

## V. PLAN IMPLEMENTATION

### Background

Refuge lands are managed as directed under the National Wildlife Refuge System Improvement Act of 1997, Fish and Wildlife Service Manual, proven scientific practices, sound biological principles, and up-to-date research. Congress has defined a clear legislative mission of wildlife conservation for all national wildlife refuges, which unlike other public lands, are dedicated to the conservation of the Nation's fish and wildlife resources. Recreational uses are accom-

modated where appropriate and compatible, while still meeting the Congressional mandates of wildlife first. Priority projects emphasize the protection and enhancement of fish and wildlife species first and foremost, but consideration is given to addressing the needs and demands for recreation and environmental education when appropriate and compatible.

### Proposed Projects and Personnel

The proposed projects reflect the basic needs identified by Service staff, the public, and planning team members for the management of fish and wildlife populations, habitats, visitor

services, general administration, land protection, and conservation. Among these projects is a list of step-down management plans to be developed. Step-down plans are individual and specific management plans. The refuge operates under a number of these plans which outlines proposed actions, as well as their benefits and potential. Some specific plans may need revisions, while others will need to be developed. The Service prepares step-down plans in conjunction with the provisions set forth in the National Environmental Policy Act of 1969.

Annual funding for staff, facilities, operations, and maintenance is an integral part of project implementation. General cost estimates are provided in Figure 10. These figures will be updated and adjusted annually. Essential needs are addressed such as reducing or eliminating significant biological threats and problems, meeting National Wildlife Refuge System mission requirements, and fulfilling the purpose for which the refuge was established. There are no estimates of potential land purchases, because land values are subject to time of sale and market value at time of purchase. There are no assurances that these projects will be either fully or partially funded. However, with the help and cooperation of conservation



Prairie warbler  
USFWS Photo

Section A.  
Final Comprehensive  
Conservation Plan  
**CHAPTER V -  
Plan Implementation**



*Paddlefish monitoring  
USFWS Photo*

partners, the Service will use this plan to focus attention on funding the operation and maintenance needs of the refuge.

All of the lands acquired at Noxubee refuge over the last 10 years have been through timber-for-land exchanges. It is anticipated that this will continue to be the primary method of acquiring lands for the refuge including the proposed expansion areas. Timber-for-land exchanges do not require the use of appropriated funds for land acquisition. The administration of lands acquired within the proposed expansion areas will not require any additional operational or management funds.

For the purpose of achieving the goals and objectives developed for the refuge, the plan has grouped management strategies into specific projects. This plan describes 20 potential projects for development and management. Also, additional staff are listed to implement the projects. Partnership agreements benefitting the refuge and other entities also are discussed.

The reader will note that a RONS or MMS number has been assigned to each project. The Refuge Operations Needs System (RONS) is a national database which contains the unfunded operational needs of each refuge. Projects included are those required to implement approved plans and meet goals, objectives, and legal mandates. The Maintenance Management System (MMS) is a computerized database and management tool for planning and budgeting maintenance, capital improvements, and equipment replacement projects. The strategies linked to specific projects also are listed. (See Figures 10 and 11 for a proposed project and personnel cost summary and for the number of personnel needed to fully implement the comprehensive conservation plan.)

#### **Staff for Office/Visitor Center - Four Positions**

Additional positions such as a Janitor (WG-05); Program Coordinator (GS-07); Secretary (GS-05); and a Receptionist (GS-04) will be necessary to provide an appropriate level of visitor services as well as maintain a new visitor center.

#### ***RONS00009 and Strategy F.2.1***

#### **Avifauna Survey**

Standardized protocols and systematic surveys of refuge bird species will be conducted to determine presence and distribution and provide baseline data to help managers evaluate the effectiveness of forest management and restoration practices. This information is critical to implementing programs, formulating habitat management, and developing adaptive management strategies for non-game wildlife management and neotropical migratory bird management.

#### ***RONS97002 and A.2.4.***

#### **Mollusk Survey**

A systematic survey of refuge mollusk species (primarily freshwater mussels) will be conducted to establish species presence and distribution in order to guide management decisions. Previous surveys have

been limited in nature, and have not provided the type of comprehensive information needed to conduct appropriate management of this species group. Such a survey would verify their presence or absence and serve as a first step towards appropriate management.

***RONs97004 and Strategy A.3.5.***

#### **Amphibian and Reptile Survey**

A systematic survey of refuge herpetofauna will occur to establish species presence and distribution. Much emphasis is now being placed on non-game and lesser-known species, and appropriate management of these species is impossible without this type of basic information.

