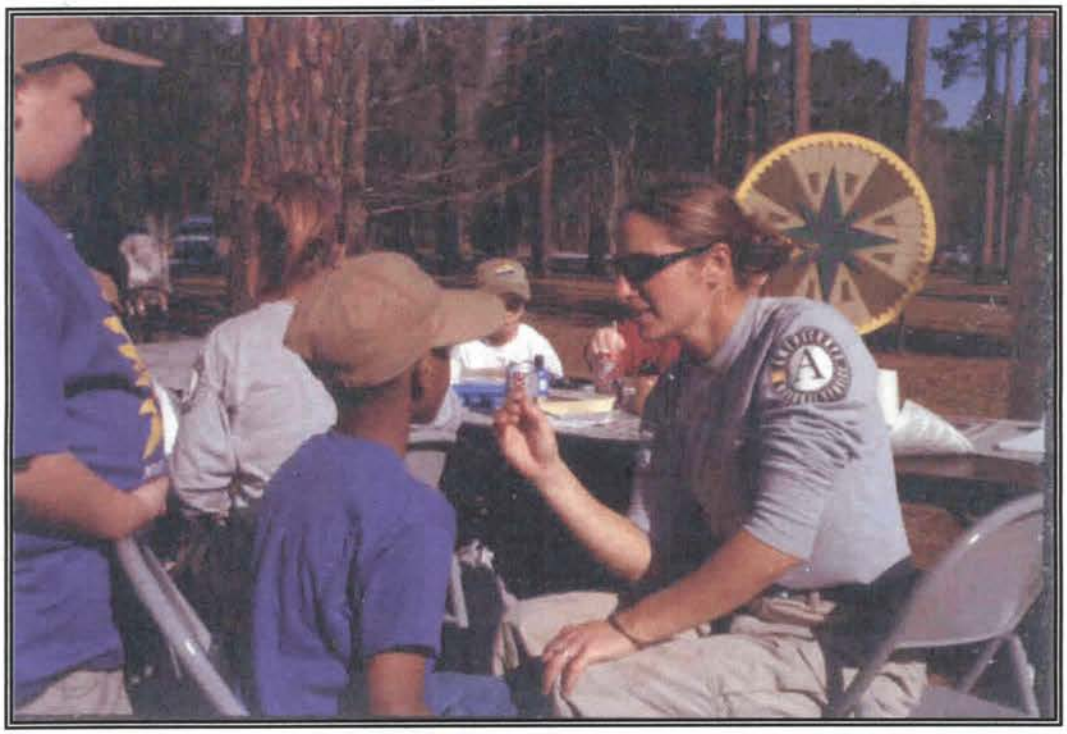

Figure 13. AmeriCorps member paints visitor faces for "Wings Over the Swamp."

National Wildlife Week/Earth Day

The refuge marked the occasion with an early morning litter pick-up involving 26 refuge staff, volunteers, AmeriCorps members, and local Boy Scouts. Over 130 bags of litter were collected along a two-mile stretch of highway at the refuge entrance road. Georgia Department of Transportation provided supplies. The local Sheriff's department assisted with traffic control. After refreshments, scouts planted over 150 longleaf pine seedlings at the Deer Stand Field off Swamp Island Drive. The refuge presented them with a specially-designed patch for their hard work. An art contest was conducted among local schools in conjunction with these activities.

Working from the theme "Nature in Our Neighborhood", 126 students from grades 2nd through 5th entered art work. Charlton County Public Library displayed all submitted art work. Winning entries were displayed at the refuge booth during the annual "Relay for Life" cancer drive in Folkston.

International Migratory Bird Day

An early morning bird walk led by local naturalist Sheila Willis brought out six participants. Twenty-four bird species were seen or heard. An evening Owl Prowl was cancelled due to low enrollment. Several people called during the day to verify if the refuge was open, probably due to the ongoing Blackjack Island fire. A display was set up in the Visitor Center with multiple hand-outs about birds, backyard habitats, and other related information. Posters and booklets were handed out to visitors during the day.

National Fishing Week

The refuge decided to hold this year's fishing week event at Banks Lake National Wildlife Refuge. Refer to the annual narrative for Banks Lake for more information about the event.

National Wildlife Refuge Week/Okefenokee Festival

The Refuge System drew center stage on October 12th the Okefenokee NWR hosted a National Wildlife Refuge System Centennial Focus Event. Eleven refuges from Georgia and Florida hosted booths in Folkston during the annual Okefenokee Festival. Staff and volunteers designed a "first-place" float with the theme "A Night in the Swamp". A Teddy Roosevelt impersonator served as Grand Marshall during the parade, as well as visiting local schools on Friday. Local personality Okefenokee Joe provided center stage entertainment. The Visitor Center backyard habitat began to take shape with congressional staff representatives putting out plants in the lawn area (Figure 14). The Chesser Island Homestead buzzed with activity. Over 600 people enjoyed shape note singing, storytelling, folk music, games, and crafts such as butter churning, basket weaving, palmetto broom making, and woodstove cooking. Over 60 volunteers and many staff personnel worked extra hard to make everything a huge success!

Refuge staff were presented with a Unit Award for Excellence of Service by Director Steve Williams during National Wildlife Refuge Week (Figure 15). The citation was presented for exceptional preparation, cooperation, and teamwork exhibited during wildland fires in 2002. Williams was accompanied by Regional Director Sam Hamilton and Regional Chief of Refuges Jon Andrew. The group met with refuge staff, the Greater Okefenokee Association of Landowners, and state forestry officials to discuss fire management success between the landowners and the government organizations. An aerial tour of the refuge provided an opportunity for the officials to view first-hand the success from these management strategies used during and following the fires.

Figure 14. "Teddy Roosevelt" and Congressional Staffers assist with planting the new Backyard Habitat at the Visitor Center.

