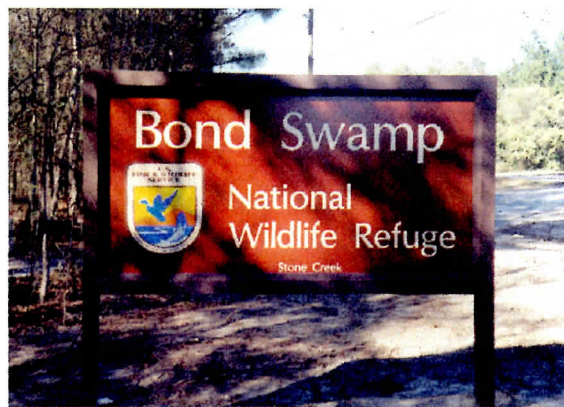


REVIEW AND APPROVALS

PIEDMONT and BOND SWAMP NATIONAL WILDLIFE REFUGES

Round Oak, Georgia



ANNUAL NARRATIVE REPORT

Calendar Year 1999

Refuge Manager Ronnie Shell Date 2-8-01

Refuge Supervisor Review Beth Gault Date 2-22-01

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Regional Office Approval
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2/22/01
Date

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Feedback

Information Packet (inside back cover)

i. INTRODUCTION

Due to its limited staff, management, and budget, the narrative for Bond Swamp NWR will be combined with that of Piedmont NWR.

Piedmont National Wildlife Refuge, located in Jones and Jasper Counties in Central Georgia, is 25 miles north of Macon on the east side of the Ocmulgee River. The refuge is typical of the Piedmont Plateau Physiographic Region with rolling hills interspersed with small, clear streams. Elevations range from 360 feet above sea level along Falling Creek and Caney Creek to 640 feet in Compartment 25 near headquarters.

Indian occupation of this area can be traced back thousands of years and ranges from nomadic hunters to cultures depending primarily on farming. The area was settled in 1806 through land lotteries, with most of the land cleared for farming by 1820. Cotton became the primary crop. By 1840, Jones County was one of the most populous counties in the state and had a booming economy. General Sherman's "march to the sea" and post-Civil War Reconstruction decimated local economies. Cotton farming continued after the war with increasing loss of fertility and decreasing crop yields. Severe erosion took place, with most topsoil being washed away. The Great Depression coupled with the effects of boll weevils brought about abandonment of most crop lands. The Resettlement Administration purchased the area in the mid 1930's to retire the land from agriculture.

Piedmont Refuge was officially established on January 18, 1939 for the purpose of serving as a refuge for birds and other wildlife. The land was worn out with several major species of wildlife having disappeared from the area. Initial refuge activities included erosion control through the use of check dams and conservation plantings, limited tree planting, and introduction of wildlife species including white-tailed deer, wild turkey, beaver, and wood ducks. Since 1939, through the process of management working with ecological succession, the refuge has again become forested and supports diverse wildlife populations.

Today the refuge is covered with a pine/hardwood forest that supports the endangered red-cockaded woodpecker and associated wildlife, upland and bottomland hardwoods, small impoundments, beaver ponds, and clear flowing streams. The refuge is managed for its original purpose and for the objectives of the Fish and Wildlife Service and the National Wildlife Refuge System. Management is carried out for endangered species, migratory birds, native wildlife, environmental education, and wildlife oriented recreation.

Bond Swamp National Wildlife Refuge, established on October 16, 1989 is located approximately seven miles southeast of Macon, Georgia in Bibb and Twiggs Counties, and currently contains 6,500 acres. In 1999, the acquisition boundary was expanded to 18,000 acres. The refuge is situated along the fall line separating the Piedmont from the Coastal Plain and is comprised primarily of wetlands and bottomland hardwood forest. A strip of uplands and two large limestone bluffs border the wetlands. The refuge contains a unique diversity of habitat types ranging from mixed upland hardwood/pine ridges to bottomland hardwoods and swamp forests interspersed with creeks, beaver swamps, and oxbow lakes. These habitats support resident wood ducks, wintering waterfowl, nesting bald eagles, nesting colonies of herons, egrets and anhingas,

songbirds including neotropicals, black bears, alligators, white-tailed deer, and river otter.

There is great public interest in the refuge, and 1999 saw its first public use in addition to the hiring of an assistant manager for the refuge. Currently, the refuge is involved with the local Ocmulgee Heritage Greenway effort which encompasses Bond Swamp Refuge. The Service is working through partnerships with other federal and state agencies, local municipalities, conservation groups, and concerned citizens in this effort. The primary reason for Bond Swamp's acquisition and inclusion into the National Wildlife Refuge System was to protect and enhance the area's unique and rich natural resources. This Greenway effort will provide resources to help protect this valuable system while providing public recreation and education.

Both refuges are located in the U.S Fish and Wildlife Service's Altamaha Ecosystem.

ii. HIGHLIGHTS

Bond Swamp NWR received partial startup funding in 1999: a new assistant manager was hired for the refuge. (section 9b)

Bond Swamp NWR opened for the first time to limited public use, and the first Bond Swamp deer/hog hunt was a success. (section 8a)

The MMS project to rehabilitate the Allison and Pippins Lake dams was completed in 1999. (section 9b)

The Bond Swamp NWR acquisition boundary was expanded from 6,500 acres to 18,000 acres. (section 6h)

Thirty-nine volunteers contributed 892 hours to help make the disabled hunt a success. (sections 8a, 9b)

Important research continues on the refuge. (section 1b)

Piedmont's partnership with the Georgia Piedmont Natural Resources Cooperative (GPNRC) is officially underway with the hiring of a full-time coordinator in 1999. (section 5e)

Ozzie Castro-Poveda retired in April. The refuge had some other personnel changes, and still has vacant positions. (section 9b)

The 34% reduction in expenses for sales funding continues to burden refuge management efforts. (section 9b)

1999 was another successful year for the YCC crew. (Section 9b)

Helicopter use helped make for another good prescribed burning year, as 3,615 acres were burned in 1999. (section 3f)

There were 37 active RCW clusters, an increase from 27 in 1995, and two more than last year. (section 4)

The Piedmont Breeding Bird Survey identified a total of 56 different species. (section 1a)

The Christmas bird count was conducted for the 28th straight year. (section 1a)

A film crew from China Central TV visited Piedmont and Bond Swamp in May. (section 8b)

Refuge staff were involved in several major exhibits representing the Service. (section 8b)

Refuge Manager Ronnie Shell was presented with Partners in Flight's Stewardship Award for 1998. (section 5e)

Many cooperative efforts and partnerships contributed to a successful year. (section 5)

iii. CLIMATE DATA

Piedmont and Bond Swamp are located near the geographic center of Georgia and do not normally experience climatic extremes. Temperatures usually range from the low teens in the winter to 100 degrees in the summer. Precipitation during the year averages 44 inches, with an average 246 day growing season. Snow normally occurs once or twice in January or February, but typically does not accumulate to any significant amounts. Autumn is generally the dry period, with the wet season beginning in November. Rain occurs during the winter with the passage of weekly cold fronts, while spring and summer rains usually come during thunderstorms.

This year was mild and dry, with rainfall totals nearly seven inches below normal.

The months of July and August had 36 days with temperatures above 90 degrees. The highest temperature of 102 degrees occurred on August 14. The lowest temperature of 16 degrees was observed on January 5.

The following table summarizes the year's weather:

Piedmont NWR
Recorded Rainfall and Temperatures - 1999

MONTH	Avg.* High °F	Avg. Low °F	Avg. Monthly °F	Range of Temp	Rainfall**
January	62.5	36.4	49.5	16-78	6.86
February	64.3	39.6	52.0	24-79	2.17
March	68.0	39.4	53.7	28-81	3.40
April	79.4	54.6	67.0	36-91	1.45
May	84.9	56.7	70.8	43-93	1.89
June	88.2	67.4	77.8	61-98	5.30
July	90.7	71.1	80.9	65-100	2.44
August	95.8	71.6	83.7	63-102	3.11
September	86.1	60.6	73.4	46-99	3.11
October	76.8	53.3	65.1	32-87	2.60
November	71.0	42.7	56.9	29-80	3.23
December	61.4	34.6	48.0	21-76	1.53

	High Temperature	Low Temperature	Rainfall
1999	102	16	37.09"
Normal	98	17	44.00"

*Temperatures - Macon National Weather Service

**Rainfall - Piedmont National Wildlife Refuge

1. Monitoring and Studies

1a. Surveys and Censuses

The current animal lists for Piedmont contain over 200 species of birds, 45 mammals, 14 amphibians, and 41 reptiles.