***RONs97003 and Strategy A.3.5.***

#### **Invertebrate Survey**

A systematic survey of refuge invertebrates (primarily insects) will be conducted to establish species presence and distribution to help guide management decisions. Surveys of butterflies and moths conducted by the local Audubon Society indicate extremely high diversities of these insect groups on the refuge.

***RONs97005 and Strategy A.2.5.***

#### **Botanical Survey**

A systematic survey of plant species on refuge lands will be conducted to establish species presence and distribution to help guide management decisions. For example, the Price's potato-bean, listed as a threatened species under the Endangered Species Act, occurs relatively close to the refuge; however, there have been no formal surveys for this plant on the refuge. Documenting its presence or absence would be very beneficial in planning future management activities.

***RONs97006 and Strategy A.2.5.***

#### **Archaeological Survey**

A comprehensive inventory and procurement of information on historic sites, and their eligibility for the National Register of Historic Places, will occur as appropriate. A systematic archaeological survey of refuge lands will occur to establish location and content of archaeological sites. From this survey, a GIS overlay will be developed to help with planning refuge management activities.

Information collected will serve as the foundation for a database on refuge archaeological resources.

***RONs96008 and Strategy E.1.1.***

#### **Wheelchair-Accessible Fishing Pier at Bluff Lake**

The demand for improved access to fishing opportunities is constantly increasing. Constructing a wheelchair-accessible fishing pier at Bluff Lake would be an excellent step towards improving these opportunities. There are no access points designed specifically for the numerous disabled individuals who enjoy fishing at the refuge.

***RONs97010 and D.2.3.***

### **Boat Ramp and Dock at Loakfoma Lake**

As previously mentioned, access to fishing opportunities at the refuge is constantly increasing. Loakfoma Lake is one of the most popular fishing lakes on the refuge, and currently, the only public access facility existing is a graveled boat ramp. Access to this lake could be dramatically improved by the construction of a concrete ramp and boat dock.

***RONs97026 and D.2.4.***

### **Auto Tour Route**

An auto tour route is needed to provide an established route for visitors to see the various habitats and wildlife on the refuge. No such route exists to guide visitors through the 47,000-acre refuge, thus most visitors simply visit the areas near the office. An auto tour route could guide visitors to other parts of the refuge, thus exposing them to the public use facilities and varieties of habitat and wildlife that the refuge has to offer. The project would involve developing vehicle pull-offs, signs, brochures, and audio tapes.

***RONs97023 and D.3.4.***

### **Water Control Management Capability**

The ability to manage water levels is critical to the refuge mission. Migratory waterfowl, water birds, wintering eagles, and numerous fish species depend on managed water levels. Neglecting more than 20 water control structures and approximately 20 miles of levees has left a backlog of maintenance projects (\$352,000) that could have been avoided. This is a recurring restoration cost if operations and maintenance funds are not increased.

***RONs0001 and Strategies B.2.1, B.2.2, and B.2.3.***

### **Water Contaminants Investigations and Monitoring**

The large amount of suburban growth around the refuge, combined with two significant threats already identified (high density hog farm, and municipal sewage lagoons), makes it imperative for the refuge to monitor its water quality. Some evidence of contaminant problems, such as abnormal hormone levels in fish, has already been found in preliminary studies. Further investigation of these problem areas is needed, along with the establishment of a permanent monitoring program.

***RONs98015 and Strategy A.3.8***

### **Red-Cockaded Woodpecker Habitat Restoration with Mississippi State University**

The development of a Safe Harbor Agreement with Mississippi State University's John Starr Forest, located adjacent to the refuge, would enhance the refuge's population of red-cockaded woodpeckers. The John Starr forest managers are interested in restoring up to three red-cockaded woodpecker clusters on their property using habitat management techniques such as shearing, prescribed burning, and installing artificial cavities. This project would involve refuge staff assisting with development of the Safe Harbor Agreement, as well with the actual habitat management.

***RONs00007 and Strategy B.1.1.***

### **Equipment Operator Position**

The refuge owns approximately 100 miles of improved dirt roads that provide both public and administrative access to refuge lands. In an average year, approximately 15 miles of roadway must be repaired to prevent an excessive maintenance backlog. This position would be an equipment operator capable of operating road graders, tractors and mowers, backhoes, and several other pieces of equipment needed to properly maintain roadways.