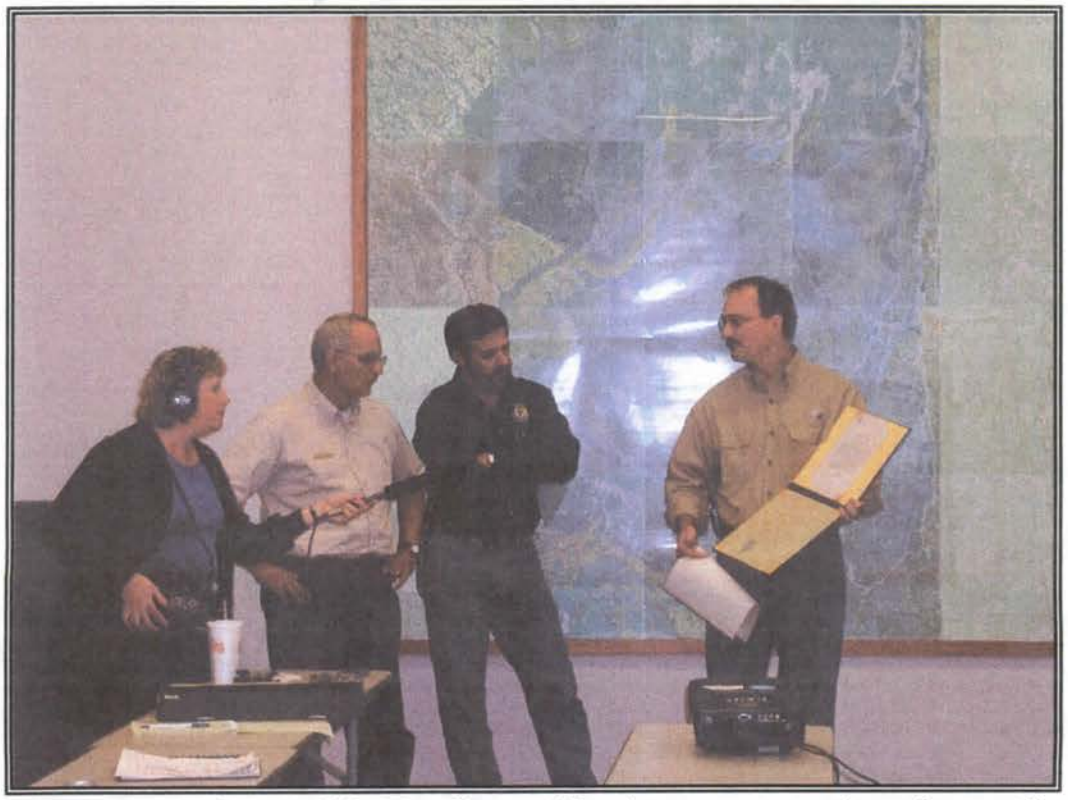

Figure 15. A Unit Award for Excellence of Service was presented to refuge staff.

Special Counsel, Ann Klee Visits Refuge

Okefenokee Wildlife League (OWL), cooperating association for the refuge, sponsored a visit to the swamp by Ann Klee (Figure 16), Special Counsel to Interior Secretary Gale Norton, and Jon Andrew, Southeast Regional Chief of the National Wildlife Refuge System, on November 20th through 22nd. A welcoming reception and orientation were held at the Visitor Center. A special canvas tote with the "Kissing Duck" logo was filled with items from the OWL bookstore and provided to Klee. Okefenokee Adventures owners Chip and Joy Campbell, along with Refuge Biologist Sara Aicher and Refuge Ranger Sallie Gentry, guided the guests to Round Top shelter on an overnight canoe trip into the wilderness area.

Figure 16. Ann Klee enjoyed a visit to the Okefenokee NWR courtesy of OWL, the refuge cooperating association

Chesser Island Christmas

Over 100 visitors came out to experience the Christmas program. Singing by volunteer Les Daniels, accompanied by Ann Kasbohm on guitar, got everyone in the holiday spirit. Cookies, hot apple cider, coffee, and hot chocolate were enjoyed by all. Traditional holiday decorations adorned the homestead, while luminaries lined the path to the Homestead. Visitors enjoyed a hay ride around the Chesser Island loop. Staff, volunteers, and AmeriCorps members all pitched in to make the evening special.

Hunting

Georgia DNR Ranger Mike Brooks presented two Hunter Education courses to 65 students at Okefenokee NWR.

The annual quota hunt at Suwannee Canal Recreation Area was held on October 25th and 26th. A total of 32 people participated in the two-day hunt and ten deer were harvested.

The Cowhouse Unit was open in conjunction with the adjacent Dixon Memorial Wildlife Management Area. Deer, small game (rabbit, quail, squirrel) and turkey were hunted in compliance with state regulations and season.

The Pocket Unit was opened this year to archery only hunting from September 14th - October 18th. Hunters were required to register daily. There were 502 hunter visits counted on the sign in/out sheet. Deer harvested totaled nineteen including ten bucks and nine does.

Fishing

Low water levels restricted access and reduced fishing opportunities in the swamp during 2002. On-refuge anglers.

	2002	2001	2000
East Entrance	96	1,259	656
West Entrance	2,871	3,179	2,423
Kingfisher Landing	367	579	562
Suwannee River Sill	274	699	2,712
TOTAL	3,608	5,716	6,353

Camping

Tent, RV, and cabin camping are available at the West Entrance (Stephen C. Foster State Park).

Campers at Stephen C. Foster State Park.

	Number of Visits	Activity Hours
Tent/RV Campers	4,875	39,000
Cabin Users	2,007	16,056

Concessions

Each of the three refuge entrances offer concession services: boat and canoe rentals, boat tours, food service, and other services. The North Entrance (Okefenokee Swamp Park) contract was renewed in 1999 through 2008.

The West Entrance (Stephen C. Foster State Park) is operated by the Georgia Department of Natural Resources. Newly appointed State Park Superintendent Joe Yeager was almost immediately indoctrinated with wildland fire issues as the State Park was closed for several weeks while the Blackjack/Bay Complex fire threatened to burn across the Pocket.

Okefenokee Adventures celebrated their second year of operation in September 2002. Refuge staff inspect the operation monthly and continue to meet with the owners regularly. Tour audits were conducted and most guides work well with the public. Most major issues have been resolved and communication remains good. Okefenokee Adventures has been able to employ and retain several high-quality employees. Focus in 2003 will be on improving the quality of boat tours and working with Okefenokee Adventures to address visitation during off-peak seasons.

8.b. OUTREACH

Partnerships

International Paper Company

The refuge entered into a Memorandum of Understanding to provide an interpretive trail and appropriate habitat buffering along the East Entrance access road. The trail, which linked the existing Canal Diggers trail with the Phernetton Longleaf trail, incorporates use of refuge and International Paper Company property. International Paper has also contracted through the Okefenokee Wildlife League for the provision of interpretive kiosks and trailhead signing. The trail has already been marked, brushed, and is now open for daily use. A Grand Opening ceremony is anticipated during 2003.

Banrock Station Winery

As a result of a fall visit and tour set up through the Okefenokee Wildlife League, this Australian Winery has expressed a desire to enter into and fund a wetland-related refuge project. More progress is anticipated during 2003.

Local Community Outreach

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

Chinese Wetland Experts Visit

Wetland experts from China's State Forestry Administration visited the refuge on November 9th as part of an exchange program with the U.S. Fish and Wildlife Service. Refuge staff provided an orientation to wetland management and public education. After touring the visitor center and Chesser Island Homestead, the delegation explored the swamp ecosystem by boat with cooperating partner Okefenokee Adventures and refuge staff.

Fire Outreach

The 2002 fire season was active with three major fires at Okefenokee NWR. The three fires were administratively combined and named the Blackjack/Bay Complex (see Figures 9 and 10). The fires effectively surface burned 124,110 acres of the southern portion of the refuge. The fire threat temporarily closed the West Entrance at Stephen C. Foster State Park and threatened facilities on Chessers Island. Outreach efforts were complex and time consuming. The fire lasted long enough to transition through three professional Fire Use Management Teams. Numerous Fire Information Officers coordinated outreach efforts with the local, regional and national media. Major efforts were made to inform towns and cities down wind of the fire's smoke column. Cities experiencing smoke as a result of the Blackjack Complex Fire included Dothan, Alabama; Columbia, South Carolina; Perry, Florida; and Jacksonville, Florida. Extensive efforts were made to inform all Federal, state, and local officials of current status and issues with the future management of the fire. A huge amount of staff time was spent monitoring and correcting the "rumor mill" about the fire threats to the local Davis Community and the Sanderson-Baxter, Florida communities.

The refuge hosted a group of Fire Management visitors on June 7th representing the U.S. Forest Service, New Zealand, and Australia. Refuge staff provided orientation and briefings on management practices, firefighting methods, and partnerships with GOAL. The group, hosted by the U.S. Forest Service, met with the Fire Use Management Team and were then escorted through refuge facilities.

North Florida Ecosystem Outreach

Volunteers Jack and Sally Webb and Refuge Ranger Sallie Gentry staffed a refuge booth at the annual Pelican Island birthday celebration held March 10th. The Webbs also helped staff a booth at the Florida State Fair.

