Appendix A. Glossary

Adaptive Management	The process of implementing flexible management and policy that is responsive to results of continuous biological monitoring and scientific experimentation. The analysis of the outcome of project implementation helps managers determine whether current management should continue as is or whether it should be modified to achieve desired conditions.
Alternative	Alternatives are different means of accomplishing refuge purposes, goals and objectives, and contributing to the National Wildlife Refuge System. A reasonable means to fix the identified problem or satisfy the stated need.
Approved Acquisition Boundary	A project boundary that the Director of the Fish and Wildlife Service approves upon completion of a detailed planning and environmental compliance process.
Augmentation	Increasing the size of a population by translocating individuals between populations.
Biological Diversity	The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur. The National Wildlife Refuge System focus is on indigenous species, biotic communities, and ecological processes.
Canopy	A layer of foliage; generally the upper-most layer, in a forest stand. It can be used to refer to mid- or under-story vegetation in multi-layered stands. Canopy closure is an estimate of the amount of overhead tree cover (also canopy cover).
Categorical Exclusion	A category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by a federal agency pursuant to the National Environmental Policy Act.
CFR	Code of Federal Regulations.
Cluster	The aggregation of cavity trees previously and currently used and defended by a group of woodpeckers. For management purposes, the minimum area encompassing the cluster is 4 ha (10 acres). Use of the term cluster is preferred over colony because colony implies more than one nest (as in a colonial breeder).
Compatible Use	A wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the refuge manager, will not materially interfere with, or detract from, the fulfillment of the mission or the purposes of the refuge. A compatibility determination

supports the selection of compatible uses and identifies stipulations or limits necessary to ensure compatibility.

Comprehensive Conservation Plan A document that describes the desired future conditions of the refuge; provides long-range guidance and management direction for the refuge manager to accomplish the purposes, goals, and objectives of the refuge; and contributes to the mission of the National Wildlife Refuge System and to meet relevant mandates.

Conservation Easement A legal document that provides specific land-use rights to a secondary party. A perpetual conservation easement usually grants conservation and management rights to a party in perpetuity.

Cooperative Agreement A simple habitat protection action in which no property rights are acquired. An agreement is usually long term and can be modified by either party. Lands under a cooperative agreement do not necessarily become part of the National Wildlife Refuge System.

Corridor A route that allows movement of individuals from one region or place to another.

Cover Type The present vegetation of an area.

Cultural Resources The remains of sites, structures, or objects used by people of the past.

Cypress and Tupelo Swamp Found in low lying areas, such as swales and open ponds that hold water for several months, if not all of the year. Large hollow trees are used as bear den sites.

Deciduous Pertains to perennial plants that are leafless for sometime during the year.

Early Succession Describes vegetative communities which have been recently disturbed, thus consisting of herbaceous plants, shrubs, and brush. As succession continues over time, this vegetation will be replaced by small trees, saplings, and eventually mature trees.

Ecological Succession The orderly progression of an area through time in the absence of disturbance from one vegetative community to another.

Ecosystem A dynamic and interrelating complex of plant and animal communities and their associated non-living environment.

Ecosystem Management Management of natural resources using system-wide concepts to ensure that all plants and animals in ecosystems are maintained at viable levels in native habitats and basic ecosystem processes are perpetuated indefinitely.

Edge Effect The tendency (in a transitional zone) between communities to contain a greater variety of species and more dense populations of

	species than any surrounding community. Such is the case between wildlife communities that occupy dense bottomland hardwood forests and wildlife found in open, cultivated agricultural lands or monoculture plantations.
Even-aged Forests	Forests that are composed of trees with a time span of less than 20 years between oldest and youngest individuals.
Even-aged Management	A silvicultural method designed primarily for timber production, in which all trees in a stand are of one age/size class. The forest is regulated by developing equal areas in each age/size class.
Emergent Growth/Re-vegetation	Farmland or logged timber that has been reforested (early succession) or may be naturally re-vegetated.
Endangered Species	A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range.
Endemic Species	Plants or animals that occur naturally in a certain region and whose distribution is relatively limited to a particular locality.
Environmental Assessment	A concise document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact.
Fauna	All the vertebrate or invertebrate animals of an area.
Federal Trust Species	All species where the Federal Government has primary jurisdiction including federally threatened or endangered species, migratory birds, anadromous fish, and certain marine mammals.
Fee Title	The acquisition of most or all of the rights to a tract of land. There is a total transfer of property rights with the formal conveyance of a title. While a fee title acquisition involves most rights to a property, certain rights may be reserved or not purchased, including water rights, mineral rights, or use reservation (the ability to continue using the land for a specified time period, or the remainder of the owner's life).
Finding of No Significant Impact	A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a federal action will have no significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared.
Flood Plain Woods/Bottomland Hardwood Forest	Consist of hardwoods (old-growth and mid-succession age timber) and cypress tupelo stands found on low ridges that drain

	slowly and are subject to flooding, i.e., overcup, willow and water oaks, sweetgum, green ash. Old growth typically exceeds 120 years of age.
Fragmentation	The process of reducing the size and connectivity of habitat patches. The disruption of extensive habitats into isolated and small patches.
Goal	Descriptive, open-ended, and often broad statements of desired future conditions that convey a purpose but does not define measurable units.
Geographic Information System	A computer system capable of storing and manipulating spatial data.
Ground Story (flora)	Vascular plants less than one meter in height, excluding tree seedlings.
Group	The social unit in red-cockaded woodpeckers, consisting of a breeding pair with one or more helpers, a breeding pair without helpers, or a solitary male.
Habitat	The place where an organism lives. The existing environmental conditions required by an organism for survival and reproduction.
Home Range	The area supporting the daily activities of an animal, generally throughout the year.
Indicator Species	A species of plant or animals that is assumed to be sensitive to habitat changes and represents the needs of a larger group of species.
Indigenous	Living or native to a specific area or environment.
In-holding	Privately owned land inside the boundary of a national wildlife refuge.
Issue	Any unsettled matter that requires a management decision.
Late Succession	Describes vegetative communities which have passed through the early stages of herbaceous plants, shrubs and brush, and now consist of mature trees and understory plants typical of a mature forest.
Metapopulation	A set of interacting populations.
Mid-story	A layer of foliage intermediate in height between canopy and groundcover, litter layer, or soil surface.
Mid-succession Forest	A forest generally characterized by even-aged structure resulting from human disturbance such as timber harvest. Mid-succession forests may contain mature trees but as a whole do not exhibit functional or structural characteristics associated with old growth conditions.
Migratory	Pertaining to the seasonal movement from one area to another and back again.

Mitigation	Reduction of negative impacts.
Monitoring	The process of collecting information to track changes of selected parameters over time.
National Environmental Policy Act of 1969	Requires all federal agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate this Act with other planning requirements, and prepare appropriate policy documents to facilitate better environmental decision-making
National Wildlife Refuge	A designated area of land, water, or an interest in land or water within the National Wildlife Refuge System.
National Wildlife Refuge System	Various categories of areas administered by the Secretary of the Interior for the conservation of fish and wildlife, including species threatened with extinction, all lands, waters, and interests therein administered by the Secretary as wildlife refuges, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas.
Native Species	Species that historically live and thrive in a particular ecosystem.
Neotropical Migratory Bird	A bird species that breeds north of the United States/Mexican border and winters primarily south of that border, which includes Mexico, West Indies, Central America and part of South America.
Natural Levee	Embankment created by soil deposited as a stream over-tops its banks. Located adjacent to a stream, a natural levee is often the highest ground in a bottomland or swamp type area.
Objective	An objective is a concise quantitative (where possible) target statement of what will be achieved. Objectives are derived from goals and provide the basis for determining management strategies. Objectives should be attainable and time-specific.
Old Growth Forest	Forested areas lacking frequent disturbance to vegetation, usually characterized by dominant species entered into a late successional stage; usually associated with high diversity of species, specialization, and structural complexity.
Planning Area	A planning area may include lands outside existing refuge planning unit boundaries that are being studied for inclusion in the unit and/or partnership planning efforts. It may also include watersheds or ecosystems that affect the planning area.
Potential Breeding Group	An adult female and adult male that occupy the same cluster, whether or not they are accompanied by a helper, attempt to nest, or successfully fledge young.

Planning Team	A planning team prepares the comprehensive conservation plan. Planning teams are interdisciplinary in membership and function. A team generally consists of a planning team leader; refuge manager and staff biologists; staff specialists or other representatives of Service programs, ecosystems or regional offices; and state partnering wildlife agencies, as appropriate.
Preferred Alternative	This is the alternative determined by the decision maker to best achieve the refuge purpose, vision, and goals; contributes to the refuge system mission, addresses the significant issues, and is consistent with principles of sound fish and wildlife management.
Primary Cavity Nester	Species that nest in cavities they created.
Proposed Wilderness	An area of the National Wildlife Refuge System that has been recommended to Congress for inclusion in the National Wilderness Preservation System.
Refuge Boundary	Lands acquired by the Fish and Wildlife Service within the current approved acquisition boundary.
Refuge Operating Needs System	This is a national database that contains the unfunded operational needs of each refuge. Projects included are those required to implement approved plans and meet goals, objectives, and legal mandates.
Refuge Purposes	The purposes specified in or derived from the law, proclamation, Executive Order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit.
Regeneration	A silvicultural method of simultaneously harvesting and establishing reproduction in trees.
Rotation	In even-aged management of forests, the number of years between regeneration events.
Silviculture	The theory and practice of controlling the establishment, composition, structure, and growth of forests to achieve management objectives. Silviculture was developed primarily for the purpose of timber production, but can be used for other purposes including biological conservation.
Snag	A standing dead tree.
Source	A habitat in which local reproductive success exceeds local mortality for a given species.
Source Population	A population in a high-quality habitat in which birth rate greatly exceeds death rate and the excess individuals leave as migrants.

Step-Down Management Plans	Step-down management plans provide the details necessary to implement management strategies and projects identified in the comprehensive conservation plan.
Strategy	A specific action, tool, or technique or combination of actions, tools, and techniques used to meet unit objectives.
Threatened Species	Species listed under the Endangered Species Act that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.
Translocation	The artificial movement of wild organisms between or within populations to achieve management objectives. Originally, translocation referred to the movement of animals form captive to wild populations, but the term has been expanded to include movements (by artificial means) within and between wild populations.
Understory	Any vegetation with canopy below or closer to the ground than canopies of other plants.
Uneven-aged Management	A silvicultural method designed primarily for timber production, in which trees of a least three age classes are present in the same stand. Stands are regulated by size, class, structure, or volume.
Wildlife-Dependent Recreation	A use of a refuge involving hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation. The National Wildlife Refuge System Improvement Act of 1997 specifies that these are the six priority general public uses of the system.
Wilderness Study Area	An area created by a federal agency following the inventory component of a wilderness review.

Appendix B. References

Crumby, W.D., M.A. Webb, F.J. Bulow, and H. J. Cathery. 1990. Changes in biotic integrity of a river in north-central Tennessee. Transactions of the American Fisheries Society 119:885893.

Grazulis, T. P. 1984. Violent tornado climatology, 1880 1982. U.S. Nuclear Regulatory Commission NUREG/CR-3670, PNL-5006RB. 37 pp.

Hotchkiss, N. 1967. Underwater and floating-leaved plants of the United States and Canada. U.S. Fish and Wildlife Service Resource Publication 44. 124 pp.

Kaufman, Denn. 1966. Lives of North American Birds, Peterson Natural History Companions. Houghton Mifflin Co., Boston.

Martin, W.H., and S. G. Boyce. 1993. Biodiversity of the southeastern United States: lowland terrestrial communities. John Wiley & sons, New York. 373 pp.

Miller, W.F. 1967. Physical and Chemical Properties of Forested Soils. Mississippi State University Agricultural Experiment Station. 112 pp.

Mulholland, P. J., and D. R. Lenat. 1992. Streams of the southeastern Piedmont, Atlantic drainage. Pages 193 231 in C. T. Hackney, S. M. Adams, and W. H. Martin, editors. Biodiversity of the southeastern United States: aquatic communities. John Wiley & Sons, New York. U.S. Fish and Wildlife Service. 2001. Listings by State and Territory. http:ecos.fws.gov.

White, Peter S., Wilds, Stephanie P., Thunhorst, Gwendolyn A., and contributing authors (John M. Alderman, Matthew Barnett-Lawrence, J. Whitfield Gibbons, Thomas C. Gibson, David S. Lee, Michael R. Pelton, David Penrose, and James D. Williams). U.S. Geological Survey, 2000. Status and Trends of Biological Resources. http://biology.usgs.gov/s+t/SNT/index.htm.

Bibliography - Council for Agricultural Science and Technology Task Force. 1999. Benefits of Biodiversity. Council for Agricultural Science and Technology. Report No. 133. Ames, Iowa.

Ferry, G.W., R.G. Clark, et. Al. 1995. Altered fire regimes within fire adapted ecosystems. Our living resources: a report to the nation on the distribution, abundance, health of U. S. plants, animals, and ecosystems. U. S. Department of the Interior, National Biological Service, Washington, D.C.