Significant general wildlife occurrences at Piedmont NWR in 1999 included:

- The Bald Eagle Nest at Bond Swamp was active again with 2 adults observed around the nest. However, no young were ever observed during the year.
- Sandhill cranes on their way to Okefenokee from Wisconsin pass over and often stop at Piedmont and Bond Swamp in early March. Return flyers come through in October and November. A number of large flocks were seen or observed both at Piedmont and Bond Swamp.
- Migrating wood storks were observed on Piedmont and its adjacent lands in August.
- Mississippi kites and willets were observed on private lands adjacent to Bond Swamp in the summer of 1999.
- The refuge red-cockaded woodpecker population has responded positively to management with an increase in active clusters. The refuge had 37 active groups in 1999, an increase from 27 in 1995.
- The most numerous duck seen in the winter was the ring-necked duck, but no more than 2,000 were observed at one time on Piedmont's impoundments. Roosts at Bond Swamp contained several thousand mallards, wood ducks, and assorted other species during peak population periods.
- The 556 deer checked at the refuge check station during the deer hunts were generally in good to excellent condition. The average weights were at or slightly below the 10 year average for all weight classes.
- The Christmas bird count was conducted for the 28th straight year. Refuge and Georgia DNR employees conducted the survey, and 66 different species were identified. Observations of note included common snipe and spotted sandpiper.
- The 1999 Spring Gobbler counts were successful, with 54 turkeys counted.
- The fifth annual butterfly count was conducted by knowledgeable volunteers and refuge staff in June. Butterflies are a good indicator of habitat diversity and richness. In 1999

the count came up with more than 30 different species of butterflies from 5 families.

- On June 6, 1999, Jerry Amerson conducted the breeding bird survey on Piedmont for the eighth straight year. In 1999, 56 species of birds and 724 individuals were recorded

PIEDMONT NWR BREEDING BIRD SURVEY (1995-1999)

(totals by species)

1999 Total Species:56

1999 Total Individuals:724

Year						Year					
Species	99	98	97	96	95	Species	99	98	97	96	95
Green Heron	1	1	0	0	0	Carolina Chickadee	15	18	9	23	20
Wood Duck	13	0	1	0	1	Tufted Titmouse	54	47	11	28	23
Red-shouldered Hawk	2	0	1	3	1	Brown-headed Nuthatch	9	5	2	8	12
Wild Turkey	6	0	6	10	0	Carolina Wren	21	21	27	14	27
Northern Bobwhite	6	6	5	6	11	Blue-gray Gnatcatcher	13	5	12	9	8
Mourning Dove	22	21	19	1	6	Eastern Bluebird	2	2	3	1	4
Yellow-billed Cuckoo	14	9	2	2	6	Wood Thrush	29	31	18	10	20
Great Horned Owl	1	0	0	0	0	Brown Thrasher	4	0	1	3	1
Barred Owl	2	1	0	0	0	Northern Parula	6	11	11	6	14
Whip-poor-will	3	1	5	2	7	Yellow-throated Warbler	7	3	2	0	1
Chimney Swift	1	0	1	0	3	Pine Warbler	71	52	41	49	62
Red-headed Woodpecker	2	4	3	0	2	Prairie Warbler	32	16	26	13	14
Red-bellied Woodpecker	19	12	7	9	5	Black & White Warbler	1	1	1	0	1
Downy Woodpecker	4	4	10	5	6	Louisiana Waterthrush	2	0	1	1	2
Hairy Woodpecker	1	0	0	1	1	Kentucky Warbler	4	3	2	2	4
Red-cockaded Woodpecker	3	3	3	4	5	Hooded Warbler	2	2	3	1	5
Yellow-shafted Flicker	5	5	3	5	8	Yellow-breasted Chat	23	15	30	15	20
Pileated Woodpecker	4	9	8	4	5	Summer Tanager	26	25	27	39	40
Eastern Wood-Pewee	15	12	9	15	16	Eastern Towhee	35	0	38	45	53
Acadian Flycatcher	4	6	8	4	9	Bachman's Sparrow	7	3	21	6	5
Great Crested Flycatcher	17	24	23	10	22	Chipping Sparrow	12	6	2	0	0
Eastern Kingbird	3	1	1	1	5	Field Sparrow	4	2	0	1	14
White-eyed Vireo	4	0	4	3	4	Northern Cardinal	56	27	28	53	52

Yellow-throated Vireo	3	0	0	0	0	Blue Grosbeak	2	3	2	1	2
Blue-headed Vireo	4	0	0	0	0	Indigo Bunting	14	14	10	19	17
Red-eyed Vireo	43	30	44	31	28	Red-winged Blackbird	1	0	-	-	-
Blue Jay	14	14	14	12	13	Brown-headed Cowbird	6	1	2	3	1
American crow	48	33	36	29	24	American Goldfinch	2	3	0	0	2

**PIEDMONT NWR
SPRING GOBBLER COUNT
1999**

DATE	ROUTE A	ROUTE B	ROUTE C	ROUTE D
2-23-99	6	3	1	0
3-02-99	3	5	7	1
3-10-99	6	3	4	2
3-17-99	1	4	5	3
SUBTOTAL	16	15	17	6

Total: 54 Birds Counted

1b. Studies and Investigations

Several cooperative research projects were active during the year. These investigations are providing some important information that will help us manage our refuges better for their purposes and for Service objectives.

Study: Piedmont NR-82 - Red-Cockaded Woodpecker (41680-6)

This long term cooperative study between the Fish and Wildlife Service and the Forest Service has been investigating the population dynamics, habitat use and needs, the effects of hardwood encroachment, and other limiting factors of the red-cockaded woodpecker since 1982. In early December 1995, the refuge was informed that the Clemson research unit would not be able to continue their work from loss of funding. Since most RCW research has been in the Coastal Plain, this study has been an important effort to evaluate if the RCW can be effectively managed in the Piedmont Region. Starting with the 1996 nesting season, refuge personnel conducted all population monitoring on the refuge.

Cavity trees and RCW populations are monitored regularly during the peak field season

running from March 15 to the early part of July. Nestlings are banded with colored leg bands and cavity trees are regularly climbed to check for reproduction, nest competitors, abandonment, etc. Refuge staff will continue to evaluate population response to artificial nest cavity inserts. It is hoped the use of these artificial cavities will speed up population expansion. More detailed information on study results can be found in the wildlife management section of this report.

Study: Piedmont NR 98 - Adaptive Management of The RCW (41680-2)

This was the second of two seasons of research conducted by Carole Anderson under Dr. Mike Conroy of the University of Georgia. The study was in conjunction with RCW adaptive management studies 91772 and 91757. Data was collected to update Piedmont's RCW clan composition and distribution, and to determine the within-season survival and dispersal of banded adults and fledglings. Research will attempt to determine if there is a coordination between fire history and clutch size.

Study: Georgia Herp Atlas Project - Piedmont Permit # 91777

For the third and final year, Georgia DNR used the refuge as a collection area for the Georgia Herpetological Atlas project. The purpose of this study is to provide baseline data on the distribution and relative abundance of all reptiles and amphibians. We are eagerly anticipating publication of the atlas.

Study: Piedmont NR 90- Maintaining Red-Cockaded Woodpecker Habitat(41680-9)

Researchers from the U.S. Forest Service's Southeastern Fire Lab are in the fifth field season of a study to determine optimum treatment for understory control in RCW colonies. The use of chemical control, warm and cool season fire, mechanical control and a combination of these methods is being tested in a series of small replicated plots on the refuge and on the Hitchiti Forest in an effort to determine the best way to suppress and control understory encroachment. No test plots were burned on Piedmont 1999. This is the eighth year of a scheduled 20 year study.