Other Outreach Initiatives

Supervisory Refuge Ranger Jim Burkhart and volunteers staffed refuge exhibits at Kingsland and Valdosta Visitor Centers on I-95 and I-75.

Refuge employees and volunteers helped setup and staff a Fish and Wildlife Service booth at the Georgia National Fair the second week in October.

Refuge employees and volunteers also setup and staffed exhibits at the Buck-A-Rama and Fish-A-Rama events in Atlanta and Perry, GA.

Volunteers continue to be active in the local elementary school Read-A-Loud program.

Georgia Nature-Based Tourism Association

Supervisory Refuge Ranger Jim Burkhart continues to be active with the Georgia Nature-Based Tourism Association, an organization of outfitters, campground owners, and other stakeholders.

Media Contacts/Events

Media contact continues to be important for refuge events and issues. Staff were interviewed for several films, documentaries, and media outlets throughout the year. Several news stories on topics ranging from fire to volunteers were completed.

Web Page

Gracie Gooch and Sallie Gentry work together on the refuge homepage and update the web page for the refuge. The Okefenokee Wildlife League maintains a separate web site.

Off-refuge Special Events/Community Events

Okefenokee Fair

Okefenokee Swamp Park represented the three refuge entrances at the Okefenokee Regional Fair in Waycross, Georgia this year. Their booth was centered around a new Christmas light show developed along the train ride available at the Park. They garnered yet another first place honor for their efforts!

Relay for Life

Once again, Refuge Ranger Gracie Gooch captained the Okefenokee Relay for Life team, a community effort to raise money for the American Cancer Society. The event requires teams to field at least nine people to walk for 14 hours, beginning at 7:00 p.m. (One person from the team must be on the track at all times.) Over 50 refuge staff members, volunteers, and AmeriCorps participated in the event which also included a cookout (Figure 17). Winners from the National Wildlife Week Art Contest conducted by the refuge were displayed at the evening's event.

Figure 17. AmeriCorps assisted with the annual "Relay for Life" event.

Kiwanis Family Festival

The local Kiwanis Family Festival continues to grow in popularity. Held on January 26, the festival offers parenting workshops, dance and martial arts demonstrations, programs for kids, and community information. The Refuge staffed a table top exhibit with brochures, coloring books, pencils, crayons, and bumper stickers. Three AmeriCorps members and a volunteer did face painting for the event.

9.

PLANNING AND ADMINISTRATION

9.a. COMPREHENSIVE MANAGEMENT PLANNING

The primary emphasis of the Comprehensive Conservation Planning effort in 2001 was public scoping. In 2002, the core planning team that includes the refuge management staff, a private consultant, Georgia Wildlife Federation, Georgia Department of Natural Resources, Georgia State Parks and Historic Sites, and Osceola National Forest met once to finalize the alternatives and move on towards goals and objectives. Changes in the acquisition boundary were also discussed.

A briefing on the alternatives was conducted for Regional Chief of Refuges Jon Andrew and the regional office planning staff in October.

Due to wildfires, staff vacancies, and other priorities, very little writing was done on the plan during the year. Program staff are working on the step down plans. Byron Bonney, under contract, wrote a Fire Use Plan for Okefenokee NWR. Maps and final corrections still are needed on this plan that will be part of the Habitat Step Down Plan.

9.b. GENERAL ADMINISTRATION

Table 27. A five-year comparison of Okefenokee's current staffing pattern.

	Full-time	Career-Seasonal Firefighters	Temporary	Firefighters
FY 2002	26	5 (3.55 FTE)	0	0
FY 2001	27	5 (3.55 FTE)	0	0
FY 2000	28	5 (3.55 FTE)	1	0
FY 1999	28	5 (3.55 FTE)	1	0
FY 1998	28	5 (3.55 FTE)	0	0

Personnel

Permanent Staff

1. M. Skippy Reeves (EOD 02/21/93) — Refuge Manager (GS 14, PFT)
2. W. Shaw Davis (EOD 04/10/97) — Deputy Refuge Manager (GS 13, PFT)
3. Dartha P. Campbell (EOD 12/06/76) — Administrative Officer (GS 9, PFT)
4. Beverly A. Derouin (EOD 03/05/95) — Office Automation Asst. (GS 5, PFT)
5. Judy L. Drury (EOD 04/11/88) — Office Automation Clerk (GS 4, PFT)
6. Sara Brown Aicher (EOD 03/10/91) — Biologist (GS 12, PFT)
7. Cynthia Thompson (EOD 06/13/94) — Wildlife Biologist (GS 9, PFT)
   Transferred to Osceola NF, Olustee FL
8. James N. Shelton (EOD 07/05/87) — Park Ranger (Refuge) (LE) (GS 9, PFT)
9. James A. Burkhart (EOD 06/11/78) — Sup. Refuge Ranger (GS 12, PFT)
10. Margaret S. O'Connell (EOD 05/14/95) — Refuge Ranger (GS 11, PFT)
    Transferred to Bosque del Apache NWR, Socorro, NM
11. Gracie A. Gooch (EOD 05/29/84) — Park Guide (GS 5, PFT)
12. Dawn M. Zirrillo (EOD 06/03/01) — Park Ranger (GS 5, PFT)
    Transferred to Lacassine NWR, Lake Arthur LA
13. Sallie D. Gentry (EOD 07/15/01) — Refuge Ranger (GS 7, PFT)
14. Everette Sikes (EOD 03/15/87) — Motor Vehicle Operator (WG 7, PFT)
15. Stiner Jones (EOD 09/19/83) — Maintenance Worker (WG 6, PFT)
16. Frederick E. Wetzel (EOD 05/03/92) — Forester/FMO (GS 12, PFT)
17. Michael W. Housh (EOD 06/16/02) — Supervisory Forester/FMO GS 11, PFT)
    Transferred to Carolina Sandhills NWR, McBee SC
18. Howard McCullough (EOD 01/05/87) — Forestry Technician (GS 8, PFT)
19. Reggie Forcine (EOD 07/23/95) — Forestry Technician (GS 7, PFT)
20. Richard B. Boatright (EOD 01/05/97) — Office Auto. Assist./Dispatcher (GS 5, PFT)
21. Douglas E. Nuss (EOD 01/16/77) — Sup. Engineering Equip. Oper. (WS 10, PFT)
22. Tony R. Gooch (EOD 08/18/80) — Automotive Worker (WG 8, PFT)
23. Gregory S. Blanks (EOD 04/02/95) — Engineering Equip. Oper. (WG 8, PFT)
24. Rockwell M. Chesser (EOD 06/23/96) — Engineering Equip. Oper. (WG 8, PFT)
25. Stacey A. Welch (EOD 07/23/95) — Engineering Equip. Oper. (WG 8, PFT)
26. William E. Sikes (EOD 05/24/98) — Lead Forestry Technician (GS 6, PPT)
27. Cory R. Bryant (EOD 06/03/01) — Forestry Technician (GS 5, PPT)
28. Raymond E. Beacom (EOD 06/03/01) — Forestry Technician (GS 5, PPT)
29. Danny Jack Willis (EOD 07/16/00) — Forestry Technician (GS 5, PPT)
30. Daniel J. Laber (EOD 07/22/01) — Forestry Technician (GS 5, PPT)

Figure 18. Front Row (L-R): D. Campbell, J. Drury, B. Derouin
Back Row (L-R) J. Kasbohm, S. Davis, J. Shelton, S. Reeves

Figure 19. Front Row (L-R): G. Gooch, M. O'Connell, S. Gentry
Back Row (L-R): J. Burkhart, E. Sikes, S. Jones

Figure 20. Front Row (L-R): W. Sikes, C. Bryant, R. Chesser, B. Boatright, M. Housh
Back Row (L-R): H. McCullough, R. Forcine, D. Laber, D. Nuss, D. Willis, R. Beacom, S. Aicher

Figure 21. (L-R): G. Blanks, S. Welch, F. Wetzel

Cynthia L. Thompson transferred to Osceola National Forest effective date 2/10/03.