Hamel, Paul B. 1992. The Land Mangers's Guide to the Birds of the South. The Nature Conservancy and the USDA Forest Service. Atlanta, Georgia.

Hamel, P., H. Legrand, M. Lennartz, and S. Gauthreaux, Jr. 1982. Bird-habitat relationships on southeastern forest lands. U. S. Forest Service General Technical Report SE-22. 417 pp.

Harris, L., and J.G. Gosselink. 1990. Cumulative impacts of bottomland hardwood conversion on hydrology, water quality and terrestrial wildlife. Pages 259-322 in J.G. Gosselink. L.C. Lee, and T. A. Muir, editors. Ecological processes and U.S. Environmental Protection Agency. EPA-440/5-90-004. Washington, D.C. 57 pp.

Harris, L.D. 1984. The fragmented forest. The University of Chicago Press, Ill. 211pp.

Skeen, J.N., P.D. Doerr, and D.H. Van Lear. 1993. Oak-hickory-pine forests. Biodiversity of the southeastern United States: upland terrestrial communities. John Wiley & Sons, New York.

Stout, I.J., and W.R. Marion. 1993. Pine flatwoods and xeric pine forests of the southern (lower) Coastal Plain. Pages 373-446 in W.H. Martin, S.G. Boyce, and A.C. Echternacht, editors. Biodiversity of the southeastern United States. John Wiley & Sons, New York.

USDA Economic Research Service. 2000. Website: http://www.ers.usda.gov/

USDA Forest Service. 1979 and revised 1985. Final Environmental Impact Statement. National Forests in Mississippi Land & Resource Management Plan.

USDA Forest Service. 1985. Lennartz, M. R. Endangered Species Recovery Plan. Red-Cockaded Woodpecker (Picoides borealis). Southeastern Forest Experiment Station. Clemson, South Carolina.

USDI Fish and Wildlife Service. 1999. Fulfilling the Promise. Visions for Wildlife, Habitat, People, and Leadership.

USDI Fish and Wildlife Service. 1990. Hunter, William C. Handbook for Nongame Bird Management and Monitoring in the Southeast Region. Atlanta, Georgia.

USDI Fish and Wildlife Service. 1993. Refuges 2003, Draft Environmental Impact Statement.

USDI Fish and Wildlife Service. 1995. Stockie, James M. Forest Management Plan and Environmental Assessment for the Noxubee National Wildlife Refuge. Brooksville, Mississippi.

USDI Fish and Wildlife Service. 2000. Technical/agency draft revised recovery plan for the red-cockaded woodpecker (Picoides borealis). U.S. Fish and Wildlife Service, Atlanta, Georgia.

USDI Fish and Wildlife Service and USDC, Bureau of the Census. 1996. The 1996 National Survey of Fishing, Hunting, and Wildlife Associated Recreation. Washington, D.C.

Appendix C. Relevant Legal Mandates

National Wildlife Refuge System Authorities

The mission of the Fish and Wildlife Service is to conserve, protect, and enhance the Nation's fish and wildlife and their habitats for the continuing benefit of the American people. The Service is the primary federal agency responsible for migratory birds, endangered plants and animals, certain marine mammals, and anadromous fish. This responsibility to conserve our Nation's fish and wildlife resources is shared with other federal agencies and state and tribal governments.

As part of this responsibility, the Service manages the National Wildlife Refuge System. This system is the only nationwide system of federal land managed and protected for wildlife and their habitats. The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

The Noxubee National Wildlife Refuge is managed as part of this system in accordance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, the Refuge Recreation Act of 1962, Executive Order 12996 (Management and General Public Use of the National Wildlife Refuge System), and other relevant legislation, Executive Orders, regulations, and policies.

Key Legislation/Policies for Plan Implementation

The Noxubee National Wildlife Refuge Comprehensive Conservation Plan describes and illustrates management area projects with standards and guidelines for future decision-making, and may be adjusted through monitoring and evaluation as well as amendment and revision. The plan establishes conservation and land protection goals, objectives, and specific strategies for the refuge and its expansion. Compatible recreation uses specific to the refuge have been identified and approved by the refuge manager. This plan provides for systematic stepping down from the overall direction, as outlined, when making project- or activity-level decisions. This level involves site-specific analysis (e.g., Forest Habitat Management Plan) to meet National Environmental Policy Act requirements for decision making.

Antiquities Act (16 U.S.C. 431 - 433) - The Act of June 8, 1906, (34 Stat. 225) authorizes the President of the United States to designate as National Monuments objects or areas of historic or scientific interests on lands owned or controlled by the United States. The Act required that a permit be obtained for examination of ruins, excavation of archaeological sites and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of Interior, Agriculture, and Army, and provided penalties for violations.

Migratory Bird Treaty Act (1918): Designates the protection of migratory birds as a federal responsibility. This Act enables the setting of seasons and other regulations including the closing of areas, federal or non-federal, to the hunting of migratory birds.

Migratory Bird Conservation Act (1929): Establishes procedures for acquisition by purchase, rental, or gift of areas approved by the Migratory Bird Conservation Commission.

Migratory Bird Hunting and Conservation Stamp Act (16 U.S.C. 718-718j, 48 Stat. 452), as amended: The "Duck Stamp Act," of March 16,1934 requires each waterfowl hunter, 16 years of age or older, to possess a valid federal hunting stamp. Receipts from the sale of the stamp are deposited in a special Treasury account known as the Migratory Bird Conservation Fund and are not subject to appropriations.

Historic Sites, Buildings and Antiquities Act (16 U.S.C. 461-462, 464-467) - The Act of August 21,1935, (49 Stat. 666) popularly known as the Historic Sites Act, as amended by Public Law 89-249, approved October 9,1965, (79 Stat. 971), declared it a national policy to preserve historic sites and objects of national significance, including those located on refuges. It provided procedures for designation, acquisition, administration and protection of such sites. Among other things, National Historic and Natural Landmarks are designated under authority of this Act. As of January 1989, 31 national wildlife refuges contained such sites.

Refuge Revenue Sharing Act (16 U.S.C. 715s) Section 401 of the Act of June 15, 1935, (49 Stat. 383) provided for payments to counties in lieu of taxes, using revenues derived from the sale of products from refuges. Public Law 88-523, approved August 30,1964, (78 Stat. 701) made major revisions by requiring that all revenues received from refuge products, such as animals, timber and minerals, or from leases or other privileges, be deposited in a special Treasury account and net receipts distributed to counties for public schools and roads. Public Law 93-509, approved December 3,1974, (88 Stat. 1603) required that money remaining in the fund after payments be transferred to the Migratory Bird Conservation Fund for land acquisition under provisions of the Migratory Bird Conservation Act. Public Law 95-469, approved October 17, 1978, (92 Stat. 1319) expanded the revenue sharing system to include National Fish Hatcheries and Service research stations. It also included in the Refuge Revenue Sharing Fund receipts from the sale of salmonid carcasses. Payments to counties were established as follows: on acquired land, the greatest amount calculated on the basis of 75 cents per acre, three-fourths of one percent of the appraised value, or 25 percent of the net receipts produced from the land; and on land withdrawn from the public domain, 25 percent of net receipts and basic payments under Public Law 94-565 (31 U.S.C. 1601-1607, 90 Stat. 2662). This amendment also authorized appropriations to make up any difference between the amount in the fund and the amount scheduled for payment in any year. The stipulation that payments be used for schools and roads was removed, but counties were required to pass payments along to other units of local government within the county that suffer losses in revenues due to the establishment of Service areas.

Land and Water Conservation Fund Act of 1948: This act provides funding through receipts from the sale of surplus federal land, appropriations from oil and gas receipts from the outer continental shelf, and other sources of land acquisition under several authorities. Appropriations from the fund may be used for matching grants to states for outdoor recreation projects and for land acquisition by various federal agencies, including the Fish and Wildlife Service.

Wilderness Act of 1954: Public Law 88-577, approved September 3, 1964, directed the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within National Wildlife Refuge and National Park Systems for inclusion in the National Wilderness Preservation System.

Fish and Wildlife Act (1956): Established a comprehensive national fish and wildlife policy and broadened the authority for acquisition and development of refuges.

Fish and Wildlife Coordination Act (1958): Allows the Fish and Wildlife Service to enter into agreements with private landowners for wildlife management purposes.

National and Community Service Act of 1960 (42 U.S.C. 12401:104 Stat. 3127), Public Law 101-610, signed November 16,1990, authorizes several programs to engage citizens of the United States in full- and/or part-time projects designed to combat illiteracy and poverty, provide job skills, enhance educational skills, and fulfill environmental needs. Several provisions are of particular interest to the Fish and Wildlife Service.

Archaeological and Historic Preservation Act (16 U.S.C. 469- 469c) - Public Law 86-523, approved June 27, 1960, (74 Stat. 220), and amended by Public Law 93-291, approved May 24, 1974, (88 Stat. 174), directed federal agencies to notify the Secretary of the Interior whenever a federal, federally assisted, or licensed or permitted project may cause loss or destruction of significant scientific, prehistoric or archaeological data. The Act authorized use of appropriated, donated and/or transferred funds for the recovery, protection, and preservation of such data.

Refuge Recreation Act of 1962: This Act authorizes the Secretary of the Interior to administer refuges, hatcheries, and other conservation areas for recreational use, when such uses do not interfere with the area's primary purposes. It authorizes construction and maintenance of recreational facilities and the acquisition of land for incidental fish and wildlife oriented recreational development or protection of natural resources. It also authorizes the charging of fees for public uses.

Land and Water Conservation Fund Act (1965): Uses the receipts from the sale of surplus federal land, outer continental shelf oil and gas sales, and other sources for land acquisition under several authorities.

National Historic Preservation Act of 1966 (16 U.S.C. 470-470b, 470c-470n) - Public Law 89-665, approved October 15,1966, (80 Stat. 915) and repeatedly amended, provided for preservation of significant historical features (buildings, objects and sites) through a grant-in-aid program to the states. It established a National Register of Historic Places and a program of matching grants under the existing National Trust for Historic Preservation (16 U.S.C. 468-468d). The Act established an Advisory Council on Historic Preservation, which was made a permanent independent agency in Public Law 94-422, approved September 28,1976 (90 Stat. 1319). That Act also created the Historic Preservation Fund. Federal agencies are directed to take into account the effects of their actions on items or sites listed in, or eligible for listing in, the National Register of Historic Places. As of January 1989, 91 such sites on national wildlife refuges are listed in this Register.

National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee. (Refuge Administration Act): Defines the National Wildlife Refuge System and authorizes the Secretary of the Interior to permit any use of a refuge provided such use is compatible with the major purposes for which the refuge was established. The Refuge Improvement Act clearly defines a unifying mission for the refuge system; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation, wildlife photography and environmental education and interpretation); establishes a formal process for determining compatibility; established the responsibilities of the Secretary of the Interior for managing and protecting the System; and requires a Comprehensive Conservation Plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966.

National Environmental Policy Act (1969). Title I of the 1969 National Environmental Policy Act requires that all federal agencies prepare detailed environmental impact statements for "every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment." The 1969 statute stipulated the factors to be considered in environmental impact statements, and required that federal agencies employ an interdisciplinary approach in related decision-making and develop means to ensure that unquantified environmental values are given appropriate consideration, along with economic and technical considerations. Title II of this statute requires annual reports on environmental quality from the President to the Congress, and established a Council on Environmental Quality in the Executive Office of the President with specific duties and functions.

Rehabilitation Act (1973): Requires that programmatic and physical accessibility be made available in any facility funded by the Federal Government, ensuring that anyone can participate in any program.

Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended: Public Law 93-205, approved December 28, 1973, repealed the Endangered Species Conservation Act of December 5, 1969 (P.L. 91-135, 83 Stat. 275). The 1969 act amended the Endangered Species Preservation Act of October 15,1966 (P.L. 89-669, 80 Stat. 926). The 1973 Endangered Species Act provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, both through federal action and by encouraging the establishment of state programs. The Act authorizes the determination and listing of species as threatened and endangered; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using land and water conservation funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for threatened and endangered wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction of anyone violating the Act and any regulation issued thereunder.

Executive Order 11988, Flood plain Management: The purpose of this Executive Order, signed May 24, 1977, is to prevent federal agencies from contributing to the "adverse impacts associated with occupancy and modification of floodplains" and the "direct or indirect support of flood plain development." In the course of fulfilling their respective authorities, federal agencies "shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains."

Clean Water Act (1977): Requires consultation with the U.S. Army Corps of Engineers for major wetland modifications.

Fish and Wildlife Improvement Act of 1978: This Act was passed to improve the administration of fish and wildlife programs and amends several earlier laws, including the Refuge Recreation Act, the National Wildlife Refuge System Administration Act, and the Fish and Wildlife Act of 1956. It authorizes the Secretary of the Interior to accept gifts and bequests of real and personal property on behalf of the United States. It also authorizes the use of volunteers on Service projects and appropriations to carry out volunteer programs.