***RONS98006 and Strategies F.1.1 and F.2.1***

### **Volunteer Coordinator Position**

This position would complement existing public use staff, and allow more effective use of volunteers in accomplishing all types of refuge work. Although the refuge has utilized volunteers for more than 10 years to assist in a variety of programs, it has only begun to tap the volunteer resources that are available. With the recent construction of a modern bunkhouse, the refuge has eliminated one of the major problems associated with the effective use of volunteers—that of providing housing. The next important step is to provide a dedicated person for recruiting and coordinating volunteers. With additional coordination, the volunteer program would be capable of greatly enhancing numerous programs such as surveys and monitoring, habitat enhancement, general maintenance, and public use management.

***RONS98010 and Strategies F.2.1 and F.2.4***

### **Archaeologist Position**

Currently the Southeast Region of the Fish and Wildlife Service has only two archaeologists responsible for the needs of all field stations. This project would add an archaeologist to the staff of the refuge, making that person available to work with other field stations in the region. Responsibilities of this position would include accomplishing a refuge-wide archaeological survey, coordinating resource protection with other agencies, and coordinating activities with interested ethnic groups. Such a position would greatly improve the understanding and management of cultural resources on Noxubee and other refuges.

***RONS98005 and Strategies E.3.1 and F.2.1***

### **Bluff Lake Road Paving (Oktibbeha County)**

This road serves as one of three major entrances. The road was paved in 2001, but it will require periodic overlays of pavement as maintenance. This project entails applying a tar and gravel overlay to 1.3 miles of roadway. A memorandum of understanding is already in place with Oktibbeha County to allow the refuge to jointly maintain the roadway.

***MMS00004 and Strategy F.1.2***

### **Brooksville-Louisville Road Paving (Noxubee County)**

This road serves as one of three major entrances. The road was paved in 2001, but it will require periodic overlays of pavement as maintenance. This project entails applying a tar and gravel overlay to 4.9 miles of roadway. A memorandum of understanding is

already in place with Noxubee County to allow the refuge to jointly maintain the roadway.

**MMS00005 and Strategy F.1.2**

**Bluff Lake Road Paving (Winston County)**

This road serves as one of three major refuge entrances. Improving general access to the refuge has been identified as a high priority refuge need. This project proposes to improve 9 miles of county-owned Bluff Lake Road by adding clay-gravel base, topping with crushed limestone, and paving with a chip-and-seal type pavement. A memorandum of understanding is already in place with Winston County to allow the refuge to jointly maintain the road.

**MMS00006 and Strategy F.1.2**

**Additional Vehicle Parking Areas**

This project would entail constructing additional vehicle parking areas (i.e., pull-offs) along roadways throughout the refuge to improve public access. Lack of such parking areas results in numerous vehicles becoming stuck in the mud during the refuge's hunting season, and to a lesser extent throughout the year. This project would involve grading, placing fill, and graveling small parking areas at key places throughout the refuge.

**RONs96002 and Strategy D.1.6**

**Funding and Personnel**

Implementation of this plan will require increased funding and personnel support that will come from a variety of internal and external sources. New projects are identified in RONS, while maintenance needs for existing facilities and projects are identified through MMS. This plan outlines proposed projects that are substantially above current budget allocations. The plan does not constitute a commitment (from Congress) for staffing increases, operational and maintenance increases, or funding for future land acquisition, but represents wildlife resource needs based on sound biological science and input from the public.

According to predictions based on the RONS database, the refuge staff will need to increase from a total of 17 in Fiscal Year 2001, to a total of 30 by Fiscal Year 2014. This increase in staff will also necessitate an increase in base funding above standard yearly increases that allow only for inflation.

**Volunteers**

Private citizens contributing volunteer services are involved in just about every aspect of refuge management. These volunteers fortify the refuge staff with skills and energy, and by becoming knowledgeable about the refuge and its wildlife, they become advocates in the local community. There is a long history of volunteers working on the refuge to accomplish tasks that otherwise would go undone. The volunteer program is constantly growing, and it's expected to grow even faster in the future as the refuge prepares to make better use of volunteer help. Two recent advances in the volunteer program have been the addition of a public use specialist to the

*Noxubee  
National Wildlife Refuge*

**Section A.  
Final Comprehensive  
Conservation Plan**

**CHAPTER V -  
Plan Implementation**

staff, and the recent construction of a bunkhouse. The public use specialist will be able to devote more time to coordinating with volunteers, thus making more efficient use of their time. Likewise, the bunkhouse provides volunteers with a place to stay while working on the refuge, thus opening the door to more volunteers from distant places, rather than just the local commuting area. Even greater utilization of volunteers would be possible if the proposed volunteer coordinator position is funded.