Dawn Zirrillo accepted a 4 year term position as a Biological Science Technician with Lacassine NWR, Lake Arthur, LA effective 2/24/02.

Edythe Williams was hired on as a 30-day critical need hire Clerk effective date 2/24/02.

Edythe Williams was extended an additional 30 days as a critical need hire Clerk effective date 3/26/02.

On April 25, 2002, Linda Bryant was brought on board as a 30-day critical need hire, Clerk, GS-0303-3, to assist in the administrative duties.

On May 18, 2002, Aishah Farid, SCEP student was terminated from Okefenokee NWR.

Effective May 19, 2002, Crystal Rose came on board as a SCEP student.

Kevin Sturgill accepted a 30-day critical hire need appointment as a Biological Aid, GS-0404-03, at Okefenokee on May 26, 2002.

Raymond Beacom was promoted to a Forestry Technician, GS-0462-05, effective date June 10, 2002.

Cory Bryant was promoted to a Forestry Technician, GS-0462-05, effective date June 10, 2002.

June 16, 2002, Micheal Housh was reassigned to Okefenokee NWR from Carolina Sandhills NWR, McBee SC.

James Barber was hired on June 19, 2002, as a critical need hire, GS-0303-03, Clerk to assist with administrative duties to help personnel get caught up on additional work due to the Blackjack Bay Complex fire.

Effective July 19, 2002, James Barber was extended an additional 30 days as a critical need hire.

Kevin Sturgill's appointment was extended an additonal 30 days on June 25, 2002.

Effective July 16, 2002, Raymond Beacom, career seasonal forestry technician, was placed in a nonpay status as his 2-week mandatory time off.

Autumn Sofge was hired on August 18, 2002, as a critical need hire, GS-0303-03, Clerk to assist with events and Visitor Center needs.

Sallie Gentry was promoted to the FPL 7; Park Ranger GS-0025, effective August 25, 2002.

Richard Boatright received his career ladder promotion as an Office Automation

Assistant/Dispatch, GS-0326-5, effective August 25, 2002.

Daniel Laber was promoted to the FPL 5, Forestry Technician GS-0462, effective September 8, 2002.

Autumn Sofge was extended an additional 30 days as a critical need hire, effective date September 17, 2002.

Effective October 20, 2002, Margaret O'Connell transferred to Bosque del Apache NWR in Socorro, NM.

Cory Bryant, William Sikes, and Danny Jack Willis, career seasonal employees, were placed in a nonpay status October 6, 2002, for their mandatory 2 weeks off.

Daniel Laber, career seasonal employee was placed in a nonpay status October 20, 2002, for his mandatory 2 weeks off.

November 17, 2002, Amy Lash was hired as a 30-day critical need hire as a GS-0303-03, Clerk to assist the Visitor Center.

Mike Housh transferred from Okefenokee NWR back to Carolina Sandhills NWR effective date December 15, 2002.

On December 17, 2002, Amy Lash's appointment was extended an additional 30 days.

9.c. TRAINING AND TRAVEL

Summaries of training and other travel are shown below:

Training - Permanent Personnel

Maggie O'Connell	Interpretive Panels Wayside Exhibits	Shepherdstown, WV	Jan 13 - 18
Skippy Reeves Shaw Davis	GIS Training	Shepherdstown, WV	Feb 10 - 14
Sallie Gentry	USFWS Foundations Course	Shepherdstown, WV	Feb 10 - 15
Jim Shelton Shaw Davis	Annual LE Refresher	Quincy, FL	Feb 24 - Mar 1

Greg Blanks Stacey Welch	Annual LE Refresher	Quincy, FL	Mar 3 - 8
Reggie Forcine	S-371 Helibase Manager	Boise, ID	Apr 29 - May 3
Shaw Davis	Collateral Duty Property Officer Training	Memphis, TN	Apr 24 - 25
Tony Gooch	Outboard Gearcase Training	Orlando, FL	May 14 - 16
Tony Gooch	Outboard 4 - Stroke 1	Orlando, FL	May 20 - 23
Dartha Campbell	FFS Training	Atlanta, GA	May 21 - 24
Bev Derouin	FFS Training	Atlanta, GA	Jun 3 - 6
Rocky Chesser	Heavy Equipment Safety Train the Trainer Course	Decatur, AL	Jun 3 - 13
Maggie O'Connell	Train the Trainer - Interpretive Process Model	Shepherdstown, WV	Jun 10 - 14
Crystal Rose	MOCC Training	Gainesville, FL	Jun 17 - 21
Rocky Chesser	Forklift Train the Trainer Course	Memphis, TN	Jun 20
Crystal Rose	SCEP Orientation	Titusville, FL	Jun 23 - 28
Dartha Campbell Doug Nuss	Retirement Seminar	Orlando, FL	Jun 24 - 26
Skippy Reeves Jim Shelton Fred Wetzel	LE and FF Retirement Seminar	Atlanta, GA	Aug 6 - 7
Dartha Campbell	Warrant Maintenance Training	Vienna, VA	Sep 2 - 7
Maggie O'Connell	Mid Career Retirement Seminar	Decatur, AL	Sep 23 - 25
Mike Housh Brantley Boatright	WIMS Training	Atlanta, GA	Oct 7 - 11

Everette Sikes	GA Rural Water Association Annual Technical Conference	Helen, GA	Oct 27 - 29
Will Sikes Cory Bryant Danny Jack Willis Mike Housh Reggie Forcine	Mid Career Retirement Seminar	Atlanta, GA	Oct 22 - 24
Raymond Beacom Dan Laber Cory Bryant	S230 & S231 Crew Boss and Engine Boss Training	Brooksville, FL	Nov 4 - 8
Reggie Forcine	ACE Aviation Training	New Orleans, LA	Nov 17 - 22
Fred Wetzel Howard McCullough	Longleaf Alliance Regional Conference	Southern Pines, NC	Nov 17 - 21
Reggie Forcine	Helicopter Managers Workshop	Gulfport, MS	Dec 2 - 6
Fred Wetzel	Fire Management Mentoring and Training	Park City, UT	Dec 9 - 13

Travel - Permanent Personnel

Jim Shelton	LE Detail	Redding, CA	Jan 28 - Feb 16
Jim Burkhart	Meet with Media on Prescribed Burn for Florida Panther NWR	Naples, FL	Jan 26 - 31
Shaw Davis Skippy Reeves	Banks Lake Briefing	Atlanta, GA	Jan 30 - 31
Reggie Forcine	Assist St. Marks with Prescribed Burn	St. Marks, FL	Feb 2 - 5