Archaeological Resources Protection Act (16 U.S.C. 470aa - 47011) - Public Law 96-95, approved October 31, 1979, (93 Stat. 721) largely supplanted the resource protection provisions of the Antiquities Act for archaeological items. This Act established detailed requirements for issuance of permits for any excavation for or removal of archaeological resources from Federal and Indian lands. It also established civil and criminal penalties for the unauthorized excavation, removal, or damage of any such resources; for any trafficking in such resources removed from Federal and Indian lands in violation of any provision of federal law; and for interstate and foreign commerce in such resources acquired, transported, or received in violation of any state or local law.

Emergency Wetland Resources Act of 1986: This Act authorized the purchase of wetlands from Land and Water Conservation Fund, removing a prior prohibition on such acquisitions. The Act also requires the Secretary of the Interior to establish a National Wetlands Priority Conservation Plan, requires the states to include wetlands in their Comprehensive Outdoor Recreation Plans, and transfers to the Migratory Bird Conservation Fund an amount equal to import duties on arms and ammunition.
Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System (1996): Defines the mission, purpose, and priority public uses of the National Wildlife Refuge System. It also presents four principles to guide management of the system.

Public Law 100-588, approved November 3, 1988, (102 Stat. 2983) lowered the threshold value of artifacts triggering the felony provisions of the Act from $5,000 to $500, made attempting to commit an action prohibited by the Act a violation, and required the land managing agencies to establish public awareness programs regarding the value of archaeological resources to the nation.

North American Wetlands Conservation Act (103 Stat. 1968; 16 U.S.C. 44O1~4412) Public Law 101-233, enacted December 13, 1989, provides funding and administrative direction for implementation of the North American Waterfowl Management Plan and the Tripartite Agreement on Wetlands between Canada, the United States, and Mexico. The Act converts the Pittman-Robertson account into a trust fund, with the interest available without appropriation through the year 2006, to carry out the programs authorized by the Act, along with an authorization for annual appropriation of $15 million plus an amount equal to the fines and forfeitures collected under the Migratory Bird Treaty Act. Available funds may be expended, upon approval of the Migratory Bird Conservation Commission, for payment of not to exceed 50 percent of the United States' share of the cost of wetlands conservation projects in Canada, Mexico, or the United States (or 100 percent of the cost of projects on federal lands). At least 50 percent and no more than 70 percent of the funds received are to go to Canada and Mexico each year.

Environmental Education Act of 1990 (20 U.S.C. 5501-5510; 104 Stat. 3325): Public Law 101-619, signed November 16, 1990, established the Office of Environmental Education within the Environmental Protection Agency to develop and administer a federal environmental education program. Responsibilities of the Office include developing and supporting programs to improve understanding of the natural and developed environment and the relationships between humans and their environment; supporting the dissemination of educational materials; developing and supporting training programs and environmental education seminars; managing a federal grant program; and administering an environmental internship and fellowship program. The Office is required to develop and support environmental programs in consultation with other federal natural resource management agencies, including the Fish and Wildlife Service.

Federal Noxious Weed Act (1990): Requires the use of integrated management systems to control or contain undesirable plant species and an interdisciplinary approach with the cooperation of other federal and state agencies.

Americans With Disabilities Act (1991): Prohibits discrimination in public accommodations and services.

Executive Order 13007, Indian Sacred Sites (1996): Directs federal land management agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, maintain the confidentiality of sacred sites.

National Wildlife Refuge System Improvement Act (1997): Public Law 105-57, amended the National Wildlife Refuge System Act of 1966 (16 U.S.C. 668dd-ee), and provided guidance for management and public use of the refuge system. The Act mandates that the refuge system be consistently directed and managed as a national system of lands and waters devoted to wildlife conservation and management. The Act establishes priorities for recreational uses of the refuge system. Six wildlife-dependent uses are specifically named in the Act: hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation. These activities are to be promoted on the refuge system, while all non-wildlife-dependent uses are subject to compatibility determinations. A compatible use is one that, in the sound professional judgment of the Refuge Manager, will not materially interfere with, or detract from, fulfillment of the National Wildlife Refuge System Mission or refuge purpose(s). As stated in the Act, "The mission of the system is to administer a national network of lands and waters for

the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." The Act also requires development of a Comprehensive Conservation Plan for each refuge and that management be consistent with the plan. When writing a plan for expanded or new refuges, and when making management decisions, the Act requires effective coordination with other federal agencies, state fish and wildlife or conservation agencies, and refuge neighbors. A refuge must also provide opportunities for public involvement when making a compatibility determination.

Appendix D. Biota

Mussels

Common Name	***Scientific Name***
Three-ridge	*Amblema plicata*
Flat Floater	*Anodonta suborbiculata*
Rock Pocketbook	*Arcidens confragosus*
Asiatic Clam	*Corbicula fluminea*
Elephant-ear	*Elliptio crassidens*
Southern Pigtoe	*Fusconaia cerina*
Fat Mucket	*Lampsilis claibornensis*
Southern Pocketbook	*L. ornat*
Orange-nacre Mucket	*L. perovalis*
Yellow Sandshell	*L. teres*
Alabama Heel-splitter	*Lasmigona complanata*
Fragile Papershell	*Leptodea fragilis*
Washboard	*Megalonaias giganta*
Threehorn Warty Back	*Obliquaria reflexa*
Southern Hickorynut	*Obovaria jacksoniana*
Bleufer	*Potamilus purpuratus*
Giant Floater	*Pyganodon grandis*
Southern Mapleleaf	*Quadrula apiculata*
Alabama Orb	*Q. asperata*
Ridged Mapleleaf	*Q. rumphiana*
Lilliput	*Toxolasma parvus*
Pistol Grip	*Tritogonia verrucosa*
Pondhorn	*Uniomerus tetralasmus*
Little Spectaclecase	*Villosa lienosa*
Southern Rainbow	*V. vibex*

Fish

Bass, Hybrid Stripped	*Morone chrysops X Morone saxatilis*
Largemouth	*Micropterus salmoides*
Shadow	*Ambloplites ariommus*
Bowfin	*Amia calva*
Buffalo, Bigmouth	*Ictiobus cyprinellus*
Smallmouth	*Ictiobus bubalus*
Crappie, Black	*Pomoxis nigromaculatus*
Crappie, White	*Poxomis annularis*
Carp, Common	*Cyprinus carpio*
Catfish, Black Bullhead	*Ameiurus melas*
Catfish, Blue	*Ictalurus furcatus*
Catfish, Channel	*Ictalurus punctatus*
Catfish, Flathead	*Pylodictus olivaris*
Catfish,Yellow Bullhead	*Ameiurus natalis*
Gar, Longnose	*Lepisosteus osseus*
Gar, Spotted	*L. oculatus*

Fish (Cont'd)

Common Name	***Scientific Name***
Drum, Freshwater	*Aplodinotus grunniens*
Darter, Frecked	*Percina lenticula*
Darter, Harlequin	*Etheostoma histrio*
Darter, Johnny	*Etheostoma nigrum*
Darter, Redfin	*Etheostoma whipplei*
Eel, American	*Anguilla rostrata*
Herring, Skipjack	*Alosa chrysochloris*
Madtom, Speckled	*Noturus leptacanthus*
Minnow, Bluntnose	*Pimephales, notatus*
Mosquitofish,Western	*Gambusia affinis*
Paddlefish	*Polyodon spathula*
Perch, Pirate	*Aphredoderus sayanus*
Pickerel, Chain	*Esox niger*
Redhorse, Blacktail	*Moxostoma poecilurum*
Sauger	*Stizostedion canadense*
Shad, Gizzard	*Dorsoma cepedianum*
Shad, Threadfin	*Dorsoma petenense*
Shiner, Blacktail	*Cyprinella venusta*
Shiner, Emerald	*Notropis atherinoides*
Shiner, Golden	*Notemigonus crysoleucas*
Shiner, Pretty	*Lythrurus bellus*
Shiner, Redfin	*Notropis umbratilis*
Shiner, Weed	*Notropis texanus*
Silverside, Brook	*Labidesthes sicculus*
Silverside, Mississippi	*Menidia audens*
Sucker, White	*Catostomus commersoni*
Sunfish, Banded Pygmy	*Elassoma zonatum*
Sunfish, Bluegill	*Lepomis macrochirus*
Sunfish, Green	*Lepomis cyanellus*
Sunfish, Longear	*Lepomis megalotis*
Sunfish, Spotted	*Lepomis punctatus*
Sunfish, Redear	*Lepomis microlophus*
Sunfish, Warmouth	*Lepomis gulosus*
Topminnow, Blackspotted	*Fundulus olivaceous*

Mammals

Bat,	Little Brown	*Myotis lucifugus*
	Southeastern Myotis	*Myotis austro*
	Gray Myotis	*Myotis grisescens*
	Keen's Myotis	*Myotis keenii*
	Indiana Myotis	*Myotis sodalis*
	Silver Haired	*Lasionycteris noctivagans*
	Eastern Pipistrelle	*Pipistrellus subflavus*
	Big Brown	*Eptesicus fuscus*
	Red	*Lasiurus borealis*
	Hoary	*Lasiurus cinereus*
	Seminole	*Lasiurus seminolus*
	Evening	*Nycticius humeralis*

Mammals (Cont'd)

Common Name	***Scientific Name***
Eastern Big Eared	*Plecotus rafinesquii*
Beaver	*Castor canadensis*
Bobcat	*Lynx rufus*
Coyote	*Canis latrans*
Fox, Red	*Vulpes vulpes*
Gray	*Urocyon cinereoargenteus*
Mink	*Mustela vison*
Mole, Eastern	*Scalopus aquaticus*
Mouse, Fulvous Harvest	*Reithrodontomys fulvescens*
White footed	*Peromyscus leucopus*
Golden	*Ochrotomys nuttalli*
House	*Mus musculus*
Eastern Harvest	*Reithrodontomys humulis*
Old field	*Peromyscus polionotus*
Cotton	*Peromyscus gossypinus*
Muskrat	*Ondatra zibethicus*
Nutria	*Myocastor coypus*
Opossum	*Didelphis virginiana*
Otter, River	*Lutra canadensis*
Pig, Wild	*Sus scrofa*
Rabbit, Swamp	*Sylvilagus aquaticus*
Eastern cottontail	*Sylvilagus floridanus*
Raccoon	*Procyon lotor*
Rat, Marsh Rice	*Oryzomys palustris*
Eastern Woods	*Neotoma floridana*
Black	*Rattus rattus*
Cotton	*Sigmodon sp.*
Norway	*Rattus norvegicus*
Shrew, Least	*Cryptotis parva*
Short-Tailed	*Blarina brevicauda*
Southeastern	*Sorex longirostris*
Skunk, Striped	*Mephitis mephitis*
Spotted	*Spilogale putorius*
Squirrel, Southern flying	*Glaucomys volans*
Gray	*Sciurus carolinensis*
Fox	*Sciurus niger*
Vole, Pine	*Microtus pinetorum*
Weasel, Long-tailed	*Mustela frenata*
White-tailed deer	*Odocoileus virginianus*

Herptifauna

Alligator, American	*Alligator mississippiensis*
Amphiuma, Three-toed	*Amphiuma tridactylum*
Anole, Green	*Anolis carolinensis*
Cooter, River	*Chrysemys concinna concinna*
Frog, Bull	*Rana catesbeiana*
Squirrel Treefrog	*Hyla squirella*
Green Treefrog	*Hyla cinerea*

Herptifauna (Cont'd)

Common Name	***Scientific Name***
Eastern Gray Treefrog	*Hyla versicolor*
Western Bird-voiced Treefrog	*Hyla avivoca*
Upland Chorus	*Pseudacris feriarum*
Northern Spring Peeper	*Pseudacris crucifer crucifer*
Southern Cricket	*Acris gryllus*
Northern Cricket	*Acris crepitans*
Southern Leopard	*Rana sphenocephala utricularius*
Bronze	*Rana clamitans clamitans*
Northern Crawfish	*Rana areolata circulosa*
Pickerel	*Rana palustris*
Green	*Rana clamitans melanota*
Lizard, Eastern Slender Glass	*Ophisaurus attenuatus longicaudus*
Northern Fence Lizard	*Sceloporus undulatus hyacinthinus*
Six-lined Racerunner	*Cnemidophorus sexlineatus*
Mudpuppy	*Necturus maculosus*
Newt, Broken-striped	*Notophthalmus viridescens dorsalis*
Central	*Notophthalmus viridescens louisianensis*
Salamander, Dusky	*Desmognathus*
Marbled	*Ambystoma opacum*
Mississippi Slimy	*Plethodon mississippi*
Mole	*Ambystoma talpoideum*
Smallmouth	*Ambystoma texanum*
Southern Red	*Pseudotriton ruber vioscai*
Southern Two-lined	*Eurycea cirrigera*
Spotted	*Ambystoma maculatum*
Eastern Tiger	*Ambystoma tigrinum*
Southern Longtail	*Eurycea longicauda longicauda*
Siren, Lesser	*Siren intermedia*
Skink, Broadhead	*Eumeces laticeps*
Ground	*Scincella lateralis*
Five-lined	*Eumeces fasciatus*
Southeastern Five-lined	*Eumeces inexpectatus*
Snake, Eastern Ribbon	*Thamnophis sauritus*
Gray Rat	*Elaphe obsoleta spiloides*
Timber Rattlesnake	*Crotalus horridus*
Pigmy Rattlesnake	*Sistrurus miliarius*
Corn	*Elaphe guttata*
Diamond-backed Water	*Nerodia rhombifer*
Eastern Coachwhip	*Masticophis flagellum flagellum*
Eastern Garter	*Thamnophis sirtalis sirtalis*
Eastern Hognose	*Heterodon platirhinos*
Florida Redbelly	*Storeria occipitomaculata obscura*
Midwest Worm	*Carphophis amornus vermus*
Midland Brown	*Storeria dekayi wrightorum*
Midland Watersnake	*Nerodia sipedon pleuralis*
Mississippi Ringneck	*Diadophis punctatus stictogenys*
Mole Kingsnake	*Lampropeltis calligaster rhombomaculata*
Northern Red-bellied Water	*Nerodia erythrogaster erythrogaster*