*USFWS Photo*

**Figure 10. Proposed Project and Personnel Cost Summary**

| <b>Project Title</b>   | <b>Initial Cost</b> | <b>Annual Cost</b> | <b>First Year Cost</b> |
|--|---------------------|--------------------|------------------------|
| Visitor Center Staff (4)                                     | 260,000             | 178,000            | 438,000                |
| Avifauna Survey  | 100,000             | -----              | 100,000                |
| Mollusk Survey   | 100,000             | -----              | 100,000                |
| Herptifauna Survey   | 100,000             | -----              | 100,000                |
| Invertebrate Survey  |                     |                    |                        |
| Botanical Survey   | 100,000             | -----              | 100,000                |
| Archaeological Survey  | 200,000             | -----              | 200,000                |
| Fishing Pier-Bluff Lake                                      | 100,000             | 1,000              | 101,000                |
| Boat Ramp & Dock-Loakfoma<br>Lake                            | 160,000             | 1,000              | 101,000                |
| Auto Tour Route  | 50,000              | 1,000              | 51,000                 |
| Water Control Management<br>Capability                       | 130,000             |                    | 130,000                |
| Investigate/Monitor Water<br>Contaminants                    | 95,000              | 25,000             | 20,000                 |
| RCW Habitat Restoration with<br>Mississippi State University | 40,000              | 10,000             | 50,000                 |
| Equipment Operator Position                                  | 65,000              | 53,000             | 118,000                |
| Volunteer Coordinator<br>Position                            | 65,000              | 49,000             | 114,000                |
| Archaeologist Position                                       | 65,000              | 58,000             | 123,000                |
| Bluff Lake Road<br>(Oktibbeha County)                        | 200,000             | -----              | 200,000                |
| Brooksville-Louisville<br>Road (Nobubee County)              | 1,030,000           | 90,000             | 1,030,000              |
| Bluff Lake Road<br>(Winston County)                          | 1,710,000           | 14,000             | 1,710,000              |
| Vehicle Pull-Offs  | 100,000             | 10,000             | 110,000                |
| <b>TOTAL</b>   | <b>4,620,000</b>    | <b>490,000</b>     | <b>4,896,000</b>       |

Initial costs include construction and start-up costs;  
Annual costs include salary/benefits, utilities, Service contracts, supplies, facility leases, training,  
travel, and maintenance; First year costs are typically a combination of initial and annual costs.

### **Partnership Opportunities**

Public outreach entails a variety of services and support that refuges provide to the public, special groups, other government agencies, and individuals. It includes technical assistance to state agencies on special problems, publications, and presentations to local civic groups and schools.

Many biologists and private citizens, as well as environmental organizations, scientific organizations and other agencies, have expressed a great interest in becoming involved with the manage-

**Section A.  
Final Comprehensive  
Conservation Plan**

**CHAPTER V -  
Plan Implementation**

ment of the refuge. Developing and maintaining partnerships will enable the refuge to achieve its goals and objectives, minimize costs, share funding, and bridge relationships with others. To maintain and enhance wildlife outside of the refuge, the Service will focus its efforts on continuing to develop partnerships with the following: Mississippi Department of Wildlife, Fisheries, and Parks; Forest Service; Park Service; Starkville School District; Mississippi State Historic Preservation Office; and Mississippi State University. Although the Service does not have management responsibilities for those lands outside the refuge, it is important to articulate the wildlife resource needs area wide. Collaboration with colleges and universities and with conservation organizations will enable the refuge to carry on its extensive plans for research, monitoring, and education. To create awareness and expand environmental education efforts in the community, partnerships will be established with local organizations and school systems.

Implementation of the plan will rely on partnerships formed with landowners in the local area, volunteers and interested citizens, farmers and conservation organizations, and with appropriate government agencies. Cooperating landowners within the local area may be offered incentives and/or compensated through cost-sharing agreements for applying conservation and environmental farming practices and for creating, maintaining, or enhancing habitat for wildlife.