Greg Blanks Rocky Chesser Tony Gooch Stiner Jones Doug Nuss Everette Sikes Stacey Welch	Wage Grade Maintenance Workshop	Atlanta, GA	Feb 4 - 8
Maggie O'Connell	R4OT/NOT	Sebastian, FL	Feb 4 - 8
Jim Burkhart	Fish-A-Rama	Perry, GA	Feb 8 - 10
Maggie O'Connell	Assist Warm Springs with Interpretive Exhibits	Warm Springs, GA	Feb 11 - 12
Will Sikes	Assist Savannah Coastal Refuges with Prescribed Burn	Savannah, GA	Feb 21 - Mar 1
Howard McCullough Reggie Forcine Dan Laber Raymond Beacom Danny Jack Willis Cory Bryant Rocky Chesser	Assist Eufaula NWR with Prescribed Burn	Eufaula, AL	Feb 24 - 28
Greg Blanks	Transport Fire Cache to Monkey Face Fire	Francis Marion National Forest, SC	Feb 28 - Mar 1
Fred Wetzel	FL Interagency Coordination Center Cooperators Meeting	Tallahassee, FL	Feb 27 - Mar 1
Jim Shelton	Instructor for Annual LE Refresher Training	Quincy, FL	Mar 3 - 8
Shaw Davis	Project Leaders Meeting	New Orleans, LA	Mar 3- 8
Skippy Reeves	NIFC Review Team Meeting	Boise, ID	Mar 4 - 7
Sallie Gentry	Pelican Island Celebration	Vero Beach, FL	Mar 9 - 11
Skippy Reeves	Brief Congressman Kingston and Staff on Banks Lake issue	Washington, DC	Mar 13

Shaw Davis	Merritt Island Scrub Jay Project	Titusville, FL	Mar 25 - 27
Doug Nuss	Wage Grade Training Manual R4 Update	Atlanta, GA	Mar 26 - 29
Cory Bryant Will Sikes	Fire Assist Osceola National Forest	Olustee, FL	Mar 27 - 29
Skippy Reeves Jim Burkhart Maggie O'Connell	Centennial Celebration Meeting	Covington, GA	Apr 8
Skippy Reeves	Regional Fire Management Coordinators Meeting	Phoenix, AZ	Apr 24 - 26
Fred Wetzel	Instructor for Fire in Ecosystem Management	Tucson, AZ	Apr 24 - 27
Doug Nuss	Wage Grade Meeting	Atlanta, GA	Apr 29 - May 2
Jim Shelton	Instructor for Refuge Officers Basic Training	Glynco, GA	May 13 - 17
Skippy Reeves	Refuge Fire Management Team Meeting	Washington, DC	May 13 - 15
Skippy Reeves	Southeastern Fire and Climate Workshop	St. Petersburg, FL	Jun 22 - 27
Fred Wetzel	Southeastern Fire and Climate Workshop	St. Petersburg, FL	Jun 24 - 27
Shaw Davis	SCEP Orientation	Titusville, FL	Jun 23 - 28
Shaw Davis	LE Manatee Detail at Cape Canaveral	Titusville, FL	Jul 4 - 7
Maggie O'Connell	Crab Orchard Public Use Review	Marion, IL	Jul 8 - 13
Reggie Forcine	Federal Fire Assist	Durango, CO	Jul 10 - 25
Brantley Boatright	SACC Fire Detail	Atlanta, GA	Jul 10 - 23
Danny Jack Willis Dan Laber	Federal Fire Assist	Gunnison, CO	Jul 11 - 26
Cory Bryant	Federal Fire Assist	Prairie City, OR	Jul 15 - 30

Jim Shelton	Wildfire Investigations Meeting	St. Simons Island, GA	Jul 16 - 18
Greg Blanks	Federal Fire Assist	Prairie City, OR	Jul 17 - Aug 1
Stacey Welch	Federal Fire Assist	Prairie City, OR	Jul 20 - Aug 4
Sallie Gentry	Foundations Review	Shepherdstown, WV	Jul 22 - 29
Jim Burkhart	Buck-A-Rama	Atlanta, GA	Aug 3 - 5
Greg Blanks	Return Fire Cache to London, KY	London, KY	Aug 7 - 8
Stacey Welch	LE Manatee Detail	Ft. Meyers, GA	Aug 9 - 12
Skippy Reeves	National Fire Team Meeting	Boise, ID	Aug 12 - 16
Jim Burkhart	Buck-A-Rama	Perry, GA	Aug 16 - 18
Maggie O'Connell	Presentation at Introduction to Visitor Services	Shepherdstown, WV	Aug 16 - 20
Beverly Derouin	Federal Fire Assist	Steamboat Springs, CO and Kemmerer, WY	Aug 21 - Sep 5
Greg Blanks	Federal Fire Assist	Medford, OR	Aug 29 - Sep 14
Cory Bryant	Federal Fire Assist	Ontario, CA	Sep 4 - 13
Skippy Reeves Shaw Davis	North Florida Ecosystem Team Meeting	Palatka, FL	Sep 9 - 11
Judy Drury	NIFC Detail	Boise, ID	Sep 9 - 27
Dan Laber	Assist Crystal River with Whooping Crane Project	Crystal River, FL	Sep 16 - 20
Doug Nuss	Wage Grade Committee Meeting	Granada, MS	Sep 30 - Oct 3
Jim Burkhart	GA State Fair - Centennial	Perry, GA	Oct 3 - 6
Brantley Boatright	Hurricane Detail - SACC	Atlanta, GA	Oct 2 - 7

Skippy Reeves Sara Aicher Shaw Davis	CCP Meeting	Atlanta, GA	Oct 15 - 16
Skippy Reeves	Fire Review Team Meeting	Slidell, LA	Oct 28 - 31
Rocky Chesser	Instructor Heavy Equipment Safety Training	Gautier, MS	Nov 17 - 21

9. d. ENERGY

Fuel and electrical usage increased due to a long fire season and additional activities due to more AmeriCorp, Volunteers and interns during CY 2002.

Energy usage.

	CY 2002	CY 2001	CY 2000
Electricity (kwh)	338,451	277,653	263,868
Gasoline (gal)	17,195	13,756	11,005
Diesel (gal)	14,248	11,399	9,119

9. e. FUNDING

Comparison of 5-year funding.

ACTIVITY	2002#	2001*	2000**	1999***	1998****
1260	1131.9	1213.7	1211.3	1544.2	1202.0
6860	60.0	60.0	60.0	60.0	60.0
9251	875.0	1081.2	785.0	682.6	576.2
9263	99.3	99.3	66.2	54.5	52.0
9264	21.0	0.0	0.0	0.0	0.0
1100	8.0	0.0	0.0	10.0	0.0
2111	0.0	274.9	0.0	0.0	0.0
2810/2821	67.1	190.80	991.5	1000.0	1.9
2960	0.0	5.4	279.4	537.0	600.0
Federal Highway Money	435.0	70.0	0.0	0.0	0.0
Total Allocation	2697.3	2995.3	3393.4	3888.3	2492.1

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

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

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

*** *Includes MMS (648.0), contaminant (11.0), VC renovation (1000.0).*

**** *Includes MMS project (241.0), contaminant (32.0), research (92.4), and helicopter.*

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 airboat and helicopter/aircraft safety, compliance with mandatory safety requirements (i.e., seat belts, hard hats and life jackets), the importance of MSDS Sheets, procedures for hazmat spills and office and shop safety were discussed.

The following accidents occurred during the year:

Permanent Employees

Gregory S. Blanks - November 26, 2002

While operating the "Go-Devil", the prop hit a stump causing the steering handle to strike employee's left thigh. No lost time and no medical treatment was necessary.

Firefighters

Nothing to report.

Interns

Nothing to report.

Volunteers

Nothing to report.