Herptifauna (Cont'd)

Common Name	***Scientific Name***
Northern Scarlet	*Cemophora coccinea copei*
Queen	*Regina septemvittata*
Rainbow	*Farancia erytrogramma*
Rough Earth	*Virginia striatula*
Rough Green	*Opheodrys aestivus*
Smooth Earth	*Virginia valeriae*
Scarlet King	*Lampropeltis triangulum elapsoides*
Southeastern Crowned	*Tantilla coronata*
Southern Ringneck	*Diadophis punctatus punctatus*
Southern Black Racer	*Coluber constrictor priapus*
Southern Copperhead	*Agkistrodon contortrix contortrix*
Speckled Kingsnake	*Lampropeltis getula holbrooki*
Western Cottonmouth	*Agkistrodon piscivorus leucostoma*
Western Mud	*Farancia abacura reinwardtii*
Yellowbellied Water	*Nerodia erythrogaster flavigaster*
Toad, American	*Bufo americanus*
Eastern Spadefoot	*Scaphiopus holbrookii*
Eastern Narrow-mouthed	*Gastrophryne carolinensis*
Fowler's	*Bufo fowleri*
Southern	*Bufo terrestris*
Woodhouse's	*Bufo woodhousii*
Turtle, Alabama Map	*Graptemys pulchra*
Alligator Snapping	*Macrochelys temminckii*
Chicken	*Deirochelys reticularia*
Common Snapping	*Chelydra serpentina*
Eastern Mud	*Kinosternon subrubrum*
Red-eared Slider	*Trachemys scripta elegans*
Southern Painted	*Chrysemys picta dorsalis*
Spiny Softshell	*Apalone spinifera*
Loggerhead Musk	*Sternotherus minor minor*
Stinkpot(common musk)	*Sternotherus odoratus*
Three-toed Box	*Terrapene carolina triunguis*
Waterdog, Alabama	*Necturus alabamensis*

Birds

Acadian Flycatcher	*Empidonax virescens*
American Avocet	*Recurvirostra americana*
American Woodcock	*Scolopax minor*
American Coot	*Fulica americana*
American Goldfinch	*Carduelis tristis*
American Wigeon	*Anas americana*
American Black Duck	*Anas rubripes*
American Bittern	*Botaurus lentiginosus*
American Pipit	*Anthus rubescens*
American Kestrel	*Falco sparverius*
American Robin	*Turdus migratorius*

Birds (cont'd)

Common Name	***Scientific Name***
American Crow	*Corvus brachyrhynchos*
American Tree Sparrow	*Spizella arborea*
American Redstart	*Setophaga ruticilla*
Anhinga	*Anhinga anhinga*
Bachman's Sparrow	*Aimophila aestivalis*
Bald Eagle	*Haliaeetus leucocephalus*
Bank Swallow	*Riparia riparia*
Barn Swallow	*Hirundo rustica*
Barred Owl	*Strix varia*
Bay-breasted Warbler	*Dendroica castanea*
Belted Kingfisher	*Ceryle alcyon*
Bewick's Wren	*Thryomanes bewickii*
Black-and-white Warbler	*Mniotilta varia*
Black-bellied Plover	*Pluvialis squatarola*
Black Vulture	*Coragyps atratus*
Black Tern	*Chlidonias niger*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Black-billed Cuckoo	*Coccyzus erythropthalmus*
Black-throated Blue Warbler	*Dendroica caerulescens*
Black-throated Green Warbler	*Dendroica virens*
Blackburnian Warbler	*Dendroica fusca*
Blackpoll Warbler	*Dendroica striata*
Blue-winged Warbler	*Vermivora pinus*
Blue Grosbeak	*Guiraca caerulea*
Blue-gray Gnatcatcher	*Polioptila caerulea*
Blue Jay	*Cyanocitta cristata*
Blue-winged Teal	*Anas discors*
Bobolink	*Dolichonyx oryzivorus*
Bonaparte's Gull	*Larus philadelphia*
Brewer's Blackbird	*Euphagus cyanocephalus*
Broad-winged Hawk	*Buteo platypterus*
Brown-headed Cowbird	*Molothrus ater*
Brown-headed Nuthatch	*Sitta pusilla*
Brown Thrasher	*Toxostoma rufum*
Brown Creeper	*Certhia americana*
Buff-breasted Sandpiper	*Tryngites subruficollis*
Bufflehead	*Bucephala albeola*
Canada Warbler	*Wilsonia canadensis*
Canada Goose	*Branta canadensis*
Canvasback	*Aythya valisineria*
Carolina Chickadee	*Parus carolinensis*
Carolina Wren	*Thrythorus ludovicianus*
Caspian Tern	*Sterna caspia*
Cattle Egret	*Bubulcus ibis*
Cedar Waxwing	*Bombycilla cedrorum*
Cerulean Warbler	*Dendroica cerulea*
Chestnut-sided Warbler	*Dendroica pensylvanica*
Chimney Swift	*Chaetura pelagica*

Birds (cont'd)

Common Name	*Scientific Name*
Chipping Sparrow	*Spizella passerina*
Chuck-will's-widow	*Caprimulgus carolinensis*
Cliff Swallow	*Hirundo pyrrhonota*
Common Nighthawk	*Chordeiles minor*
Common Tern	*Sterna hirundo*
Common Barn Owl	*Tyto alba*
Common Moorhen	*Gallinula chloropus*
Common Grackle	*Quiscalus quiscula*
Common Yellowthroat	*Geothlypis trichas*
Common Goldeneye	*Bucephala clangula*
Common Loon	*Gavia immer*
Common Snipe	*Gallinago gallinago*
Connecticut Warbler	*Oporornis agilis*
Cooper's Hawk	*Accipiter cooperii*
Dark-eyed Junco	*Junco hyemalis*
Dickcissel	*Spiza americana*
Double-crested Cormorant	*Phalacrocorax auritus*
Downy Woodpecker	*Picoides pubescens*
Dunlin	*Calidris alpina*
Eared Grebe	*Podiceps nigricollis*
Eastern Kingbird	*Tyrannus tyrannus*
Eastern Screech-Owl	*Otus asio*
Eastern Phoebe	*Sayornis phoebe*
Eastern Bluebird	*Sialia sialis*
Eastern Meadowlark	*Sturnella magna*
Eastern Wood-Pewee	*Contopus virens*
European Starling	*Sturnus vulgaris*
Evening Grosbeak	*Coccothraustes vespertinus*
Field Sparrow	*Spizella pusilla*
Fish Crow	*Corvus ossifragus*
Fox Sparrow	*Passerella iliaca*
Fulvous Whistling-Duck	*Dendrocygna bicolor*
Gadwall	*Anas strepera*
Glossy Ibis	*Plegadis falcinellus*
Golden-winged Warbler	*Vermivora chrysoptera*
Golden-crowned Kinglet	*Regulus satrapa*
Golden Eagle	*Aquila chrysaetos*
Grasshopper Sparrow	*Ammodramus savannarum*
Gray Catbird	*Dumetella carolinensis*
Gray-cheecked Thrush	*Catharus minimus*
Great Horned Owl	*Bubo virginianus*
Great Crested Flycatcher	*Myiarchus crinitus*
Great Blue Heron	*Ardea herodias*
Great Egret	*Casmerodius albus*
Greater White-Fronted Goose	*Anser albifrons*
Greater Yellowlegs	*Tringa melanoleuca*
Green-winged Teal	*Anas crecca*
Green Heron	*Butorides striatus*

Birds (cont'd)

Common Name	***Scientific Name***
Hairy Woodpecker	*Picoides villosus*
Hermit Thrush	*Catharus guttatus*
Herring Gull	*Larus argentatus*
Hooded Merganser	*Lophodytes cucullatus*
Hooded Warbler	*Wilsonia citrina*
Horned Grebe	*Podiceps auritus*
House Finch	*Carpodacus mexicanus*
House Wren	*Troglodytes aedon*
Indigo Bunting	*Passerina cyanea*
Kentucky Warbler	*Oporornis formosus*
Killdeer	*Charadrius vociferus*
King Rail	*Rallus elegans*
Lark Sparrow	*Chondestes grammacus*
Le Conte's Sparrow	*Ammodramus leconteii*
Least Sandpiper	*Calidris minutilla*
Least Flycatcher	*Empidonax minimus*
Least Bittern	*Ixobrychus exilis*
Lesser Yellowlegs	*Tringa flavipes*
Lesser Scaup	*Aythya affinis*
Lincoln's Sparrow	*Melospiza lincolnii*
Little Blue Heron	*Egretta caerulea*
Loggerhead Shrike	*Lanius ludovicianus*
Long-billed Dowitcher	*Limnodromus scolopaceus*
Louisiana Waterthrush	*Seiurus motacilla*
Magnolia Warbler	*Dendroica magnolia*
Mallard	*Anas platyrhynchos*
Marsh Wren	*Cistothorus palustris*
Mourning Dove	*Zenaida macroura*
Mourning Warbler	*Oporornis philadelphis*
Nashville Parula	*Vermivora ruficapilla*
Northern Harrier	*Circus cyaneus*
Northern Mockingbird	*Mimus polyglottos*
Northern Oriole	*Icterus galbula*
Northern Parula	*Parula americana*
Northern Bobwhite	*Colinus virginianus*
Northern Flicker	*Colaptes auratus*
Northern Cardinal	*Cardinalis cardinalis*
Northern Pintail	*Anas acuta*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Northern Shoveler	*Anas clypeata*
Northern Waterthrush	*Seiurus noveboracensis*
Oldsquaw	*Clangula hyemalis*
Olive-sided Flycatcher	*Contopus borealis*
Orange-crowned Warbler	*Vermivora celata*
Orchard Oriole	*Icterus spurius*
Osprey Pandion	*haliaetus*
Ovenbird	*Seiurus aurocapillus*
Palm Warbler	*Dendroica palmarum*

Birds (cont'd)

Common Name	*Scientific Name*
Pectoral Sandpiper	*Calidris melanotos*
Philadelphia Vireo	*Vireo philadelphicus*
Pied-billed Grebe	*Podilymbus podiceps*
Pileated Woodpecker	*Dryocopus pileatus*
Pine Siskin	*Carduelis pinus*
Pine Warbler	*Dendroica pinus*
Piping Plover	*Charadrius melodus*
Prairie Warbler	*Dendroica pinus*
Prothonotary Warbler	*Protonotaria citrea*
Purple Finch	*Carpodacus purpureus*
Purple Gallinule	*Porphyrula martinica*
Purple Martin	*Progne subis*
Red-bellied Woodpecker	*Melanerpes carolinus*
Red-cockaded Woodpecker	*Picoides borealis*
Red-headed Woodpecker	*Melanerpes erythrocephalus*
Red-breasted Merganser	*Mergus serrator*
Red-winged Blackbird	*Agelaius phoeniceus*
Red-shouldered Hawk	*Buteo lineatus*
Red-breasted Nuthatch	*Sitta canadensis*
Red Crossbill	*Loxia curvirostra*
Red-tailed Hawk	*Buteo jamaicensis*
Red-eyed Vireo	*Vireo olivaceus*
Redhead	*Aythya americana*
Ring-billed Gull	*Larus delawarensis*
Ring-necked Duck	*Aythya collaris*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Roseate Spoonbill	*Ajaia ajaja*
Ruby-crowned Kinglet	*Regulus calendula*
Ruby-throated Hummingbird	*Archilochus colubris*
Ruddy Duck	*Oxyura jamaicensis*
Rufous-sided Towhee	*Pipilo erythrophthalmus*
Rusty Blackbird	*Euphagus carolinus*
Sanderling	*Caldris alba*
Savannah Sparrow	*Passerculus sandwichensis*
Scarlet Tanager	*Piranga olivacea*
Sedge Wren	*Cistothorus plantensis*
Semipalmated Sandpiper	*Calidris pusilla*
Semipalmated Plover	*Charadrius semipalmatus*
Sharp-shinned Hawk	*Accipiter striatus*
Sharp-tailed Sparrow	*Ammodramus caudacutus*
Short-billed Dowitcher	*Limnodromus griseus*
Short-eared Owl	*Asio flammeus*
Snow Goose	*Chen caerulescens*
Snowy Egret	*Egretta thula*
Solitary Sandpiper	*Tringa solitaria*
Solitary Vireo	*Vireo solitarius*
Song Sparrow	*Melospiza melodia*
Sora	*Porzana carolina*