Study: Piedmont NR 93 - Response of a Mature Mixed Pine-Hardwood Forest to a Tornado Disturbance

This is a scheduled 20 year study by Dr. Tim Herrington of the University of Georgia to determine vegetative response and succession in a Piedmont ecosystem to a major tornado. In this fourth year of the study, graduate students continued to concentrate on determining what factors affect the type of damage sustained by a tornado, the responses of damaged trees to the types of damage sustained, and the survival and performance of seedlings with varying resource levels. Piedmont's November 1992 tornado virtually removed loblolly pine from its path. Research showed that smaller trees sprouted more often than larger trees, broken trees exhibited more sprouting than uprooted trees, and undisturbed trees exhibited the greatest basal area growth response, which was positively

correlated with tree size. Damaged trees exhibited the greatest height growth; however, undisturbed trees possessed both greater initial crown lengths and changes in crown lengths. Soil pits resulting from tree uprooting were colonized by early successional species, especially tulip poplar. However, because soil pits only occupied approximately 3% of the area, early successional species will be only a minor component of the recovering stand. Results from short term data indicate that regeneration was almost exclusively from advanced vegetation.

Study: FS-SRS-4104-216(2) - Herbaceous Plant Response to 2-Year Burning Cycles

This is an 8-year study being conducted by Dale Wade of the U.S. Forest Service. Plots on Piedmont and the Oconee National Forest are being sampled. Refuge Personnel burned upland pine plots on Piedmont in 1998, and will do so again in 2000. These test plots are being burned during the warm season. Application of prescribed fire at different calendar dates during the growing season is expected to promote the establishment of native grasses and provide more efficient root kill of intruding hardwoods. Wade will use data gathered from these plots to determine the effects of warm season burning on herbaceous species composition. 1999 was the second year of this eight-year study.

During the spring season in any one week as many as 20 non-refuge people are working on research projects on the refuge. These efforts will provide critical information for long term refuge management. In addition to these formal studies, refuge personnel conduct approximately 20 scheduled evaluations, and as needed do special evaluations and investigations.

2. Habitat Restoration

2a. Wetland restoration: On-refuge

No activity this year

2b. Upland restoration: On-refuge

In a combined effort with Georgia Power Co. and the Georgia Dept. of Natural Resources, 6.5 acres of the power line right-of-way on Piedmont refuge were planted with a mix of native grasses. This project is part of a statewide initiative known as WINGS. This native grass will provide excellent food and cover for many species of wildlife.

2c. Wetland restoration: Off-refuge

No activity this year

2d. Upland restoration: Off-refuge

No activity this year

3. Habitat Management

We have attempted to look at refuge habitats and habitat management from an ecosystem perspective for many years. The emphasis on ecosystem management is not new to us. Even though we may now look at it on a different scale and may have a different administrative or geographic management unit, we will continue working with the same principles and for the same objectives.

The original purpose of the refuge was to serve as a refuge and breeding ground for birds and other wildlife. The press release and letter that accompanied the Executive Order establishing the refuge also stated that it would and should be a good area to demonstrate how worn out, eroded land could again be made productive for wildlife and forests. The refuge is also managed for the objectives of the Fish and Wildlife Service including endangered species, migratory birds, wildlife native to the ecosystem, environmental education, and wildlife oriented recreation.

The key to fulfilling the purposes of the refuge and meeting FWS objectives is working through the ecological succession process to provide the various habitat needs for refuge wildlife. Our two refuges contain a diversity of habitats associated with upland and bottomland forests that provide the needs of wildlife found in the ecosystem.

3a. Manage water levels

Piedmont Refuge's many man-made ponds are maintained by a dike system. Pond water levels, especially those containing Robust Redhorse suckers, are regularly monitored by refuge staff.

3b. Manage moist soil units

The Little Rock dewatering area contains a series of four impoundments. The largest, pond 21A, serves as a children's only fishing area in the spring and summer and provides a water source for flooding the other 3 basins during the winter. All water management is by gravity flow. The area contains a small green tree reservoir and one area where limited crops are planted for waterfowl. The Allison Lake dewatering area is drawn down and managed for moist soil plants, such as wild millet.

Unfortunately, the Little Rock dike rehabilitation project was not completed as an MMS project in 1999. The cover crop remained standing but was not flooded, and archaeological surveys and soil tests were completed for the area. Ducks Unlimited has provided matching funds for a MARSH project in 2000. The work will be completed using a force account along with the matching DU money.

3c. Graze/mow/hay

Permanent open areas include 565 acres in old fields that are scattered across the refuge, 322 acres in road shoulders, and 177 acres in power line right of ways. 1999 maintenance of open

areas included harrowing all of the permanent old fields and strip mowing to retard succession on road shoulders and right of ways.

3d. Farming

The only crop activity on the refuges is limited to approximately 10 acres of corn that is planted at the Little Rock dewatering area for waterfowl. The crop provides food for ducks and other animals such as raccoons and deer. No corn was planted during the summer of 1999, nor were the impoundments flooded in the fall. The lower impoundments will be rehabilitated as part of a Ducks Unlimited MARSH project starting in the spring of 2000. Planting will resume in 2000.

3e. Forest cutting

The 1998 timber sale to Willie Toles in Compartment 21 was completed in April. The contractor, Willie Toles Logging, did an excellent job in harvesting the timber.

The timber sale in Compartment 25 was sold to Cedar Creek Logging (Joe Davis) on April 20. He began cutting April 26. He pulled off the sale the last week of June leaving about 94,000 board feet of pine saw timber uncut.

Southern pine beetles are always present in the forest. During periods of extreme weather when the pine trees are under serious stress, the beetle populations can expand rapidly and destroy thousands of trees. The only known, effective way to control the spread of the beetles is to remove the infested trees before the beetles, which have bored into the trees to lay their eggs, emerge to find and infest new trees and kill them over a large area. The refuge trees are probably more susceptible to the southern pine beetle because of the poor subsoils that cover the refuge. The red-cockaded woodpecker and the older trees it needs are at risk.

An aerial flight was made in July to locate any southern pine beetle spots. Fifteen spots were seen. The active spots were marked for cutting to control the spots. A contract was awarded to Willie Toles Logging to cut this timber. 172 cords of pine were cut for a value of \$7,057.42.

Another contract was awarded to Willie Toles Logging in June to remove some timber near the dam of Pippins Lake so the dam could be repaired.

Amount of timber cut in 1999:

Pine saw timber:	579,692 board feet
Pine pulpwood:	616 cords
Hardwood pulpwood:	243 cords

Total receipts from all sales:	\$272,816.80
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Marking of the timber sale in Unit 1 of Compartment 5 was finished. The sale will take place in 2000. Also, a prescription cruise for Compartment 10 was initiated.

3f. Prescribed Burning

Prescribed burning is one of the primary management tools used to create and maintain habitat on Piedmont. The red-cockaded woodpecker is a species adapted to fire-created and fire-maintained habitat. Other species of special interest and concern such as the Bachman's Sparrow and the Prairie Warbler are dependent on this habitat. Without fire to retard succession the RCW will soon abandon cluster sites.

Winter fire has been the primary fire technique used in the refuge loblolly/shortleaf forests for 35 years. Fire exclusion had been practiced for 15 years prior to the beginning of burning in 1962. We have begun experiments with warm season fire over the past few years. Concern for smoke management has increased the complexity of the burning program.

Research has indicated that the fire rotation in the Piedmont needs to be 3 years in order to keep the understory encroachment in RCW cluster sites under control.

In 1999 prescribed burns were conducted in Compartments 2, 8, 10, 12, 13, 15, 17, 18, and 19. A total of 3615 acres were burned during the calendar year. Two burns were made using a helicopter.



Prescribed fires like these help maintain openings and retard succession.

Openings found on the refuge play an important role by providing primary successional habitat needed by certain wildlife species. While there is concern for certain interior forest species, there is also concern for a number of early successional species ranging from Bachman's Sparrow to the bobwhite quail. The openings are also important for the refuge turkey population. Sixty-three acres of openings were burned during the winter burn period. The field at Allison Lake and Little Rock field were also burned during this period.