AmeriCorps

Mariah Harrison - November 8, 2002

Mariah Harrison, AmeriCorps Team Leader, was driving to Folkston GA and a deer ran out in front of the vehicle doing minor damage to the mini-van. No one in the vehicle was injured, but the deer succumbed due to its injuries.

Youth Conservation Corps

Jacob A. Carter - July 26, 2002

Employee reached into a cooler in the back of a pickup truck to retrieve a cold beverage when his right middle finger was cut by broken glass. First aid was administered at the scene. No lost time and no medical treatment was necessary.

9. g. VOLUNTEERS

The volunteer program continues to grow at Okefenokee NWR. Shifts in responsibilities allowed Gracie Gooch the time to recruit more volunteers and guide them on various refuge projects. In FY2002, over 250 volunteers contributed 18,110 hours; equivalent to more than eight full time employees. Volunteers are integral to maintaining the refuge, greeting visitors, assisting biologists and foresters, and performing various other duties. Volunteers are especially important

to the public use program - without volunteers, visitors may have a less than pleasant experience on the refuge.

The ability to provide housing is a great advantage at Okefenokee NWR. All travel trailer pads were occupied with volunteers from October through March. In addition, the refuge had one student, Rachel Wallach, from Israel who occupied a trailer site over the summer months.

Volunteers accomplished many tasks this year. They maintained the lawn and landscaping, painted the exterior of buildings, maintained signs, trimmed canoe and walking trails, surveyed wildlife, planted longleaf pine seedlings, maintained the recycling program, staffed the refuge visitor center, hosted the Chesser Island Homestead (Figure 22), constructed and renovated overnight canoe shelters, represented the refuge at off-site events and much more. In addition, many interpretive and environmental education programs were presented to educational groups and visitors.

A new 3½-mile interpretive walking trail was marked and cut by volunteers. Several groups helped with clearing the trail and building three bridges (foot) over waterway crossings. This trail connects with other trails giving visitors the opportunity to hike short or long distances. Visitors also have the opportunity to start their journey from the beginning of our entrance road and hike approximately eight miles to a ¾-mile boardwalk with observation tower. The new section of the interpretive trail will give several messages: 1) the historical part of the Suwannee Canal, 2) the importance of prescribed burning and management of the red-cockaded woodpecker, and 3) the role and management of commercial timber companys in southeast Georgia (see section 8.b. Partnerships).

More than 50 miles of motorboat and canoe trails were cut and trimmed. The day-use shelter at Minnie's Lake was rebuilt. Several miles of trail were maintained by removing floating logs from the channels. An old airboat trail was cut and opened to day-use canoeists.

Volunteer Ron Phernetton completed the Habitat Management step-down plan for the Comprehensive Conservation Plan. Several volunteers also helped with five public meetings.

Six volunteer trailers were replaced with 2001 trailers from excess property.

On May 4th, the annual volunteer awards ceremony was held. The volunteers enjoyed dinner followed by the awards ceremony. Several volunteers received certificates and hour pins.

Volunteers staffed exhibits at the Pelican Island Celebration, Sebastian, FL; Fish-A-Rama, Atlanta, GA; Buck-A-Rama, Perry, GA; Florida State Fair, Tampa, FL; Visitor Contact Stations, Kingsland, GA; Waycross Fair, Waycross, GA; and Comprehensive Conservation Plan public meetings at Waycross, Folkston, St. George, Fargo, and Homerville, GA.

Figure 22. Sally Webb teachs visitors how to weave baskets.

Interns

Interns assisted the public use program with visitor services, school groups, and much more.

AmeriCorps

Two AmeriCorps teams were selected this year to assist Okefenokee NWR with projects. Projects included cutting the new Longleaf Pine walking trail (3-miles with 3 foot bridges); trimming the old airboat trail for day-use canoeing; planting several thousand longleaf pine seedlings; assisting forestry staff with prescribed burning; trimming over 20-miles of wilderness canoe trails and assisting with environmental education and interpretive programs (Figure 23).

AmeriCorps spent two days with Timucuan National Preserve, a tri-agency partnership with Okefenokee NWR, removing large debris from 200 acres of newly acquired land.

Figure 23. Russell Barber instructing AmeriCorps in proper use of tools.

Youth Conservation Corps (YCC)

Okefenokee National Wildlife Refuge had 32 YCC applications this year. A total of five students were selected for the Eastside and five for the Westside YCC (Figure 24). This selection included one youth leader for each entrance. After the third week, the Westside youth leader quit and two students were fired due to poor work habits and attitude. One student was hired as a replacement leaving the westside with only three students and no youth leader. YCC'ers kept trails and roads free of litter; maintained yards and lawns; maintained facilities; washed vehicles; trimmed walking and canoe trails; and performed office work during inclement weather. Duties included work at both the East and West Entrances to Okefenokee NWR as well as Banks Lake NWR.

The YCC'ers had the opportunity to learn about the purpose of the refuge and to learn about the different entrances to the Refuge. Field trips included North, West, and East Entrance's to Okefenokee NWR as well as Banks Lake NWR. Okefenokee NWR and Cumberland Island NS did an exchange field trip. The YCC youth leaders and enrollees from each station gave a tour of their facility and talked about different management techniques used at their site. It was great to see both groups had learned a lot about their work site. Cumberland Island is a barrier island off the coast of St. Mary's, Georgia, so this gave the group a chance to explore and learn about different habitats.

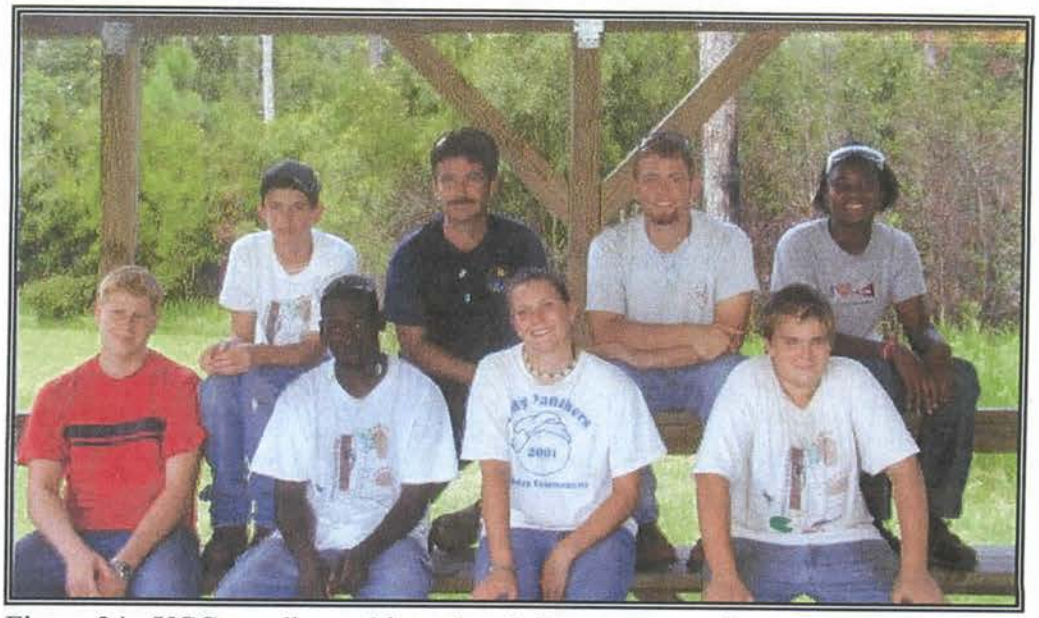

Figure 24. YCC enrollees taking a break from canoe trail maintenance.