Birds (cont'd)

Common Name	***Scientific Name***
Spotted Sandpiper	*Actitis macularia*
Stilt Sandpiper	*Calidris himantopus*
Summer Tanager	*Piranga rubra*
Surf Scoter	*Melanitta perspicillata*
Swainson's Thrush	*Catharus ustulatus*
Swainson's Warbler	*Limnothlypis swainsonii*
Swamp Sparrow	*Melospiza georgiana*
Tennessee Warbler	*Vermivora peregrina*
Tree Swallow	*Tachycineta bicolor*
Tricolored Heron	*Egretta tricolor*
Tufted Titmouse	*Parus bicolor*
Tundra Swan	*Cygnus columbianus*
Turkey Vulture	*Cathartes aura*
Veery	*Catharus fuscescens*
Vesper Sparrow	*Pooecetes gramineus*
Virginia Rail	*Rallus limicola*
Warbling Vireo	*Vireo gilvus*
Western Sandpiper	*Calidris mauri*
Whip-poor-will	*Caprimulgus vociferus*
White-breasted Nuthatch	*Sitta carolinensis*
White Ibis	*Eudocimus albus*
White Pelican	*Pelecanus erythrorhynchos*
White-rumped Sandpiper	*Calidris fuscicollis*
White-throated Sparrow	*Zonotrichia albicollis*
White-crowned Sparrow	*Zonotrichia leucophrys*
White-eyed Vireo	*Vireo griseus*
Wild Turkey	*Meleagris gallopavo*
Wilson's Warbler	*Wilsonia pusilla*
Winter Wren	*Troglodytes troglodytes*
Wood Thrush	*Hylocichla mustelina*
Wood Stork	*Mycteria americana*
Wood Duck	*Aix sponsa*
Worm-eating Warbler	*Helmitheros vermivorus*
Yellow-bellied Sapsucker	*Sphyrapicus varius*
Yellow-billed Cuckoo	*Coccyzus americanus*
Yellow-breasted	*Chat Icteria virens*
Yellow-throated Warbler	*Dendroica dominca*
Yellow-throated Vireo	*Vireo flavifrons*
Yellow-rumped Warbler	*Dendroica coronata*
Yellow-crowned Night-Heron	*Nycticorax violaceus*
Yellow Warbler	*Dendroica petechia*

Appendix E. Intra-Service Section 7 Biological Evaluation

REGION 4

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION

[Note: This form provides the outline of information needed for intra-Service consultation. If additional space is needed, attach additional sheets, or set up this form to accommodate your responses.]

Originating Person: Jim Tisdale
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Date: March 15, 2002

PROJECT NAME
(Grant Title/Number): Noxubee National Wildlife Refuge Comprehensive Conservation Plan

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I. Service Program:

___ Ecological Services
___ Federal Aid
___ Clean Vessel Act
___ Coastal Wetlands
___ Endangered Species Section 6
___ Partners for Fish and Wildlife
___ Sport Fish Restoration
___ Wildlife Restoration
___ Fisheries
_X_ Refuges/Wildlife

II. State/Agency: Mississippi/ U.S. Fish and Wildlife Service

III. Station Name: Noxubee National Wildlife Refuge

IV. Description of Proposed Action (attach additional pages as needed):
Implementation of the Comprehensive Conservation Plan for Noxubee National Wildlife Refuge by adopting the preferred alternative: Manage wildlife and habitat with emphasis on old growth forest communities; increase education and recreation programs. This plan will provide guidance, management direction, and operation plans for the next 15 years.

V. Pertinent Species and Habitat:

A. Include species/habitat occurrence map:

- American bald eagle occurs refuge-wide.
- American alligator occurs refuge-wide in lakes, ponds, sloughs and rivers.
- Red-cockaded woodpeckers occur throughout refuge uplands.
- Orange-nacre mucket mussels occur in rivers and creeks.

B. Complete the following table:

SPECIES/CRITICAL HABITAT	STATUS[1]
American bald eagle	T
American alligator (listed by similarity of appearance)	T
Red- cockaded woodpecker	E
Orange-nacre mucket (Lampsilis perovalis)	T

[1]STATUS: E=endangered, T=threatened, PE=proposed endangered, PT=proposed threatened, CH=critical habitat, PCH=proposed critical habitat, C=candidate species

VI. Location (attach map):

A. Ecoregion Number and Name: 29; Central Gulf Coast

B. County and State: Oktibbeha, Noxubee, and Winston Counties, Mississippi

C. Section, township, and range (or latitude and longitude):
Latitude: 33 16; Longitude: 88 47

D. Distance (miles) and direction to nearest town: 15 miles east to Brooksville, Mississippi

E. Species/habitat occurrence:
American bald eagles are frequently seen around refuge lakes and moist soil impoundments.
American alligators are common in refuge lakes, ponds, sloughs, and rivers.
Red-cockaded woodpeckers are fairly common in refuge pine forests.
A shell of an orange-nacre mucket was found in 2000. No extant populations have been found.

Determination of Effects:

A. Explanation of effects of the action on species and critical habitats in item V. B (attach additional pages as needed):

SPECIES/ CRITICAL HABITAT	IMPACTS TO SPECIES/CRITICAL HABITAT
American bald eagle	No negative impacts foreseen. Expect more protection.
American alligator	No negative impacts foreseen. Expect more protection.
Red-cockaded woodpecker	No negative impacts foreseen. Expect more protection.
Orange-nacre mucket	No negative impacts foreseen. Expect more protection.

B. Explanation of actions to be implemented to reduce adverse effects:

SPECIES/ CRITICAL HABITAT	ACTIONS TO MITIGATE/MINIMIZE IMPACTS
American bald eagle	Maintain and expand wetland and forested habitats.
American alligator	Maintain and expand wetland habitats.
Red-cockaded woodpecker	Maintain and expand pine forest habitat.
Orange-nacre mucket	Maintain and expand wetland and riverine habitats. Maintain water quality.

VIII. Effect Determination and Response Requested:

SPECIES/ CRITICAL HABITAT	DETERMINATION[1]			RESPONSE[1] REQUESTED
	NE	NA	AA	
Red-cockaded woodpecker		X		Concurrence
American bald eagle		X		Concurrence
American alligator		X		Concurrence
Orange-nacre mucket		X		Concurrence

[1]DETERMINATION/RESPONSE REQUESTED:

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested is optional but a "Concurrence" is recommended for a complete Administrative Record.

NA = not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response Requested is a "Concurrence".

AA = likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested for liste species is "Formal Consultation". Response Requested for proposed or candidate species is "Conference".

_____ _____

Signature (originating station) **Date**

_____

Title (Refuge Manager)

IX. Reviewing Ecological Services Office Evaluation:

A. Concurrence _____ Nonconcurrence _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required _____

E. Remarks (attach additional pages as needed):

_____ _____
Signature **Date**

_____ _____
Title **Office**

Appendix F. Compatibility Determinations

Introduction

A compatibility determination documents the formal procedure used to determine if existing and proposed uses of national wildlife refuges are compatible with the purpose of each refuge and the mission of the National Wildlife Refuge System. Under the National Wildlife Refuge System Administration Act of 1966, the Refuge Recreation Act of 1962, and the National Wildlife Refuge System Improvement Act of 1997, the Service may not permit public recreational uses on national wildlife refuges unless the uses are determined to be compatible.

All lands of the National Wildlife Refuge System will be managed in accordance with an approved comprehensive conservation plan that will guide management decisions and set forth strategies for achieving refuge purposes. The management of all wildlife-dependent recreational activities on Noxubee National Wildlife Refuge is directed towards providing quality, compatible, wildlife-dependent recreational opportunities for visitors in a manner that does not negatively impact wildlife population levels or the natural diversity of the area. Public use opportunities are varied and may include both consumptive and non-consumptive uses.

The following compatibility determination's rely on best estimates of current public use levels. Information was obtained by the refuge staff during the first year of refuge-administered public use. The Service will continue, as indicated in the comprehensive conservation plan, to gather definitive public use data, conduct surveys to estimate wildlife populations, and assess public use impacts on the resources. If adverse impacts are identified, modifications to that particular public use activity will occur to minimize the impact. For additional details and to reference specific citiations outlined, refer to the Comprehensive Conservation Plan and Environmental Assessment for Noxubee National Wildlife Refuge.

The Compatibility Determinations that follow used the Fish and Wildlife Service Manual, Standard Exhibit 2, 603 FW 2, for evaluating uses.

This Appendix documents compatibility determinations for both existing and proposed uses.

Refuge Name: Noxubee National Wildlife Refuge

Establishing and Acquisition Authorities: Executive Order 8444, dated June 14, 1940 (Rural Resettlement Administration; Public Land Order 205, dated January 27, 1944; Public Land Order 401, dated 1947.

Refuge Purposes: The primary establishing legislation for the refuge was Executive Order 8444, dated June 14, 1940, with the stated purpose "...as a refuge and breeding ground for migratory birds and other wildlife...." 16 U.S.C., 715 (Migratory Bird Conservation Act).

"...conservation, management, and restoration of the fish, wildlife, and plant resources and their habitats for the benefit of present and future generations of Americans." 16 U.S.C. 668dd(a)(2) (National Wildlife Refuge System Administration Act).

"...for the development, advancement, management, conservation, and protection of fish and wildlife resources...." 16 U.S.C. 742f(a)(4).

"...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...." 16 U.S.C 742f(b)(1) (Fish and Wildlife Act of 1956).

Subsequently, a small amount of land purchased with Migratory Bird Conservation Stamp monies held the following purpose "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 United States Code (USC)715d (Migratory Bird Conservation Act).

National Wildlife Refuge System Mission: The mission of the National Wildlife Refuge System is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resoures and their habitats within the United States for the benefit of present and future generations of Americans."

Applicable Laws, Regulations, and Policies: Development of a public use program that provides optimum opportunities for wildlife-dependent recreational uses, and for other uses and programs outlined below and evaluated in the following compatibility determinations, has negligible impacts on refuge resources. Allowing these uses to be developed and/or continued is not expected to be controversial regarding the impacts on refuge resources.

In assessing the potential impacts of refuge uses, all available tools were utilized (Fish and Wildlife Service 1986). A site-specific personal communication with the Mississippi Department of Wildlife, Fisheries, and Parks, data collection, development of the comprehensive conservation plan, environmental assessment and general references are considered to be sufficient bases on which to make these compatibility determinations.

Noxubee National Wildlife Refuge has been collecting trends' data for several years. As the public use program is fully implemented, the refuge will continue to assess any possible impacts it may have on resources and wildlife populations. Changes in the program will be implemented as needed to address any impacts, and to respond to anticipated wildlife population changes due to implementation of state-of-the-art wildlife management activities.

During the scoping phase of preparing the comprehensive conservation plan, a public meeting was held to solicit input and comments on all aspects of refuge management. Copies of the draft comprehensive conservation plan will be distributed for a 60-day review period to garner public comments, both written and verbal, on the draft plan. During this review period, an open house will be held to solicit comments on the draft plan.

See Appendix C for relevant legal mandates.

Public Review and Comment

A compatibility determination has been prepared for the following proposed and existing uses for Noxubee National Wildlife Refuge:

- recreational hunting;
- recreational fishing;
- wildlife observation and photography;
- environmental education and interpretation;
- forest habitat management;
- haying; and
- research and collections.

Description of Use

Recreational Hunting (white-tailed deer, raccoons, and waterfowl)

Availability of Resources

Based on a review of the refuge's budget allocated for recreational hunting, there is adequate funding to ensure compatibility and to administer this use at its current level. However, additional funding would be needed to cover the costs of proposed hunting blinds for disabled hunters, as well as for vehicle pull-offs and parking areas to facilitate safe access to hunting areas. The proposed waterfowl hunt program (including a youth waterfowl hunt) would require funding to cover the costs of salary and benefits for one biological technician to assist in monitoring this activity.

Anticipated Impacts of Use

The biological implications of an uncontrolled white-tailed deer population are well documented and accepted though research over a period of many years. Deer can become so numerous that they may adversely affect associated plant and animal communities, and hence alter ecological diversity and succession. This may result in significant negative impacts on both plant and animal communities including some of special concern or some for which the Fish and Wildlife Service has trust responsibility. The permitted use would result in approximately 500-700 deer being taken from the refuge herd each year. This reduction would help balance the population, limit ecosystem damage from overbrowsing, and help maintain good herd health by reducing disease and problems associated with nutrition. There would be some disturbance to other wildlife species, however, there are no documented biological problems affecting other species as a result of a managed hunt program.