**Figure 11. New Personnel Needed to Fully Implement Plan**

| <b>Position</b>              | <b>Strategy No.</b> | <b>RONS Project No.</b> | <b>FTE's</b> |
|------------------------------|---------------------|-------------------------|--------------|
| Janitor                      | D.5.2               | 03003                   | 1            |
| Programs Coordinator         | D.5.3; D.5.4        | 03002                   | 1            |
| Secretary                    | F.2.1               | 00009                   | 1            |
| Receptionist                 | F.2.1               | 03001                   | 1            |
| Equipment Operator           | F.1.1               | 98006                   | 1            |
| Tractor Operator             | A.4.1               | 98007                   | 1            |
| Biological Technician        | A.2.4               | 97022                   | 1            |
| Biological Technician        | B.1.1; B.1.3        | 97008                   | 1            |
| Wildlife Biologist           | B.1.2; B.2.2        | 98009                   | 1            |
| Forester                     | A.1.1; A.2.1        | 00015                   | 1            |
| Volunteer Coordinator        | F.2.4               | 98010                   | 1            |
| Refuge Operations Specialist | F.2.1               | 00014                   | 1            |
| Archaeologist                | E.3.1               | 98005                   | 1            |
| Law Enforcement Officer      | F.2.1               | 03000                   | 1            |

**Section A.  
Final Comprehensive  
Conservation Plan**

---

**CHAPTER V -  
Plan Implementation**

**Step-Down Plans**

Refuge policy (Refuge Manual, Part 4, Chapter 3) requires that specific management plans be developed for each refuge. Some plans require annual revisions and others are on a 5- to 10-year schedule for revision. Refuge staff will continue to seek public and professional input in the development, revision, and implementation of step-down plans. Some of these plans are already in place, while others have yet to be developed. Existing step-down plans that do need some level of modification or updating to implement the direction of the comprehensive conservation plan, or that require periodic review and revision under the plan, are listed below. Presently, Noxubee National Wildlife Refuge has 15 step-down plans. The following plans require updating:

| <b>Plan</b>                               | <b>Fiscal Year Completion Date</b> |
|---|------------------------------------|
| Wildlife Monitoring                       | 2003                               |
| Fishery Monitoring                        | 2003                               |
| Refuge Hunting                            | 2003                               |
| Cropland Management                       | 2004                               |
| Grassland Management                      | 2004                               |
| Forest Management                         | 2005                               |
| Habitat Management for Endangered Species | 2005                               |
| Moist-Soil/Water Management               | 2007                               |
| Fire Management                           | 2008                               |

Step-down plans that need to be developed:

| <b>Plan</b>   | <b>Fiscal Year Completion Date</b> |
|---|------------------------------------|
| Special Management Areas<br>Research Natural Areas; Wilderness<br>Study Areas, etc. | 2003                               |
| Disease Prevention and Control  | 2004                               |
| Integrated Pest Management  | 2005                               |
| Visitor Services Plan   | 2005                               |

**Monitoring and Adaptive Management**

Wildlife population monitoring (i.e., involving primarily red-cockaded woodpecker, white-tailed deer, waterfowl, and paddlefish) and habitat monitoring will be emphasized. Wildlife monitoring will include surveys during the hunting and breeding season, brood surveys, collar observations, species richness measurements, and relative abundance figures. Habitat monitoring will primarily involve the amount and distribution of forested wetland habitats, vegetation and water quality surveys, community composition and structure, and representative components and habitat parameters addressed in plan objectives.

*Noxubee  
National Wildlife Refuge*

**Section A.  
Final Comprehensive  
Conservation Plan**

**CHAPTER V -  
Plan Implementation**

Management of projects is dependent on monitoring and evaluating to sustain the function and dynamics of wildlife habitats, to maintain biological diversity, to protect target species, and to provide a variety of wildlife-dependent recreation and education experiences of value to visitors. Information derived will enable managers to test and adjust the management objectives outlined in this plan.

Adaptive management is a flexible approach to long-term management of biotic resources which is directed over time by the results of ongoing monitoring activities and other information. It is also a process in which projects are implemented within a framework of scientifically driven experiments to test predictions and assumptions as outlined in this plan. The biological programs are systematically evaluated to determine management effects on wildlife populations. This information is used to refine approaches and to determine how effectively goals and objectives are being accomplished. Evaluations will be conducted on a regular basis to provide feedback to stakeholders and partners. If monitoring and evaluation yield undesirable effects for target and non-target species and/or communities, management projects will be altered and the comprehensive conservation plan will be revised.



*Kentucky warbler*  
*USFWS Photo*

*Noxubee*  
*National Wildlife Refuge*

**Section A.**  
**Final Comprehensive**  
**Conservation Plan**

---

**CHAPTER V -**  
**Plan Implementation**