Most forests at Bond Swamp are bottomland hardwoods. No management, other than protection, was utilized during 1999 and none is anticipated at this time.

There is an area of pine/hardwood on the higher ground at Bond Swamp. Part of this is longleaf pine that could benefit from prescribed fire. However, we have not written fire plans for the area and do not anticipate having staff to do any planning or management in the near future.

A wildfire occurred April 13 in Compartment 31. The persons leasing Dewitt Hawes' land were conducting a prescribed fire. The fire jumped their firebreaks in two spots and burned 4 acres on the refuge. A second wildfire occurred October 30 during one of the refuge deer hunts. It burned 2.5 acres in Compartment 21.

3g. Control pest plants

In 1998, herbicide and grass carp were implemented in ponds 11A and 11B to control the noxious aquatic weed hydrilla. Since these ponds are used for robust redhorse stocking, we have kept a close eye on this problem. So far, the grass carp and herbicide treatments have been successful in controlling hydrilla.

4. Fish and Wildlife Management

Significant management activities were as follows:

The Red-cockaded Woodpecker

The red-cockaded woodpecker (RCW) is a resident endangered species found on Piedmont. This bird is very habitat-specific. The red-cockaded is a fire adapted species that needs open pine stands maintained by fire. As with most endangered species, the RCW became threatened because of the loss of habitat. There are 5 concentrations of birds in Georgia. Two of these are associated with military bases, two with National Wildlife Refuges, and one with private plantations in south Georgia.

Intensive management and research are required on the public lands to maintain and recover the remaining RCW populations. Present RCW management on the refuge is in accordance with the guidelines established by the Red-cockaded Woodpecker Recovery Plan and a Section 7 endangered species evaluation of our management program. Using recovery guidelines and our management plan, the refuge provides both current and future habitat for a goal of 96 groups of red-cockaded woodpeckers. The refuge has a cooperative agreement with the adjoining Oconee National Forest to provide habitat and management for additional groups of RCW's.

During the 1999 nesting season natural cavity and insert trees were climbed on a regular basis to determine use, reproduction, and competition. Half of all nestlings are banded with colored leg bands that will identify them as an individual and to the group they were born in. In 1999 the Piedmont/Hitchiti RCW population had 53 active groups. The refuge alone had 37 active groups, an increase from 35 in 1998. Of these 37 groups, 25 groups nested, making a total of 27 nesting attempts. Twelve artificial insert clusters were used. A total of 143 flying squirrels were found in 27 cavities with four nests being lost to these cavity competitors. Enlarged RCW cavities are also used by other wildlife, including fox squirrels and other bird species.

Thomas Payne attended an RCW translocation strategy meeting in Tallahassee, FL. The meeting discussed the allotment of surplus RCW's that could possibly be translocated to areas where more birds are needed to sustain a viable population.



This juvenile male RCW was banded as part of refuge management objectives

Piedmont National Wildlife Refuge RCW Reproduction 1995-1999

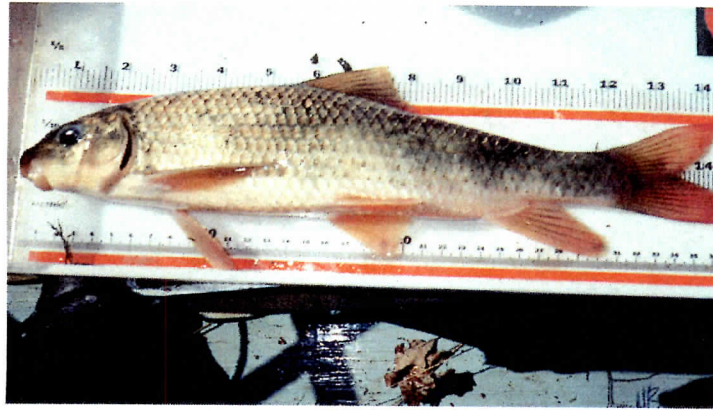
	1995	1996	1997	1998	1999
Active Groups	27	32	36	35	37
Nesting Groups	22	25	30	28	25
Nest Attempts	25	29	38	34	27
Eggs	89	91	104	98	99
Nestlings	57	49	50	48	46
# Banded	49	47	24	25	26
Insert Clusters Used	8	13	13	15	12
Adults Observed	62	65	70	84	99

The Robust Redhorse

In 1996 five small ponds on Piedmont NWR were obligated for establishment of a refugial population of the imperiled robust redhorse, (*Moxostoma robustum*), as part of a cooperative prelisting recovery effort for the species. The pond stockings were prescribed to alleviate the immediate threat of extinction, as well as provide broodfish grow out, and large juveniles for stocking in riverine habitats. Since 1996 yearling and age 1 juveniles have been stocked in these ponds, and the 1998 stocking brought the total number of robust redhorse to approximately 6,000 individuals. Population monitoring in the ponds indicates good initial survival of the fish with significant growth. Fish from the 1995 year class are approaching 400mm total length.

Triploid grass carp were introduced into ponds 11A and 11B in October, 1998 to control hydrilla infestations in these ponds. The grass carp have been successful in controlling the hydrilla, and significant reductions in pond coverage are being observed. Robust redhorse from the refugial ponds will be used in the year 2000 to augment the Oconee River population and to facilitate reintroductions within the species former range.

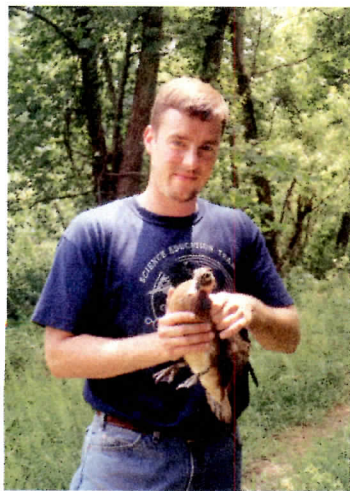
In the summer of 1999, the water control structure at pond 11A showed signs of age, as the water level began dropping. To protect the robust redhorse stocked in this pond, the exit drain pipe was temporarily covered. Plans are being made for the removal of robust redhorse in the pond, so that refuge staff can rehabilitate the water control structure. After the pond is rehabilitated in 2000, it will continue to be used for stocking robust redhorse.



Robust Redhorse in refuge ponds were checked for health, growth, and survival rates.

4a. Bird Banding

Wood ducks were trapped and banded from 4 sites on Piedmont in the summer of 1999. Only 16 birds were banded this year. However, many birds were re-trapped from previous years. This trapping activity is extremely time-consuming and with a limited staff we were not able to meet the refuge banding quota. Volunteers helped with banding and baiting.



Georgia College interns Stan Hendley(l) and Dustin Gay(r) assist with Piedmont wood duck banding.

Twenty-six red-cockaded woodpecker nestlings were banded in late spring. The color-coded bands will be used to identify birds in monitoring activities.



Tom Payne demonstrates RCW banding to local high school students.

4b. Disease monitoring and treatment

Nothing to report

4c. Reintroductions

Nothing to report

4d. Provide nest structures

Wood Duck boxes at Piedmont and Bond Swamp were checked in July. Of the 118 available boxes, generally more than half of them are utilized by Wood Ducks (64% in 1999). Other species including screech owls, bluebirds, and great-crested flycatchers also used the boxes. No

new nest boxes were erected in 1999. Also, 56% of the boxes used were successful.



Greg Walmsley checks wood duck boxes for nest success.

In 1992, we began using inserts (artificial cavities) to supplement the natural cavities for red-cockaded woodpeckers. This activity allows for more rapid population expansion and helps maintain a habitat corridor between the northeastern and southwestern sections of the refuge. In 1999, refuge staff maintained 23 artificial insert clusters. Four new artificial cluster sites are proposed for 2000. The artificial insert program continues to show signs of success, as 12 artificial cavities were used in 1999.

4e. Predator and exotic control

Triploid grass carp are still actively controlling hydrilla in pond 11B.

Southern flying squirrels are active nest predators of the endangered red-cockaded woodpecker. Our forestry technicians regularly remove southern flying squirrels from red-cockaded woodpecker nesting cavities during the breeding season. In 1999, 143 squirrels were removed from 27 cavities.