Heavy predation of waterfowl nests are a documented concern of an overpopulated raccoon population. Through the use of a recreational managed hunt, it is estimated that approximately 200-300 raccoons are removed from the refuge each year. As can be imagined, without a raccoon hunt on the refuge, the population could balloon to a point where waterfowl production could cease to exist. Raccoons have been steadily hunted in the south for more than 200 years, and hunting has never significantly affected the population as a whole. A reduction in the number of raccoons on the refuge would assist in balancing its population with the environment, and would limit depredation of waterfowl nests. It should also be noted that when raccoon populations exceed the carrying capacity of a geographical area, distemper and rabies die-offs occur. These die-offs usually result in a significant portion of the population being removed. Unfortunately, both rabies and distemper pose a threat to humans, domestic animals, and other wildlife. Through the use of managed hunts, the frequency of rabies and distemper outbreaks is lessened.

Anticipated effects of upland game hunting are expected to be minimal.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

- Data would be collected and analyzed to ensure that hunts are biologically sound and that the deer herd is being controlled to the point of preventing damage to the ecosystem.
- An annual hunt evaluation would be prepared by the refuge which would discuss compatibility, and would be reviewed and approved by the Service.
- Hunting season dates and regulations would be coordinated with the Mississippi Department of Wildlife, Fisheries, and Parks biologists, and with biologists from Mississippi State University.
- An active law enforcement program would ensure regulation compliance and would protect refuge resources.
- Vehicle use would be restricted to regularly maintained roads.

- Waterfowl populations on the refuge must exceed pre-1975 levels in order for a general hunt season to be held. However, special youth hunts could be held based on the refuge manager's discretion, and providing waterfowl population levels are sufficient.
- Hunting would be conducted in accordance with the provisions of the approved hunt plan. Harvest management strategies would be based on objectives of the hunt plan. Results of each hunting season would be thoroughly evaluated to ensure that harvest management remains dynamic and responsive to the needs of the refuge.

Justification

As per 8 RM 5.3 (A) (1&2), the management purpose of Noxubee National Wildlife Refuge is governed under the rules of the Migratory Bird Conservation Commission, and as such not more than 40 percent of the refuge would be opened for the purpose of waterfowl hunting. Actually, ony 18.75 percent of the the total wetland acreage has been opened for waterfowl hunting.

The Refuge Manual further states that the refuge's classification as an inviolate sanctuary imposes no restrictions or limitations on the hunting of non-migratory birds or other game mammals.

The big game and raccoon hunts are being used as management tools to protect the diverse refuge ecosystem from the damage which would result from too many animals. Not only would the habitat of resident wildlife be protected through the use of deer and raccoon hunts, but also that of many species of migratory birds. The hunting of raccoons would reduce the species, thereby lowering impacts on waterfowl nests. The upland game hunts are steeped in history and have caused no negative impacts to either the species involved or the ecosystem. Section 16 U.S.C., 668dd, 50 C.F.R., 26.31 states: "Public recreation will be permitted on National Wildlife Refuges as an appropriate incidental or secondary use, only after it has been determined recreational use is practical and not inconsistent with the primary objectives of which each particular area was established or with other authorized Federal operations." It has been determined that hunting is a compatible use of the refuge and would not violate any provisions of this code. A reduction in the number of deer on the refuge would help reduce the number of deer/car collisions that occur on and adjacent to the refuge, and also reduce the number of deer damage complaints from refuge neighbors. The only biological and cost effective method of balancing the deer population with its environment is through public hunting.

Upland game hunting on the refuge satisfies provisions of 50 C.F.R., and the Refuge Manual by providing a quality hunting experience and thousands of hours of wholesome outdoor recreation. There is good public involvement throughout the hunt planning and evaluation process with comments received from both hunting and non-hunting members of the public. Through the presentation of refuge programs, contacts with various groups, letters, publications, and hunter notes, the public is actively involved in the decision-making process.

Mandatory 10- 15-Year Re-Evaluation Date: _____

Description of Use

Recreational Fishing (Including fishing clinics, fishing derbies, and fishing tournaments)

Recreational fishing is a common public use on the refuge and surrounding areas. Fishing is permitted on designated refuge lakes on a seasonal basis. The refuge fishing season begins on March 1 and ends on October 31, on all waters except the Noxubee River, which is open year round. Fish creel limits, boating safety, and license requirments are in accordance with the State of Mississippi regulations.

Bluff and Loakfoma lakes, Ross Branch Reservoir, Noxubee River, and several creeks harbor a substantial fishery. Primary game fish include largemouth bass, crappie, bream, and channel catfish. Night-time bowfishing is allowed for rough type fish species in Loakfoma and Bluff lakes, or other refuge waters as necessary. Gas- and electric-powered boats are allowed and used on both lakes.

Availability of Resources

Based on a review of the refuge's budget allocated for recreational fishing, there is adequate funding to ensure compatibility and to adminster the use at its current level. Additional fiscal resources would be needed to conduct this use as proposed. Personnel from Private John Allen Fish Hatchery in Tupelo, Mississippi, would continue to stock largemouth bass, bream, and catfish in the refuge lakes. As funding becomes available, additional parking, information kiosks, fishing piers, boat ramps, docks, and piers would be added. Creel surveys would be conducted and water quality analysis performed in order to provide a high quality fishing experience.

Anticipated Impacts of Use

Recreational fishing should not adversely affect fishery resources, wildlife resources, or endangered species on the refuge. There may be some limited disturbance to certain species of wildlfie and some trampling of vegetation; however, this disturbance should be short-lived and relatively minor and would not negatively impact wetland values. Known bird rookery sites do not occur at locations currently popular for fishing activities; therefore, disturbance should not be a problem. If disturbance at these sites is identified as a problem in future years, closed areas would be established during the nesting season. Bowfishing would only be allowed in the summer and early fall months so as not to disturb resting or feeding waterfowl.

During construction of parking areas, boat ramps, docks, and piers, some disturbance to the natural environment would occur. When the improvements are completed, public use of the water bodies would increase but the level of use is not expected to be detrimental to wildlife.
Gas powered motors are noisy and can be disturbing to other recreationists and to wildlife. They can add petroleum to the water and can produce an unpleasant smell. Electric motors do not add fuels to the water and are relatively quiet, but they may disturb birds.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

- Current regulations would be necessary to ensure that this activity remains compatible with refuge purposes.
- The closure of refuge impoundments during the peak waterfowl migration period would continue to protect waterfowl from undue disturbance.
- Refuge management activities should always be focused toward refuge purpose, with fisheries management as an incidental management practice.
- The refuge manager would reserve the right to enact special regulations on the fishing program (i.e., 14" minimum length on largemouth bass).
- No special considerations would be given to tournaments, derbies, or clinics. Any use of the refuge by any group for the above-mentioned purposes would be at the same rights granted to any member of the general public (i.e., the lake would not be reserved for any one group, but rather open for general fishing). No commercial fishing activities would be allowed on the refuge.
- In addition to specific refuge regulations, all applicable state laws would apply to individuals fishing on the refuge.
- All construction activities would be carried out with appropriate permits under Section 404 of the

Clean Water Act and State Historic Preseration Officer review of cultural resources.

- Sediment retention barriers would be utilized during boat ramp construction and soil stabilization features would be incorporated into ramp design to minimize any potential future soil erosion.
- Time and space zoning of lake use would be utilized as necessary to minimize wildlife disturbance. Problems associated with littering and illegal take of fish would be controlled through law enforcement activities. Providing information to refuge visitors about rules and regulations, along with increased law enforcement patrol, would keep these negative impacts to a minimum.
- Bowfishing seasons will be regulated by the Refuge Manager between the period of April 1st through September 30th of each year. This would reduce any undue disturbance to resting or feeding waterfowl during the winter migration period.
- Species considered for take would be only rough fish as described by laws enacted by the Mississippi Department of Wildlife, Fisheries, and Parks. The refuge manager may further restrict the take of any species at his/her discretion.
- Fishermen must comply with the laws of the Mississippi Department of Wildlife, Fisheries, and Parks, as well as refuge-specific regulations.
- All fishermen would be issued and required to complete and return a copy of the Special Use Permit for bow fishing. This would enable the refuge to maintain records of use and harvest.
- Special Use Permits would only be used for up to a 2-day period.
- The closure of refuge impoundments during peak waterfowl migration would continue to protect waterfowl from undue disturbance.
- The refuge manager would reserve the right to enact special regulations in regards to recreational boating on the refuge.
- In addition to refuge-specific regulations, all applicable state laws would apply to individuals boating on the refuge.

Justification

Recreational fishing has been allowed on Noxubee National Wildlife Refuge since it was established. Portions of the refuge were officially opened for public fishing through the Hunting and Fishing Plan of 1960. With current restrictive regulations, this use of the refuge resource is compatible with the purposes for which the refuge was established. Through the use of posters, informational signs, and personal contacts, refuge visitors can stay informed on other management practices on the refuge. Bow fishing for non-game fish only is permitted, with nightime bow fishing allowed during April through August. Recreational boating, as a rule, goes hand-in-hand with the refuge fishing program. There are, however, those individuals who only want to pleasure boat. As long as the boating regulations are streamlined with the refuge fishing regulations, this use would remain compatible with refuge purposes.

Mandatory 10- 15-Year Re-Evaluation Date:_____

Description of Use

Wildlife Observation and Photography

Currently, wildlife observation and photography occurs along the main refuge roads, some levees, and trails.

Visitors observe wildlife by walking or using motorized vehicles, motorized/non-motorized boats, and bicycles. Foot travel is generally allowed on refuge roadways, levees, and trails. Motorized vehicles are restricted to most refuge roadways (closed roads being marked), with most use occurring along Bluff Lake road and other county roads. Other areas of high public use are the Goose overlook, the Woodpecker trail, the Trail of Big Trees, and the trail adjacent to Greentree Reservoir No. 1. Boats are only allowed on Bluff and Loakfoma lakes from March 1 - October 31 of each year to prevent disturbance to migratory waterfowl. Bicycles are allowed on all open refuge and county roads. Horses are allowed only on the county roads (over which the refuge has no jurisdiction). The refuge proposes to add the following to improve wildlife observation and photography opportunities for all visitors: Auto

tour route, Wetlands boardwalk and nature trail at visitor center, and asphalt paving of Bluff Lake and Brookesville-Louisville roads.

Availability of Resources

Based on a review of the refuge's budget allocated for this activity, there is adequate funding to ensure compatibility and to adminster the use at its current level. Additional fiscal resources would be needed to develop the proposed auto tour route, wetlands boardwalk and nature trail, and paving of roads.

Anticipated Impacts of Use

There would be some refuge wildlife killed or injured when crossing roadways in front of oncoming vehicles. There would be a significant amount of vegetation trampled, injured, and killed (the result of 110,000 visitors/year). However, the vegetation damaged would be widespread across the refuge and amounts would be difficult to assess. Generally, direct impacts would result from violations of refuge regulations; i.e., disturbing wildlife, removing plants, littering, and vandalism.

Wildlife photographers can, at times, get too close to animals in their quest to "get the best shot." This usually results in disturbance of the animal (i.e., permanent dislocation or death of the animal). There have been situations where young wading birds have jumped from their nests upon being too closely observed.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

Photographers would be excluded from some areas of the refuge at all times, and other areas only during peak waterfowl migration. This should prevent unnecessary disturbance during this critical time. This exclusion would also provide sanctuary where wildlife can escape all human disturbance.

Justification

Most visitors come to the refuge to view wildlife. The refuge receives a large percentage of its public use from Mississippi State University students who come to the refuge to "see the animals" and relieve the tension of college life. Wildlife observation is not only a compatible use but a desired one.

"A picture is worth a thousand words." Probably as high as one-half of all visitors carry a camera and/or video camera to take photographic images while on the refuge. This type of public use is considered as an incidental type of use, usually combined with another activity (i.e. fishing, hunting, wildlife observation, etc.). Wildlife photography is ruled as consistent with the refuge purpose.

Mandatory 10- 15-Year Re-Evaluation Date: _____

Description of Use

Environmental Education and Interpretation

Environmental education and interpretation would include those activities which seek to increase the public's knowledge and understanding of wildlife and contribute to wildlife conservation. Traditional environmental education opportunities such as teacher-led or staff-led field trips; nature study, such as teacher and student workshops; interpretation of wildlife resources; and trips to support facilities such as visitor center and interpretive trails.

Availability of Resources

Based on a review of the refuge's budget allocated for this activity, there is adequate funding to ensure compatibility and to administer these uses at their current level. Additional funding would

be required to provide the level of programs, activities, and facilities as proposed in the comprehensive conservation plan.