9.h. COMPUTERS AND COMMUNICATION

Computers

All employees, interns, and volunteers either have a computer at their desk, or have easy access to one. Employee needs/requests are reviewed by the refuge's computer team before purchase. These reviews ensure that: purchases are in compliance with FWS hardware and software specifications; orders are not duplicated; that the most cost effective software packages are purchased; and computers are purchased to meet employee's need in their particular field of work. During these reviews, priorities for purchasing are determined by the team.

The administrative office staff utilizes a Compaq Proliant DL Pentium III server.

The administrative office accesses SWAN via a 64-K relay line and CISCO router which were set up and operating in late September 2000. The rest of the refuge's locations (shop, visitor center, and west side shop) still have to dial up the modem pool.

REVIEW AND APPROVALS

BANKS LAKE NATIONAL WILDLIFE REFUGE

LAKELAND, GEORGIA

ANNUAL NARRATIVE REPORT

Calendar Year 2002

M. Skipp Reem — 5-21-03

Refuge Manager — **Date**

Bud A. Gabrill — 6-24-03

Refuge Supervisor, Area III — **Date**

Bud Cleveland — 7/1/03

Chief of Refuges — **Date**

TABLE OF CONTENTS

INTRODUCTION

Banks Lake National Wildlife Refuge (3,559 acres) is located in Lanier County near Lakeland, Georgia. The refuge contains a variety of habitat types including 1,200 acres of marsh, 1,459 acres of cypress swamp and 900 acres of open water. Scattered through these types are hardwood swamp, pine forest and other upland areas. The refuge was established for the protection and conservation of a unique environment as well as migratory and resident wildlife.

On April 16, 1980, the U.S. Fish and Wildlife Service entered a lease agreement with The Nature Conservancy to manage approximately 3,559 acres of the Banks Lake/Grand Bay Wetlands complex, located in Lanier and Lowndes Counties in southeastern Georgia. The original intent of the lease was to eventually establish a National Wildlife Refuge on this area. Changes in the emphasis of the land acquisition program resulted in no funds being appropriated for acquiring this land. This area remained in a state of limbo during 1982 and 1983 with the U.S. Fish and Wildlife Service maintaining a caretaker position over Banks Lake. In 1984, funds were added to the FY 1985 budget for the purchase of this area at a land value of $356,000. The refuge was authorized under the Fish and Wildlife Act of 1956 and funded through provisions of the Land and Water Conservation Fund Act of 1955 with strong local support from the Lakeland community and the congressional delegation. The area became Banks Lake National Wildlife Refuge on February 22, 1985.

HIGHLIGHTS

- Banks Lake waters were stocked with bluegill and largemouth bass fingerlings. (Section 1.a.)
- Okefenokee staff was instructed to allow the water level to rise to full pool despite illegal septic tanks along the lake's shore. By year's end, rainfall was not sufficient enough to fill the lake. (Section 3.a.)
- The refuge boundary was posted during the year. (Section 5.c.)
- As a result of the conflicts between the refuge and its adjacent landowners a bill was introduced in Congress by Representative Saxby Chambliss (R-GA). (Section 6.j.)
- National Fishing Week was celebrated at the refuge with a Youth Fishing Derby. (Section 8.a.)
- More than 5,400 pounds of recyclables and trash were picked up during two cleanup days. (Section 9.g.)

1.

MONITORING AND STUDIES

1.a. SURVEYS AND CENSUSES

Banks Lake is one of the largest freshwater swamp systems in the coastal plains of Georgia. Its unique habitat provides for a diversity of wildlife species that migrate through the area as well as for a number of resident species. Only incidental sightings as staff and volunteers work in the area add to our knowledge of this satellite refuge.

Endangered and Threatened Species

Nothing to report.

Other Wildlife

Waterfowl

Wood ducks are the most common waterfowl species. Nest boxes installed by the State of Georgia in Grand Bay and by the refuge in Old Field have increased nest cavities providing for a larger population. Forty wood duck boxes are currently in place on the refuge portion of Banks Lake. They were not maintained during 2002.

Fisheries

Water levels gradually rose after the drawdown in the fall of 2001. In February, 1 to 4 inch long bluegill fingerlings were released into the main channel to the south of the boat basin and into Eagle's Nest Run (Figure 1). The total number stocked was 421,000. In late April and early May, a total of 30,000 largemouth bass fingerlings ranging from 1 to 1.5 inches were stocked along the shoreline near the mouth of the boat basin.

A survey attempt by Ecological Services - Panama City was tried in December, but water levels were too low for the electrofishing boats.

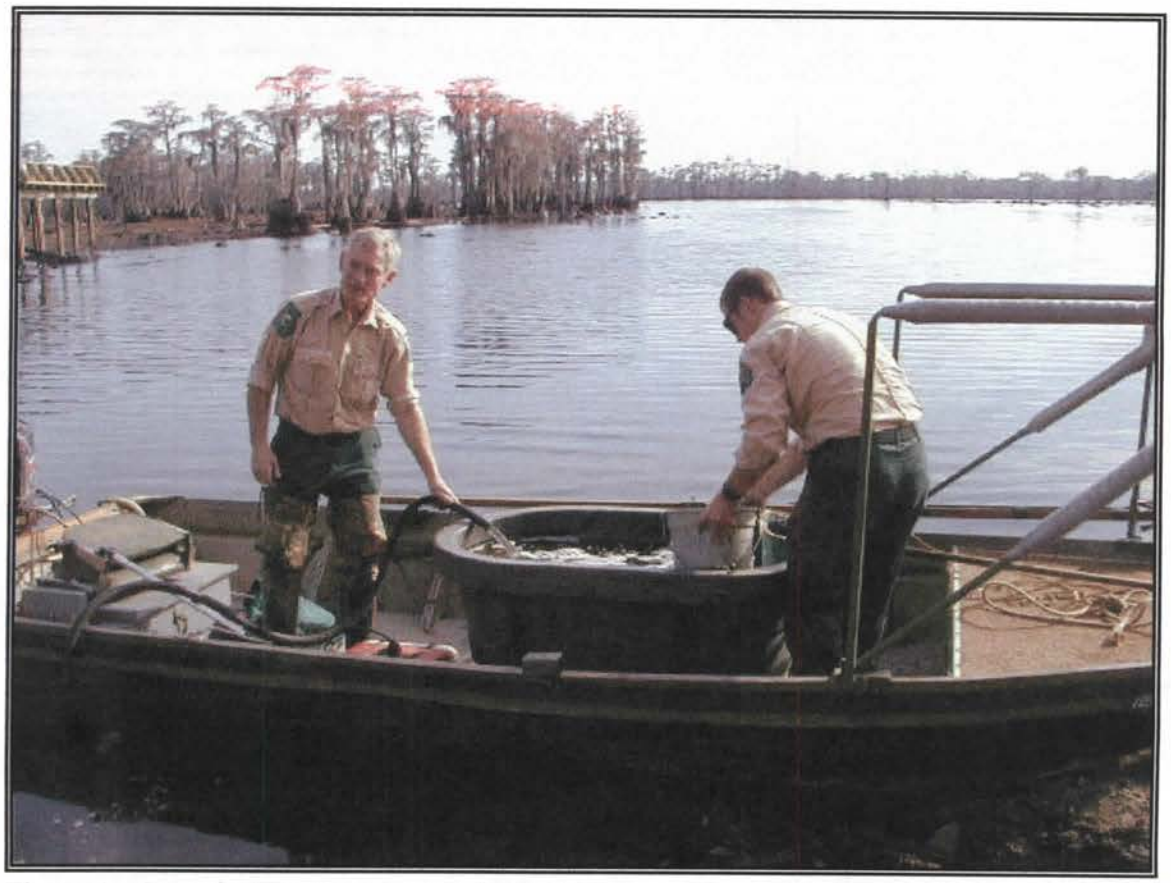

Figure 1. Georgia Department of Natural Resources release fish into Banks Lake water.