At Bond Swamp National Wildlife Refuge, the presence of exotic feral hogs is a major threat to refuge resources. In December 1999, the first refuge deer/hog hunt was held, in which thirty-three hogs were harvested. Two more hog hunts will take place in January and February, 2000. In addition to hog hunts, refuge personnel is currently working on a feral hog control plan to

combat these exotic pests.



Michael Whitaker of Swainsboro, GA killed two boars on the first Bond Swamp deer/hog hunt in December.

5. Coordination Activities

Much of what we were able to accomplish during the year was through coordination activities.

5a. Interagency coordination

We continued to work under a formal cooperative agreement with the U.S. Forest Service to provide habitat, management, and research sufficient to support a viable red-cockaded woodpecker population on the combined properties of Piedmont National Wildlife Refuge, Hitchiti Experimental Forest, and Oconee National Forest. We worked cooperatively on red-cockaded woodpecker research and regularly met together to share information and to jointly plan needed work. Our fire crew assisted Forest Service researchers from the Fire Lab in Macon in burning long term research plots on red-cockaded woodpecker habitat maintenance located on the refuge and on Hitchiti.

A formal agreement places hunting on the Hitchiti Experimental Forest under the Piedmont hunt permit program with the refuge responsible for biological and enforcement work associated with the hunts. Because the National Forest has only one enforcement officer, refuge officers have also been requested to assist in drug eradication and other enforcement efforts.

The refuge worked cooperatively with several divisions of the Georgia Department of Natural Resources throughout the year. Refuge staff assisted with practical exercises and wildlife management training for the new ranger training class that was conducted at the nearby Georgia Public Safety Training Center. DNR assisted the refuge with enforcement on several hunts and on Bond Swamp because of the decreased number of refuge officers available. DNR also used refuge facilities for several other meetings during the year.

The refuge worked with the Fisheries Division often during the year on the Robust Redhorse Recovery Project. The Service is involved with many partners in this recovery effort including: the Georgia DNR, South Carolina DNR, North Carolina Wildlife Resources Commission, U.S. Forest Service, National Biological Service, University of Georgia's Daniel B. Warnell School of Forest Resources, Georgia Power, Carolina Power & Light, Duke Power, and the Georgia Wildlife Federation.

The refuge and the neighboring Jarrell Plantation State Historic site worked together on programming and some equipment sharing.

The National Biological Service has a research project underway on the refuge. We have worked with them to provide trailer working and living space at the Pippins Lake campground and have provided them with the use of refuge radios to help ensure the safety of researchers in the field. A 60' trailer that came from Chickamauga National Battlefield and 3 camping trailers have been set up. This has greatly facilitated needed research efforts and will hopefully help us continue in the future.

We cooperate with the public works departments, sheriff's departments, and emergency services in Jones, Jasper, Bibb, and Twiggs Counties and monitor radio frequencies with 2 of the counties. Joint assistance ranging from road work to law enforcement was received and given during the year. A Jones County fire station is located on the refuge in Round Oak and provides structural fire protection.

The National Park Service and the Jones and Jasper County Sheriff's Departments used the refuge firing range for training during the year.

We have signed a cooperative agreement with the Macon Museum of Arts and Sciences to provide environmental education on the Museum's Brown's Mount project and on the adjoining Bond Swamp National Wildlife Refuge. Several cooperative programs were conducted during the year.

Refuge staff provided technical assistance at the local, state, and regional level during the year. We coordinated with the Brunswick Ecological Services Office on several projects in the middle Georgia area during the year. We have an excellent cooperative working relationship with our Brunswick field office.

On August 11, USFWS representatives, including refuge personnel, met with members of the Georgia tourism and trade commission. The meeting topics were program evaluation and ecotourism. The commission is working on a workbook for tour guides in Georgia, as well as a television marketing campaign. Georgia Power Co. and the Georgia DNR each contributed \$10,000 to this project. The U.S. Forest Service and National Park Service are also involved in this outreach initiative.

Geoff Donaldson, Carolyn Rogers, Thomas Payne, and Ronnie Shell spent several days assisting Georgia DNR with training for their new LE Rangers.

5b. Tribal coordination

No activity this year.

5c. Private land activities

Manager Shell worked with private landowners providing technical advice on waterfowl, wildlife and forest management.

5d. Oil & gas activities

No activity this year.

5e. Cooperative/Friends Organizations

We worked cooperatively on joint censuses and surveys with DNR and regularly "bounced" ideas

off each other and shared information.

We cooperated on several fires with the Georgia Forestry Commission and attended planning sessions at Commission headquarters. Regular communication with the local forest fire unit was also beneficial for all involved.

We worked together with the National Park Service's Ocmulgee National Monument on cooperative efforts and provided mutual assistance to each other.

We spent much time on USFWS ecosystem management efforts including meeting and planning with partners.

Georgia is a model state for developing a Partners in Flight program for migratory neotropical birds and other land birds of special concern. We are very active and supportive partners in this effort. Through Partners in Flight, the refuge has also become involved with the Piedmont Landscape Initiative. This will involve partnerships between timber industries and state and federal lands in central Georgia for landscape forest management. In 1999, the refuge was recognized for its efforts when Refuge Manager Ronnie Shell was presented with Partners in Flight's annual Stewardship Award for 1998.

The Piedmont Landscape Initiative has come to be known as the Georgia Piedmont Natural Resources Cooperative (GPNRC). It consists of nine businesses and public agencies working together toward sound land stewardship on a landscape level. Together, these nine organizations voluntarily work toward the common goal of maintaining or improving plant and animal diversity in the Georgia Piedmont. We are very active partners in this cooperative, and conduct annual point counts on the refuge. The partners' collective point counts will help establish a baseline database for migratory bird populations in the Georgia Piedmont. In 1999, DNR hired Nathan Klaus as coordinator for the cooperative. Nathan has done an excellent job of networking the various partners and setting initiatives for the group.



Manager Shell works with representatives of cooperating agencies.

The refuge is involved in the Ocmulgee Heritage Greenway initiative, which targets a 45 mile stretch of river running from Piedmont NWR through Macon to Bond Swamp NWR and continues south to Warner Robins Air Force Base. The local communities have been overwhelmingly supportive with concerns primarily regarding law enforcement and safety issues. This initiative involves federal, state, and local government agencies, Trust for Public Land, local conservation organizations, and private citizens. The partnerships will make the river and associated lands accessible for a variety of recreational uses while protecting the river's system of hydrology and bottomland hardwoods. The first phase of this project is concentrating on land acquisition from Macon south to Bond Swamp Refuge. The refuge assisted in writing a grant for North American Wetland Conservation Act monies in 1997. This grant was successful and we received one million dollars from NAWCA for land acquisition with over 2 million dollars in matching contributions from the Georgia State Rivercare Program. Zell Miller, the governor of Georgia, announced the matching contribution at an event in July of 1998. At the event 7 land managing agencies, including the FWS, signed a MOU to guide this partnership in the future. The partners supported the refuge in writing an environmental assessment to expand the refuge boundary from 6,500 acres to 18,000 acres. The Trust for Public Land has already secured options on several tracts while working with other landowners. With grant monies and tract options secured, the refuge added 1,000 acres title and another 1,000 acres through a lease agreement when the EA was finalized in early 1999.

Partnerships and cooperative efforts were truly a critical part of our refuge operations in 1999. We could not have been successful without them.

6. Resource Protection

6a. Law enforcement

We use a combination of active and preventative law enforcement to protect the refuge and refuge visitors. Even with proactive programs, we still encounter a diversity of violations each year. With increased public use, increasing area populations and easy access to the refuge we now encounter as many non-wildlife violations as we do wildlife violations.

In July 1999, Thomas Payne filled the vacant Refuge Law Enforcement Officer position. Tom's previous experience at Piedmont will be a valuable asset in future law enforcement efforts.

In 1999 we reported 175 law enforcement incidents ranging from hunting violations to DWI and disorderly conduct. A total of \$5,525 in fines were forfeited.

The refuge assisted with training for the Georgia DNR Basic Ranger Class. For three nights, refuge officers served as role players for training scenarios. The scenarios proved to be valuable leaning experiences for both the role players and trainees.