Anticipated Impacts of Use

The use of on-site, hands-on, action-oriented activities by groups of up to 50 students/teachers to accomplish environmental education objectives may impose a low-level impact on the sites used for these activities. These low-level impacts may include trampling of vegetation and temporary disturbance of wildlife species in the immediate area of the activity. It is not anticipated, however, that such impacts would be permanent or long lasting.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations to Ensure Compatibility

- Activities held on site would be held where minimal impact would occur.
- Periodic evaluations of sites and programs would be conducted to assess if objectives are being met and resources not being degraded.
- If evidence of unacceptable adverse impacts begin to appear, it may be necessary to rotate the location of outdoor classroom activity.
- Regulations to ensure the safety of all participants would be issued in writing to the teacher(s) responsible for the activities and reviewed before students begin the activities.
- Outdoor classroom areas would be confined to the same areas as the general public (i.e., away from resting waterfowl areas, closed areas, etc.).

Justification

Facilities such as trails, information shelters, signs, etc., obviously take funding to build and maintain. These expenses are weighed against the objectives of the program. The Service feels the gains are more than worth the cost of operating the environmental education program.

The refuge utilizes environmental education to motivate citizens of all ages to action and understanding in protecting a healthy ecosystem. The environmental education program is a tool in building a land ethic, developing political support, lessening vandalism, littering, poaching, and becoming visible to the community in a positive way.

Through the use of environmental education, the refuge has a positive interpretive impact on approximately 110,000 people each year. These people are given insights into specific refuge problems, and the needs of specific species, such as:

- The endangered red-cockaded woodpecker, its habitat and specific needs;
- Wetlands management and its effect on the ecosystem;
- Refuge management techniques and why they are used; and
- The development of pride in the National Wildlife Refuge System to reduce littering, poaching, and vandalism, and increase public participation.

Mandatory 10- 15-Year Re-Evaluation Date: _____

Description of Use

Forest Habitat Management

Management and manipulation of forested wildlife habitat through the use of prescribed fire, wildlife suppression, forest silviculture, and commercial timber harvesting operations.

Commercial contractors would be used for some forest management activities including pre-commercial and commercial thinning and selective harvest. The purposes of each treatment are part of an effort to restore forest structure and composition to more natural conditions and may include any one or more of the following:

Increase the proportion of mature forests;
Maintain mature forest components;
Prepare stands for reintroduction of low-intensity prescribed fire; and
Reduce tree densities in overstocked stands by favoring mature and over-mature trees, and promoting diameter and height growth in the remaining stand.

Most trees designated for cutting would be less than 70 years old. For all sales of merchantable timber, the refuge would post a public notice in the newspaper. Special use permits would be issued to successful bidders.

Availability of Resources

Based on a review of the refuge's budget allocated for this activity, there is adequate funding to ensure compatibility and to administer the use at its current level.

Anticipated Impacts of Use

The effects of harvest operations are described in the refuge's forest management plan and environmental assessment dated December 1995. Disturbed sites from commercial timber harvests (i.e., skid trails, roads, loading areas), alter vegetation and soil components which are potential sites for the establishment of noxious weeds and invasive species.

The impacts of forest management on the refuge are generally positive. The forest habitat management plan is a tool used to manipulate, create, and maintain wildlife habitat. Through the use of techniques in the plan, the Service is able to create and maintain habitat for such species as the endangered red-cockaded woodpecker, wintering and resident waterfowl, resident wildlife, and a number of neotropical migratory birds. All forest habitat management activities are designed to meet either short- or long-term habitat objectives.

The use of prescribed fire and commercial timber harvesting would cause some vegetation and wildlife disturbance, as well as some soil compaction.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

All forest habitat management activities are strictly regulated as to timing and location to minimize potential negative impacts. Commercial timber harvesting operations are regulated by conditions stipulated in a special use permit. The permit strictly regulates the timing, methods, equipment, and quality of the required operations. Rehabilitation of log loading areas, skid trails, and logging roads is required to mitigate potential soil compaction.

Special provisions would be developed and enforced through the special use permit process for each timber sale. All federal and state regulations and refuge objectives must be followed. Most sales would occur between March and October to minimize disturbance to breeding and nesting wildlife and to minimize soil impacts and runoff. Harvests may be postponed during severe drought conditions to reduce the potential for wild fires.

Justification

Effective forest habitat management operations allow for the creation and maintenance of conditions critical for the breeding and foraging success of the endangered red-cockaded woodpecker, and a diversity of habitat for migratory waterfowl, resident wildlife, and neotropical migratory birds.

Prescribed burning and commercial timber harvesting are the only practical tools available for the refuge to create and meet its long-term forest habitat goal of stands of 50 years or older. Some neotropical migratory birds prefer younger and more forested habitats. Upland species, such as wild turkey and bobwhite quail, use open forested areas during the year. The only way to provide this type of habitat through time is by careful use of prescribed fire and commercial timber harvesting.

It is not economically feasible for the refuge to complete commercial harvest operations to achieve forest management objectives. The funds needed for specialized equipment and required training on use of the equipment are not available. Local contractors already have the equipment and expertise as well as knowledge of mills, road system, weather patterns and other factors affecting timing and success of harvest operations.

Mandatory 10- 15-Year Re-Evaluation Date: _____

Description of Use

Haying

Approximately 6 fields, totalling 200 acres, are maintained through haying by cooperative farmers. Grasses in these fields consist primarily of paspalum, bahia, dallis, and some bermuda. These fields provide important feeding areas for a variety of wildlife, especially wild turkeys and seed-eating birds. Turkeys also use the fields for strutting areas. A variety of small mammals, such as rabbits, mice, and rats, also use the fields. These species, in turn, support an array of predatory animals such as hawks, owls, foxes, and coyotes.

Availability of Resources

Based on a review of the refuge's budget allocated for this activity, there is adequate funding to ensure compatibility and to administer the use at its current level.

Anticipated Impacts of Use

The predominance of all anticipated impacts are expected to be of a positive nature. Haying is used as a management tool at the refuge to maintain open fields, thus preserving biodiversity. These areas would revert over time to primarily pine regeneration, and would be lost as open areas. Negative impacts include the possibility that small mammals and insects would be killed during the actual cutting and gathering of hay from the fields. It is also possible that larger mammals, such as deer fawns, could be killed or injured during the cutting process of the hay.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

- The first cut from a field would be free to any participants. This would make the program attractive to the public. Any subsequent cuts from the same field would have to be preceded by an application of commercial fertilizer at a rate necessary to restore removed nutrients to the soil.
- All haying activity would be reviewed and approved/disapproved by the refuge manager or his delegate.

Justification

Haying plays an important role in the management scheme of the refuge. It is used to maintain open areas for:

- Bugging grounds for neotropical migratory songbirds and wild turkey poults.
- Maintaining interspersion through haying program to promote biodiversity.
- Promoting populations of small rodents, rabbits and quail through maintenance of "edge effect."

Mandatory 10- 15-Year Re-Evaluation Date: _____

Description of Use

Research and Collections

This use would allow university students and professors, non-governmental researchers, and government scientists access to the refuge to conduct both short- and long-term research projects. Efforts would be made to expand partnerships in order to conduct research associated with the recovery of threatened and endangered species. All scientific research and biological collections on the refuge, including research relating to wildlife or forest management or other environmental sciences, and collection of fauna, flora, and other organisms for systematic or museum studies, would be covered under this use.

Availability of Resources

No additional fiscal resources would be needed to conduct this use. The existing staff can administer permits and monitor use as part of routine management duties.

Anticipated Impacts of Use

The outcome of this research would result in better knowledge of our natural resources and improved methods to manage, monitor, and protect refuge resources. The anticipated impacts on the refuge associated with scientific and biological collections would be minimal. The loss of a small number of organisms or disturbance is likely in all research, but should not adversely affect the species or habitat as a whole. In general, research projects are developed to minimize disturbance to organisms and the surrounding environment. Scientific collections are regulated to ensure that only the smallest samples are taken to acquire needed information. Most research projects or biological collections are developed to address wildlife or forest management problems and also to provide base-line data to evaluate long-term changes of species abundance and distribution; therefore, this use should have general positive impacts.

Determination (Check One Below)

__ Use is Not Compatible
X Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility

Scientific research and biological collection would be evaluated and modifications to proposals would be made, when needed, prior to issuance of a special use permit to prevent or minimize disturbance to nesting or wintering waterfowl and the endangered red-cockaded woodpecker. The final decision to issue a permit to conduct research or collect biological organisms should be left to the discretion of the refuge manager.

Introduction of exotic plants or animals for research would not be permitted unless specific justification and provision for their control is adequately planned. Determination for introduction of exotics should be left to the discretion of the refuge manager.

Research projects involving large-scale habitat alterations to evaluate silviculture techniques would be allowed only when such treatments could be included as part of the normal forest management on the refuge. Determination for allowing this research would be left to the discretion of the refuge manager.

Research projects involving or affecting endangered species would be critically reviewed prior to issuance of a special use permit. A Section 7 Biological Evaluation would be conducted to determine any effects on threatened or endangered species.

Justification

Scientific research and biological collections have been conducted on refuges since their inception. Annually, 10 to 15 projects are conducted on the refuge with no long-term impacts to the species studied or their environment. The basis for most management practices performed on refuges stems from research. In addition, long-term monitoring of many species (i.e., neotropical migratory birds) is necessary to evaluate population trends. The refuge consists of an array of unique habitats not readily located on private or state lands for such monitoring programs. In addition, these ecosystems represent especially important places to address wildlife and forestry management concerns. Moreover, they consist of certain microhabitats that contain rare or unusual organisms that can only be studied in their natural environment. Conservation and management of many organisms on the refuge and elsewhere will depend upon future research and biological collections.

Mandatory 10- 15-Year Re-Evaluation Date: _____

Approval of Compatibility Determinations

This approval is for all compatibility determinations considered within the Comprehensive Conservation Plan for Noxubee National Wildlife Refuge. If one of the descriptive uses is considered for compatibility ouside of the comprehensive conservation plan, the approval signature becomes part of that determination.

Refuge Manager: _____ _____
Signature Date

Regional Compatibility Coordinator: _____ _____
Signature Date

Refuge Supervisor: _____ _____
Signature Date

Regional Chief National Wildlife Refuge System _____ _____
Signature Date

Appendix G. Land Acquisition

The Service acquires lands and interests in lands, such as easements and management rights, through leases or cooperative agreements consistent with legislation or other Congressional guidelines and Executive Orders, for the conservation of fish and wildlife and to provide wildlife-oriented public use for educational and recreational purposes.

These lands include national wildlife refuges, national fish hatcheries, research facilities, and other areas. The Service's policy is to acquire land from willing sellers, and only when other protective means, such as local zoning restrictions or regulations, are not appropriate, available, or effective. When land is needed to achieve fish and wildlife conservation objectives, the Service seeks to acquire the minimum interest necessary to reach those objectives. If fee title is required, the Service gives full consideration to extended use reservations, exchanges, or other alternatives that will lessen the impact on the owner and the community. Donations of desired lands or interests are encouraged.

The Service, like all federal agencies, has the power of eminent domain, which allows the use of condemnation to acquire lands and interests in lands for the public good. This power, however, requires Congressional approval and is seldom used. The Service usually acquires lands from willing sellers. In all fee title acquisition cases, the Service is required by law to offer 100 percent of the property's appraised market value, as set out in an approved appraisal that meets professional standards and federal requirements.

Planning for the acquisition of land, water, or other interests is initiated with the identification of a need to meet resource objectives that require a real property base. This draft comprehensive conservation plan proposes to protect additional habitat of up to 5,200 acres outside the refuge's current acquisition boundary. The acquisition of lands adjacent to Service-owned lands within the existing acquisition boundary and lands within the proposed northern expansion area would be given the highest priority.

The recommendations in this draft plan on the expansion of the refuge boundary define important and sensitive areas that could be protected and managed as part of the refuge system. During the review of the draft plan, the public will have an opportunity to respond by attending open houses, or by directing comments to the refuge manager before the final plan is approved.

Once the expanded acquisition boundary is approved and funds are available, the Service proceeds to contact all landowners within the boundary to determine if they are interested in selling their land. If the landowner expresses an interest in selling to the Service, a professional real estate appraiser will conduct an appraisal to determine the fair market value of the property. Once the value is determined, a meeting is held with the landowner and the Service presents its offer. If the landowner agrees with the offer, the purchase agreement is signed and the process of acquiring the land is set in motion.

Generally, the Service seeks to acquire the minimum interest necessary in the land to provide the level of protection needed to achieve management goals and needs.

The acquisition methods that could be used by the Service under the proposed action are described as follows:

Leases and Cooperative Agreements

Potentially, the Service can protect and manage habitat through leases and cooperative agreements. Management control on privately owned lands could be obtained by entering into long-term renewable

leases or cooperative agreements with the landowners. Short-term leases can be used to protect or manage habitat until more secure land protection can be negotiated.