1.b. STUDIES AND INVESTIGATIONS

Contaminants Assessment of Banks Lake National Wildlife Refuge - ES, Brunswick, GA

Contaminants Specialist Gregg Masson, Ecologist John Kasbohm, and Assistant Contaminants Specialist Diane Bateman began one year of quarterly sampling in March 1997, to determine base line contaminant conditions. No report was completed.

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 refuge, which contains 3,559 acres, 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. A water control structure constructed in the early 1940's was replaced in 2001.

3.a. WATER LEVEL MANAGEMENT

Water levels at Banks Lake were below normal throughout the year. Despite numerous illegal septic systems along the north boundary of the lake, the refuge was ordered to bring water levels up to full pool. Rainfall was not sufficient enough to fill the lake during 2002.

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

It is recommended the lake be lowered every three years to control the aquatic vegetation. This was accomplished in 2001. In 2002, water levels remained low due to the lack of rainfall.

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

Periodic meetings of the inter-agency Grand Bay-Banks Lake Ecosystem (GBBLE) team continued throughout the year.

5.b. TRIBAL COORDINATION

Nothing to Report.

5.c. PRIVATE LAND ACTIVITIES

Construction of private docks and second homes continued along the north boundary during the year as a result of the May 2000 court ruling which set the refuge boundary at the 1925 water line (several feet below the normal high water level). The refuge boundary was posted during the year (Figure 2).

Figure 2. The refuge boundary was posted during the year.

5.d. OIL AND GAS ACTIVITIES

Nothing to Report.

5.e. COOPERATIVE/FRIENDS ORGANIZATIONS

Although local citizens interest group continues to be vocally critical of the Fish and Wildlife Service's management of the refuge, a few individuals who have provided valuable volunteer time and support has started their own support group.

6.

RESOURCE PROTECTION

6.a. LAW ENFORCEMENT

Law enforcement efforts were carried out by refuge officers from Okefenokee NWR. Due to the distance and budget constraints, very little law enforcement was done this year. A kiosk with posted refuge regulations is at the boat ramp and informs visitors about refuge regulations. The refuge boundary is still in dispute and hampers LE efforts along the north shore of the lake. This issue should be resolved in 2003. Two federal violations were issued by refuge officers and six state cases were made by state officers this year on the lake. Due to the drawdown of the lake last year and low water conditions, visits to the refuge by fisherman and other users have been down for most of the year. Sixteen incident reports were written for trash dumping and four small arson fires. Two fires escaped onto the refuge when adjacent landowners tried to burn the shoreline during low. The other two were purposely set and burned close to the new dock.

6.b. WILDFIRE PREPAREDNESS

Nothing to Report.

6.c. PERMITS AND ECONOMIC MANAGEMENT

No special use permits were issued during the year due to low water levels.

6.d. CONTAMINANT INVESTIGATION AND CLEANUP

The 2001 drawdown of the lake exposed what appear to be numerous illegal septic systems (Figure 3). County officials were advised and given photographic evidence of these violations, but no action has been taken to date. In addition, the refuge staff has been ordered to continue filling the lake to full pool, which would inundate the septic tanks in question.

Figure 3. A septic system below the full pool level of Banks Lake.

6.e. WATER RIGHTS MANAGEMENT

Nothing to Report.

6.f. CULTURAL RESOURCE MANAGEMENT

Nothing to Report.

6.g. FEDERAL FACILITY COMPLIANCE ACT

Nothing to Report.

6.h. LAND ACQUISITION

Nothing to Report.

6.i. WILDERNESS AND NATURAL AREAS

Nothing to Report.

6.j. THREATS AND CONFLICTS

As a result of the conflicts between the refuge and its adjacent landowners, a bill was introduced in Congress by Representative Saxby Chambliss (R-GA). The bill (H.R. 987) would: 1) transfer management responsibility for Banks Lake NWR to the Georgia Department of Natural Resources, 2) cost the federal government $75,000-$100,000 per year for the next five years, and 3) exempt these actions from the National Environmental Policy Act of 1969 or any other federal laws relating to federal action.

7.

ALASKA ONLY

8.

PUBLIC EDUCATION AND RECREATION

8.a. PROVIDE VISITOR SERVICES

This is an unstaffed station. Facilities provided include a parking lot, double-wide boat ramp, and architecturally accessible fishing pier. No visitation figures are kept for the refuge.

On-Site Special Events

National Fishing Week was celebrated at the refuge with a Youth Fishing Derby (Figure 4 & 5). Over 100 people attended. Events included a Fishing Derby with thirty children ages 3 - 15 participating at nearby Lake Irma, managed by the City of Lakeland. The refuge hosted a Casting Kids Clinic and Competition, sponsored by Bassmasters of Valdosta. Other activities included a worm gruntin' demonstration, knot tying, raffle, boat and motor show, fish t-shirt art, food, drinks, and an awards ceremony. A lot of community support was shown for this event.

Figure 4. Aspiring young fisherman casts his lure in the Kids Casting Competition.

Figure 5. Young visitor tries his hand at Worm Gruntin'.

8.b. OUTREACH

Tip Hon of the Georgia Department of Natural Resources provided the refuge with a copy of the State sponsored feasibility study for the Grand Bay-Banks Lake Area.

Extensive outreach efforts were required to fend off criticism of the Fish and Wildlife Service for the fish kill resulting from the installation of the new water control structure in December of 2001. This effort would not have been successful if not for the support of the Georgia Department of Natural Resources, Fisheries Division. Fishery Biologist, Bert Deener, and his staff helped

extensively with newsreleases, water quality monitoring, and re-stocking efforts which helped to minimize the public relations damage. Outreach efforts with volunteers, the local Chamber of Commerce, the Georgia Department of Natural Resources and the Valdosta Bassmasters will continue to work on this issue.

9.

PLANNING AND ADMINISTRATION

9.a. COMPREHENSIVE CONSERVATION PLANNING

Banks Lake Comprehensive Conservation Plan will be a separate document from Okefenokee's plan. The comment period for the CCP is anticipated to begin in 2004.

9.b. GENERAL ADMINISTRATION

Banks Lake NWR is an unfunded, unstaffed refuge administered by the staff at Okefenokee NWR. Employees from Okefenokee NWR must travel 150 miles roundtrip to do basic management and maintenance. Each year approximately 20,000 visitors use the refuge mainly for freshwater fishing, wildlife observation and photography. Refuge facilities include a boat launch ramp, two fishing piers that accommodate disabled anglers, a short hiking trail and a concession building with public restrooms. Public demand for these facilities is increasing, but without staff on site, the demands cannot be met.

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

Water levels were drawn down in the lake to kill the vegetation that had accumulated over the years. The trash that was found in the lake was horrific. Two lake clean ups were scheduled. Despite the chilly temperatures and drizzling rain, about thirty volunteers participated in each clean up. Over 4500 pounds of recyclables and trash were picked up at the first clean up and 900 pounds at the second clean up.

Figure 6. Volunteer Lauren Olsen after a hard days work in the lake.