Law enforcement at Bond Swamp National Wildlife Refuge remains a major challenge, due to limited personnel and poor access to the refuge interior. Twiggs County DNR Ranger Lee Brown was a great help during the first refuge hunt and in general law enforcement activities.

We continued to work with four counties and several state and federal agencies during the year.

6b. Wildfire preparedness

Two wildfires occurred on the refuge in 1999. On April 13, in compartment 31, a prescribed burn conducted by leasees of Dewitt Hawes' land jumped a fire break and burned 4.1 acres on the refuge. The other occurred on October 30 in compartment 21 during a refuge deer hunt, and burned 2.5 acres. Neither wildfire caused any substantial damage to property or wildlife.

Our best form of wildfire preparedness is to use caution in our prescribed burning operations. Careful mop-ups were conducted after every burn, with burn areas being monitored for many days after the burn. Most fire equipment received maintenance work and upgrading. As equipment ages, maintenance problems will continue to grow.

6c. Manage permits and economic uses

Two special use permits were issued to private timber companies involved in refuge forest thinning operations. Two other companies were allowed refuge access to cut on private land.

Other special use permits were issued for research, hunts, firewood collection, and other special activities on the refuge. All requests for permits are thoroughly reviewed to ensure refuge

compatibility.

6d. Contaminant investigation and cleanup

No activity this year.

6e. Manage water rights

Based on discrepancies between established survey lines, markers, and plats, there remains some confusion over the exact boundary line between the property line of Mr. L.C. Phillips and Bond Swamp National Wildlife Refuge. The northeast corner of the Phillips tract lies either on or very close to Stone Creek at a stretch of the creek known as "Big Eddy". Manager Shell is currently working with surveyors and reviewing historic plats and documents to determine the exact property line on or near the creek.

6f. Manage cultural resources

Regional Archaeologist Rick Kanaski conducted archaeological surveys on Piedmont NWR before the dike rehabilitation projects were initiated.

Annual refuge management plans were reviewed for compliance with environmental and cultural resource mandates.

6g. Federal Facility Compliance Act

The Federal Facility Compliance Act was applied throughout the year to safely store and properly dispose of potentially hazardous materials.

6h. Land acquisition

No land was acquired by Piedmont Refuge. However, Bond Swamp NWR completed an environmental assessment to expand the acquisition boundary from 6,500 acres to 18,000 acres in early 1998. The adjacent Timberlake tract was acquired under fee title with a North American Wetlands Conservation Act grant. An additional 880 additional acres of wetlands were transferred to the Service through the Trust for Public Land in May 1999.

The Trust for Public Land (TPL) also secured 733 acres of wetlands on the adjacent McNair tract, as well as 100 more acres of the Timberlake tract with the State of Georgia's "Rivercare 2000" funds. These tracts will be transferred from TPL to the Georgia Department of Natural Resources. The lands will be owned under fee title by the State of Georgia, but will be managed as part of Bond Swamp NWR through a long-term agreement. These three new tracts are all on the west side of the Ocmulgee River, opposite from all previously existing refuge lands. Another tract of 185 acres is under option with TPL for "Rivercare 2000" funds.



The Region 4, Area 2 division of realty's acquisition team poses before a Bond Swamp canoe trip on Stone Creek.

6i. Wilderness and natural areas

A research natural area of 188 acres is located in Compartment 32. The area is classified as SAF-80, loblolly-shortleaf pine type.

6j. Threats and conflicts

The feral hog population at Bond Swamp is a serious threat to refuge resources and wildlife. Hog rooting and wallowing signs are present throughout the refuge. Refuge hog hunts will have a minimal impact on the population of these exotic pests. The new assistant manager for Bond Swamp is currently working on a hog control plan for the refuge.

7. Not Applicable (Alaska)

8. Public Education and Recreation

8a. Provide visitor services

Public participation is important to the Service and our refuges. In addition to the regular public involvement and comments we get each year, we receive intense public interest and comments involving hunt fees and potential cutbacks in refuge public use programs.

We have attempted to ensure that all public use on the refuge is wildlife oriented and compatible for the purposes for which the refuge was established. Formal compatibility evaluations of all refuge public uses were conducted in 1994. All the uses were found to be compatible.

Because no funding and personnel have been made available for Bond Swamp, that refuge has never been opened for public use. There was great public support in the area for the refuge when it was established. Many questions are now coming from the local area about when the refuge will be opened for public use. The refuge is actively involved with the Ocmulgee Heritage Greenway project, which encompasses a 45 mile stretch of river from Piedmont Refuge to Bond Swamp Refuge. In addition to land acquisition, this project is developing more outdoor recreational opportunities for the public. By working with partners, we hope to gain the necessary resources to offer more activities at Bond Swamp.

Hunting

Public hunting was a popular activity on Piedmont and Bond Swamp in 1999. It serves as a management tool for some species, and provides good recreational opportunities for the public. This was the ninth year for the hunt permit fee system. Even though the application fee was abolished after the 1994 deer season, we continue to have some confusion in relation to this matter. We still had questions from folks who thought the 1994 increased fees were part of an effort by the Service and anti-hunting groups to eliminate hunting from National Wildlife Refuges. Others questioned how permit fee monies are used, and were surprised to find out that the refuge only received 30% of these funds. Beginning with the 1998 turkey season the refuge hunt fee collection was placed in the National Recreation Fee Demonstration Program (NRFDP). While under this program, the refuge will receive 80% of the fees collected to be used directly on site. During the 1999 deer hunt season, we participated in a NFRDP questionnaire. The majority of respondents were again in favor of the increase in percent of monies returned to the station.

Bond Swamp NWR opened to limited public use for the first time with a deer/hog hunt in December. Demand for this hunt was high, due in part to a feature article printed by Georgia Outdoor News in the summer. The quota of 75 hunters was filled, and the hunt boasted a success rate of 87%. Twenty deer were harvested (15 bucks, 5 does), as well as 33 hogs (16 boars, 13 sows). Most of the deer checked in were in fair to good health, and a few bucks checked in showed signs of disease and/or malnutrition. Nevertheless, the hunts went quite well, and hunters

were impressed by our visitor service. Two more hog hunts are scheduled for January and February, 2000. More than three thousand applications were requested for the 125 quota slots.



Michael Boozer of Locust Grove, GA displays his ten point buck taken during the first Bond Swamp deer/hog hunt.

The Piedmont deer hunts were very successful with 556 deer checked in at the refuge check station. The refuge received numerous compliments from the hunters. Antler development and body weight of the deer were above the 10 year average.

The most rewarding hunt was the ninth annual Piedmont Deer Hunt for Disabled Hunters who are wheelchair-bound. Held during National Wildlife Refuge Week, the event provides an atmosphere of hospitality and fun for the hunters. The Georgia Handicapped Sportsmen Association has been our partner in putting this hunt on. This year's hunt had 33 hunters. They harvested 13 deer (7 bucks and 6 does). The fellowship among hunters and the chance to share with those in similar situations means as much to the hunters as the chance to kill a deer. Thirty-nine volunteers worked 892 hours during the 3-day event, assisting refuge staff in placing hunters, carrying deer back to camp, processing and collecting biological data from the deer and in cooking and helping the hunters in camp. The hunters camped in the refuge campground, which is accessible to wheelchair users with the addition of concrete pads and ramps. The Georgia Outdoor News and Safari International in cooperation with Coca Cola of Macon donated all drinks for the event. The Georgia Wildlife Federation organized many members to volunteer during the event assisting Refuge staff. The Georgia Wildlife Federation, Lance Foods, Ingles and Food Lion grocery stores, and many local citizens donated food for the event.

National Wildlife Refuge Week also coincided with the handicapped hunt and thus both events

received ample news coverage from local media. Local schools were sent teacher packets the first week in October.

The Piedmont winter raccoon and small game hunts were popular and caused us very few problems. During the winter holiday period, Piedmont was heavily used by rabbit and squirrel hunters.

Interest in the Piedmont spring turkey hunts remained high with the quota of 1000 hunt slots being filled. Fifty-two gobblers were harvested, which is one of the highest harvests since turkey hunting started on the refuge in 1980. We have limited the number of hunters per hunt and closed some access roads during turkey season to help maintain a safe and high-quality hunt.

Summary of 1999 Piedmont NWR Deer Hunts

TYPE HUNT	DATES	HUNTER DAYS	HARVEST
Archery (ES)	Sept 18-Oct 3	1,200	12
Handicapped Hunt (ES)	Oct 15-16	66	13
Bucks Only	Oct 28-30	3045	171
Primitive Weapons (ES)	Nov 4-6	2606	151
Either Sex I	Nov 12-13	2091	144
Either Sex II	Nov 19-20	1391	65
Totals:		10399	556

Bond Swamp NWR Deer/Hog Hunt Results December 9-11, 1999

Hunt Quota: 75 hunters	Participants: 61 hunters
Deer Harvested: 20 (15 bucks, 5 does)	Hogs Harvested: 33 (16 boars, 13 sows)

1999 PIEDMONT TURKEY HUNT STATS

Total birds = 52
Adults = 35
Jakes (1yr) = 16

1 st hunt (March 26-28):	killed 20 birds
2 nd hunt (April 2-4) :	killed 16 birds
3 rd hunt (April 9-11) :	killed 6 birds
4 th hunt (April 16-18):	killed 1 birds
5 th hunt (April 23-25):	killed 9 birds

Average adult weight	= 18.6 pounds
Average adult beard length	= 9.1 inches
Average adult spur length	= .99 inches

Heaviest weight	= 22.25 lbs
Longest beard	= 12.50 inches
Longest spur	= 1.38 inches

Fishing

Fishing interest and pressure are surprisingly high on Piedmont's small impoundments. The refuge fishing season opened on May 1 and closed on September 30 to minimize conflict with nesting Wood Ducks, and to keep the fishing program compatible with the refuge mission. Quite a few good catches were made with some bass over 10 pounds and catfish up to 12 pounds caught.

The four ponds holding Robust Redhorse Suckers (ponds 7A,9A,11A, and Pippins Lake) remain closed to fishing. Boats are allowed only in Pond 2A and Allison Lake.



Anglers of all ages enjoy fishing at Piedmont National Wildlife Refuge

Fishing interest is high at Bond Swamp as well. The refuge will open to limited bank fishing for the first time on March 15, 2000.

Wildlife Observation

Interest in wildlife observation increases each year. We recorded birders from across the United States and several foreign countries. Many of them come trying to find a red-cockaded woodpecker or Bachman's sparrow. In addition to birds, people drive through looking for deer, turkey, and other obvious species of wildlife.

Other Wildlife-Oriented Recreation

Many visitors enjoy a combination of observing wildlife and the quiet serenity of the woods. Areas and roads apart from the specific wildlife foot and driving trails are being used more for scenic type driving and hiking. Photography also continues to be a popular refuge use. Bond Swamp remains closed to general public use, but we plan to open some hiking trails and wildlife viewing areas in fall 2000.

Camping

The only public camping allowed is during the refuge big game hunts. Several hundred people camped for the deer and turkey hunts.

Special use permits are also issued to scout groups enabling them to camp as part of an

environmental education and service project visit to the refuge. Most litter pickup and trail maintenance was accomplished by Scouts during the year.

Off-Road Vehicling

The only off-road vehicles allowed on Piedmont refuge are those used by wheelchair bound hunters, through a special use permit for ATV's on foot travel only roads. On an experimental basis, Bond Swamp hunters were allowed to use ATV's on designated trails. This use was carefully considered, evaluated, and enforced to comply with refuge missions and goals.

Outdoor Classrooms - Students

School groups from Jones, Jasper, Monroe, Baldwin, and Bibb Counties used Piedmont refuge throughout the school year as o. 1,605 students participated in wildlife interpretive programs and environmental education activities. Most of these groups required assistance from a refuge staff member.

Ecology, biology, wildlife, and forestry classes from the University of Georgia and Mercer University regularly used the refuge as an outdoor classroom. These trips were mostly led by professors with assistance required from the refuge staff. Classes from Georgia College in Milledgeville also visited the refuge.



Mercer University students enjoy an educational canoe trip on Bond Swamp's Stone Creek.

Outdoor Classrooms - Teachers

John Gahr conducted teacher workshops again this year for more than 50 area teachers.

For the third consecutive year, inner-city middle school students from the Emory University Science Camp visited Piedmont to learn about wildlife management, endangered species, and migratory birds.

Interpretive Foot Trails

Piedmont has 3 interpretive foot trails. Two of the trails begin at the Allison Lake parking area. The Allison Lake foot trail has an interpretive leaflet with numbered stops and runs along and near the lake. The red-cockaded woodpecker foot trail traverses several habitat types from the parking lot to an active red-cockaded cluster approximately 1.5 miles away and returns to the parking area. A third trail has been constructed by eagle scouts that makes a loop from the backyard habitat at the refuge office to the Allison Lake trail and back along a small stream. These trails receive good use from wildlife watchers, hikers, and curious visitors.

Scout groups and other volunteers did most of our trail maintenance in 1999.



These volunteers helped maintain the backyard habitat area.

Interpretive Tour Routes

The Little Rock Wildlife Drive is a 6 mile self-guiding auto tour route that is accessed from the Round Oak-Juliette Road. The drive has 12 stops which correspond to an interpretive leaflet. More than 30,000 visitors toured the wildlife drive in 1999.

Other Non-Wildlife Oriented Recreation

We are having a noticeable increase bicycling on roads open to vehicles on the refuge. The refuge also is receiving an increase in requests for non-wildlife oriented recreation from horseback riding to dirt bike races, swimming, camping and so on.

8b. Outreach

During the year we met with groups and organizations including Ocmulgee Audubon Society, Sierra Club, Georgia Wilderness Society, Wildlife Federation, sportsmen's clubs, chambers of

commerce, civic groups, tourism and development groups, and others. We also met with and listened to the concerns private individuals, and received many written comments and letters. Through these contacts, the public was able to ask questions and voice input on refuge management programs and operations.

Refuge staff was actively involved in several demonstrations and exhibits during 1999 that reached thousands of people with an interpretive message. Piedmont was responsible for the U.S. Fish & Wildlife Service exhibits at the annual Georgia Wildlife Federation BUCKARAMA expositions in both Atlanta and Perry. Held in August prior to deer season, these shows were attended by over 25,000 people. The Refuge also staffed exhibits at the Earth Day and Indian Festival celebrations at Ocmulgee National Monument, the annual career day at Jones Co. High School, in Gray Ga. and the Environmental Field Day at Central City Park, in Macon Ga. over 5,000 participants viewed these exhibits.

John Gahr, Carolyn Rogers, and Greg Walmsley worked with Georgia Partners in Flight's Outreach & Education Working Group. The group met four times in 1999, and completed development of a prototype "educational box" on migratory birds. This activity box will be further developed and circulated throughout the Georgia Public School System.

Other Interpretive Programs

Throughout 1999 the refuge presented programs to a variety of groups on topics ranging from wildflowers to neotropical birds to refuge management. These were both on and off-refuge programs that represented both Piedmont and Bond Swamp.

Refuge foresters participated in three programs aimed at forestry and wildlife students from local schools, demonstrating various management techniques for the red-cockaded woodpecker.

We have a cooperative agreement with the Museum of Arts and Sciences in Macon for interpretative programs on the Museum's Brown's Mount and the adjoining Bond Swamp NWR. In 1999, 3 staff-lead canoe trips were made on Stone Creek. Participants were taken on a 3 hour guided canoe trip to increase awareness for the swamp and the natural resources that exist just South of the city of Macon.

A film crew from the Science and Education Productions of China Central TV in Beijing China visited Piedmont and Bond Swamp NWR for two days of filming in January 1999. The crew of three spent 4 weeks in the United States visiting National Wildlife Refuges, National Parks, and private conservation areas to produce a documentary on natural resource conservation and sustainable use practices. The documentary was aired during weekly segments over the course of the summer in China. Ye Liao, cameraman and interpreter, Yu Zhongning, director, and Guo Chen, interviewer, were the most pleasant film crew we have worked with. Although interpretation was often creative, the two day tour provided a highlight for public relations and environmental education for the refuge and the Fish and Wildlife Service.



Members of the China Central Television crew
filming refugee personnel in action.

9. Planning and Administration

9a. Comprehensive management planning

Piedmont's habitat management is carried out under comprehensive management plans. Annual management plans were prepared for forest management, fire management, water management, and openings management.

The annual fire management plan was comprehensive and time consuming to the point of being burdensome from an administrative standpoint without what appeared to be a corresponding gain in safety or program efficiency.

Some planning work still needs to be done on Bond Swamp. We are still waiting on the final refuge planning chapter.

Both refuges have been slated to begin Comprehensive Conservation Plans (CCP's) by 2005.

9b. General administration

Personnel

The refuge saw many staff changes in 1999, including the addition of an assistant manager for Bond Swamp. However, downsizing and budget restraints continue to hamper us from a personnel standpoint. A forestry position and the park ranger position remained vacant at year's end.

In April, Ozzie Castro-Poveda retired from the Equipment Operator position. Ozzie had worked at Piedmont since 1978. His experience and sense of humor will be greatly missed.

John Gahr left the Park Ranger position in May. He transferred to the Columbia River Refuge Complex in Washington. The park ranger position remained vacant at year's end.

In June, Tom Payne entered the vacant Refuge Law Enforcement Officer position after working many years at Piedmont as a forestry technician..

In August, Wayne Smith filled the vacant Tractor Operator position. Wayne previously worked for the Georgia Forestry Commission.

Greg Walmsley completed his second co-op shift in August, and will return as a full-time employee in January 2000.

Michael Lusk entered the new Bond Swamp Assistant Manager position in September. He was formerly with Ecological Services in Hawaii.



Ozzie and Paula Castro-Poveda at Ozzie's retirement party.

Piedmont's 1999 Staff

<u>POSITION TITLE</u>	<u>EMPLOYEE NAME</u>	<u>GRADE</u>	<u>APPT.</u>
Refuge Manager	Ronnie Shell	GS-13	PFT
Asst. Refuge Mgr.	Michael Lusk	GS-09	PFT
Asst. Refuge Mgr.	Carolyn Rogers	GS-11	PFT
Senior Forester	Dean Metteauer	GS-11	PFT
Co-op Student	Greg Walmsley	GS-04	CO-OP
Park Ranger	Vacant	GS-09	PFT
Refuge LE Officer	Thomas Payne	GS-08	PFT
Office Assistant	Patricia Jackson	GS-07	PFT
Office Auto. Clerk	Teresa Stephens	GS-03	TEMP
Tractor Oper.	Wayne Smith	WG-06	PFT
Eng. Equip. Oper.	Glenn McMichael	WG-08	PFT
Eng. Equip. Oper.	John Vinson, Sr.	WG-08	PFT
Forestry Tech	Geoff Donaldson	GS-05	PFT
Forestry Tech.	Vacant	GS-05	PFT
YCC Youth Leader	Hardray Dumas		YCC
YCC Enrollee	Stephen Holloway		
YCC Enrollee	Michael Bryant		
YCC Enrollee	Jonathan Gaskins		

Youth Programs

With our short staff and budget, the YCC program was a help to the refuge again this year. Four enrollees took part in this year's program which ran from June 9 to August 1. Accomplishments of this year's enrollees included the following: (1) processed about 17,000 hunt applications for mailing; (2) litter pick up at lakes and at other public areas; (3) completed several facility maintenance projects such as mowing grass, trail maintenance, washing vehicles, and cleaning the office/visitor center; (4) provided assistance in red-cockaded woodpecker and wood duck management; (5) repainted 12 miles of boundary lines at Piedmont and Bond Swamp Refuges; and (6) posted boundary signs at Bond Swamp.



The 1999 YCC crew (left to right): Jonathan Gaskins, Hardray Dumas (youth leader), Michael Bryant, and Stephen Holloway

Volunteer Programs

Volunteers continue to play a vital role in our refuge programs. In 1999 they assisted with resource projects including the annual breeding bird survey, hunt check stations, the Christmas bird count, and a butterfly survey. They also helped with environmental education programs and did service projects such as backyard habitat and wildlife trail improvements. Several scout groups also did litter pickup.

The most rewarding volunteer efforts took place during the disabled deer hunt. Thirty-three wheelchair-bound deer hunters participated in the ninth annual hunt. This year, thirteen deer were harvested (7 bucks, 6 does), and everyone seemed to enjoy their experience. This was made possible by the 39 volunteers who gave 892 hours of their time to make the hunt possible.

Volunteers assisted refuge staff and hunters in scouting, tracking, field dressing deer, and assisting in the camping area with tents, vehicles, and food preparation. The volunteers seemed to enjoy the experience as much as the hunters. In addition, BSA Troop 512 from Winder, GA built three additional hunter platforms.

The Alapaha River Chapter of the National Wild Turkey Federation (NWTF) donated ten bags of winter wheat to Piedmont Refuge.

Two Georgia College students, Stan Hendley and Dustin Gay, did a two week internship for the refuge. The internship was part of their "Maymester" college course. Dustin and Stan were a big help with RCW banding, wood duck banding, an archaeological survey, and the painting of government quarters.

Funding

Tight budgets coupled with the staffing problems to again leave us stretched very thin in our efforts to manage National Wildlife Refuges for the purposes for which they were established and for the objectives of the Fish and Wildlife Service. We still feel the effects of the 34% reduction in Expenses for Sales funding that first occurred in 1994. The amount we receive no longer covers the salaries or equipment and supplies required to carry out goals and objectives.

Safety

Safety was emphasized in all refuge activities. The annual safety program audit and safety self inspection were completed and deficiencies were corrected.

All employees were updated on CPR and basic first aid.

We have covered bio-hazards including blood in safety training sessions and have provided each staff member a bio-hazard kit to be used as needed and have these kits in the office, shop, and vehicles.

Refuge employee Glenn McMichael is a certified CPR and first aid instructor.

Construction/Rehabilitation

The dike and dam systems at both Pippins and Allison Lakes were rehabilitated in 1999 as part of a refuge MMS project. The dam work at Allison was completed, and the final touches at Pippins will be completed in 2000. Our maintenance staff did an excellent job on this project. Thanks also to the staff at Carolina Sandhills NWR, who assisted us with personnel and equipment. We could not have finished without their time and resources.



Progressive shots of the rehabilitation work at Allison Lake



Progressive shots of the dam rehabilitation work at Pippins Lake

Other

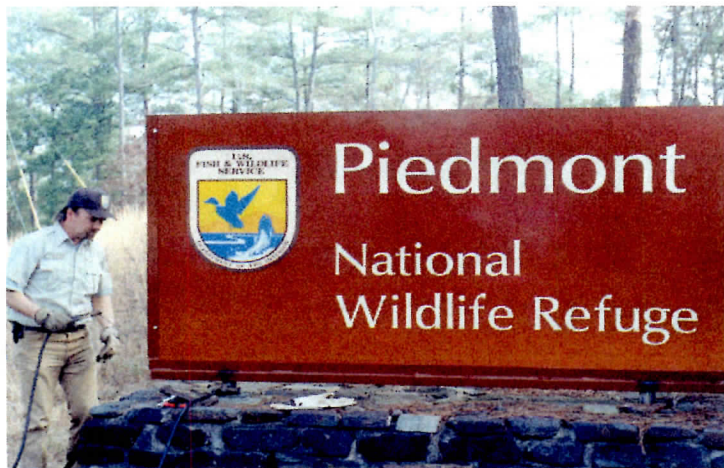
A new tractor was purchased in 1999. It is a 4-wheel drive New Holland with an air-conditioned cab. It is much safer and more efficient for summer mowing and plowing. The tractor is also used with a tree cutter for understory control in RCW colony sites.



The new tractor purchased in 1999.

Refuge Revenue Sharing checks were presented to the counties in which the two refuges are located. Amounts were as follows: Jones County - \$143,484; Jasper County - \$32,314; Twiggs County - \$10,366; and Bibb County - \$6,677.

We replaced Piedmont's entrance signs with recreation fee money in 1999. Refuge visitors were complimentary of the new signs.



John Vinson mounts a new refuge entrance sign, paid for with rec-fee money.

Feedback