Conservation Easements

Conservation easements give the Service the opportunity to manage lands for their fish and wildlife habitat values. Such management precludes all other uses that are incompatible with the Service's management objectives. Only land uses that would have minimal or no conflicts with the management objectives are retained by the landowner. In effect, the landowner transfers certain development rights to the Service for management purposes as specified in the easement.

Easements would likely be useful when: (1) most, but not all, of a private landowner's uses are compatible with the Service's management objectives, and (2) the current owner desires to retain ownership of the land and continue compatible uses under the terms set by the Service in the easement.

Land uses that are normally restricted under the terms of a conservation easement include:

- Development rights (agricultural, residential, etc.);
- Alteration of the area's natural topography;
- Uses adversely affecting the area's floral and faunal communities;
- Private hunting and fishing leases;
- Excessive public access and use; and
- Alteration of the natural water regime.

Fee Title Acquisition

A fee title interest is normally acquired when (1) the area's fish and wildlife resources require permanent protection not otherwise assured; (2) land is needed for visitor use development; (3) a pending land use could adversely impact the area's resources; or (4) it is the most practical and economical way to assemble small tracts into a manageable unit.

Fee title acquisition conveys all ownership rights to the federal government and provides the best assurance of permanent resource protection. A fee title interest may be acquired by donation, exchange, transfer, or purchase.

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.

Lands acquired by the Service would be removed from the tax rolls. To offset the fiscal impact associated with removal of these lands from the public tax rolls, the Refuge Revenue Sharing Act of 1935, as amended in 1978, provides for payments in lieu of taxes. Revenue sharing payments for the parish would compare favorably with current tax rates. If fully funded, the revenue sharing rate is 1 percent of the fair market value of a property. Payment for acquired land is computed on whichever of the following formulas is greatest: (1) three-fourths of 1% of the fair market value of the lands acquired in fee title; (2) 25% of the net refuge receipts collected; or (3) 75 cents per acre of the lands acquired in fee title within the parish.

Lands subject to refuge revenue sharing payments are reappraised every 5 years. The appraisals set the fair market value of the land, based on the highest and best use. The appraised market value of the fee title lands within the refuge, and thus, the revenue sharing payments, would change over time in relation to the changing value of non-refuge lands.

The Service's proposed action (Alternative 2) would result in the acquisition of up to 5,200 acres of wildlife habitat as an expansion of the refuge, through the timber-for-land exchange program from willing landowners. The Service believes these are the minimum interests necessary to preserve and protect the fish and wildlife resources in the proposed area.

The private property has been prioritized for acquisition using the following criteria:

- Biological significance;
- Existing and potential threats;
- Significance of the area to refuge management and administration; and
- Existing commitments to purchase or protect land.

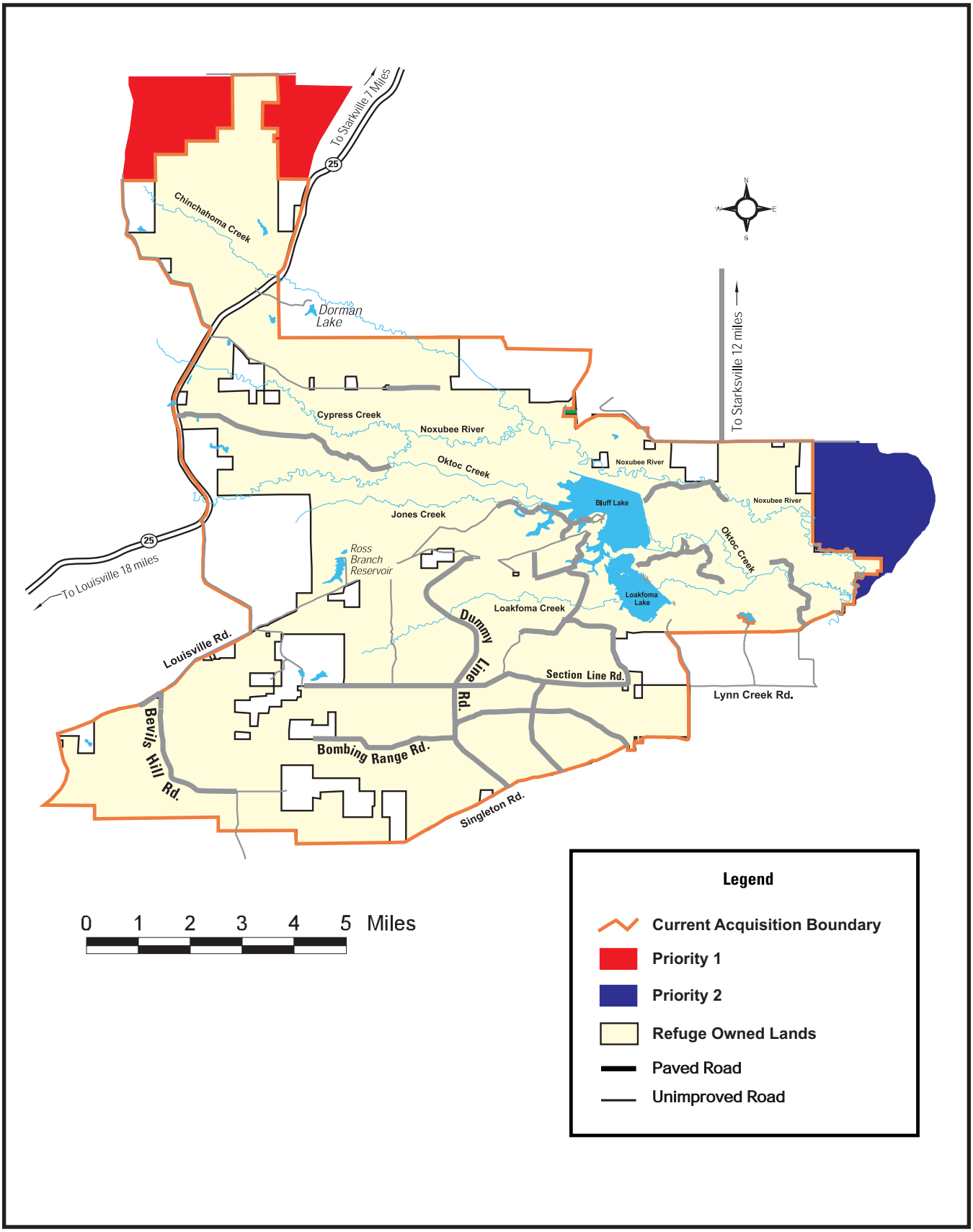
Two categories of land acquisition have been established, with the highest priority being the Priority I lands. A description of the lands within each of the two priority groups is given below. Figure 20 summarizes the Service's land protection priorities and proposed methods of acquisition. Figure 21 shows the locations of the project areas and their respective priority groups.

Priority Group I - Lands within this priority group would provide the opportunity to restore and protect pine habitats for the federally endangered red-cockaded woodpecker.
Priority Group II - Lands within this priority group are under the threat of development and refuge ownership would protect a section of the Noxubee River.

Figure 20. Protection priorities for the proposed expansion at Noxubee National Wildlife Refuge and recommended methods of acquisition.

Priority Group	No. of Landowners	Approx. Acreage	Type of Acquisition (minimum interest)
I	12	2,600	Lease, conservation easement, cooperative agreement, or fee title
II	18	2,500	Fee title, lease, conservation easement, or cooperative agreement

Figure 21. Land Acquisition Priorities for the Proposed Expansion at Noxubee National Wildlife Refuge.



Appendix H.

Comments and Service Responses to the Draft Comprehensive Conservation Plan

A part of the planning process was to solicit comments on a fully developed draft comprehensive conservation plan and environmental assessment. The document was made available for public comment for a 60-day period and an open house was held on June 26, 2003, 7- 9 p.m., at the Noxubee Conservation Center for the purpose of receiving comments. Media releases announced the event and invited anyone so desiring to submit written comments on the draft document to the Service. A total of 34 individuals attended the open house session and left numerous written comments. An additional 13 comments were received, including 10 by mail, 2 by telephone, and 1 by electronic mail. Each comment received, either in full text or summarized, is included in this appendix.

The following is a summary discussion of those comments, including the Service's response to each, grouped under the primary categories of Habitats, Fish and Wildlife Populations, Land Protection and Conservation, Education and Visitor Services, and Refuge Administration.

Habitats

Management of Pine and Pine/Hardwood Forests. A variety of comments was received regarding management of the refuge's pine and pine/hardwood forests. These two forest types constitute about 55 percent of the refuge's total acreage, and provide key habitat for a variety of wildlife, most notably the red-cockaded woodpecker. Some of the comments included a desire to make sure that old pines are retained for the red-cockaded woodpecker, a desire to see even-aged management of pine stands continued, a desire for pine/hardwood forest types to be retained and not converted to pure pine, and there was a concern that using "operator-select" harvesting may degrade forests. Most of these comments came from individuals who were very familiar with refuge forest management programs, and two of the commenters were professional foresters.

Service's Response. The refuge's current Forest Management Plan was written in 1995, and with a central theme of providing adequate and long-term habitat for red-cockaded woodpeckers. The plan allows for regenerating approximately 1 percent of the pine and pine/hardwood areas each year, through either natural events such as storms or insect outbreaks, or through seed-tree regeneration cuts. Seed-tree cuts are a proven even-aged management technique that not only ensures adequate natural regeneration, but also provides some habitat diversity by way of the standing seed-trees.

Because these seed-tree cuts are always done in stands which are 50-60 years old, they remove acreage from an age class which is abnormally abundant on the refuge, and place it in younger-aged classes which are abnormally scarce. This approach is gradually pushing the refuge's pine forests towards a more even distribution of age classes, and doing so without harvesting any stands older than 60 years. This approach was designed to ensure both short- and long-term habitat for red-cockaded woodpeckers and related species.

The Forest Management Plan also explains that the pine/hardwood forest type is an important habitat and will be retained at current levels. This is accomplished primarily by planning seed-tree cuts so they include little or no pine/hardwood habitat. Furthermore, whenever pine/hardwood areas must be included

in a seed-tree cut, effort is made to ensure regeneration of the hardwood component as well as the pine component. Finally, another prime factor in maintaining pine/hardwood habitat is the exclusion of fire from such areas. The refuge's current fire management program actively works to keep fire out of these areas.

"Operator-select" timber harvesting is a technique occasionally used to thin overly dense pine stands. It involves a written contract developed between the refuge and a timber purchaser allowing the purchaser to harvest an established volume of timber from a specified stand. While the actual trees to be harvested are not physically marked, the contract contains rigorous language about which trees may be harvested, including specifications for species, diameter, relative health, spacing, etc. During the harvesting operation, refuge foresters inspect the harvest to ensure loggers are conforming to the contract specifications. Follow-up surveys are also done to ensure the appropriate trees are left on site. The refuge has used "operator-select" harvesting for several years, primarily in early "post" thinnings involving trees about 6-9 inches in diameter. In recent years a few "operator-select" sawtimber thinnings have been done as staff were unavailable to mark the trees to be harvested. Overall, the technique has saved hundreds of staff hours that would have otherwise been spent marking harvest trees, and so far there has been no apparent decline in tree quality. Because the technique appears to work well, its use will continue in these limited circumstances.

Management of Hardwood Forests. Two comments were received about hardwood management on the refuge. Hardwood forests (primarily bottomland hardwoods, plus a much smaller component of upland hardwoods) total about 15,000 acres on the refuge. They provide important habitat to a variety of wildlife including neotropical migratory birds, waterfowl, deer, turkey, and others. One comment expressed a desire to see more management of hardwood forests, especially in the sense of not allowing hardwood forests to become old and die. The second comment was a desire to see even-aged management of hardwoods.

Service's Response. In the early 1990s, the refuge stopped actively harvesting hardwood timber in even-aged blocks, as concern built over potential impacts to neotropical migratory birds. Since then, hardwood management has consisted largely of removing sweetgum to favor more desirable species such as oak, beech, and blackgum, along with occasional small patch clearcuts, most often associated with storm damage. The relative high amount of storm damage in recent years has regenerated a sufficient amount of hardwood acreage such that additional regeneration was unnecessary.

In recent years several studies have demonstrated that selective thinning and small regeneration cuts can improve habitat quality for neotropical migratory birds in hardwood forests, most likely because the effects mimic natural cycles of old-growth forests. Despite these studies, refuge management has refrained from initiating such practices on a large scale until the body of evidence promoting these practices is more established. In the meantime, management will continue on its present course.

Improved Hydrologic Monitoring. One comment received requested installation of a water gauge to monitor long-term changes in hydrology in the Noxubee River watershed. Land-use changes are occurring in the Noxubee watershed as urban development continues, additional highways are built, and shifts occur in farming and forestry practices. These land-use changes affect local hydrology, and ultimately affect the overall hydrology of the Noxubee River, Oktoc Creek, and other refuge waters. Such changes in frequency, duration, and amplitude of flooding can greatly impact bottomland hardwood forests and other floodplain habitats. Currently, the nearest water gauge monitoring these changes is located on the Noxubee River near Macon.

Service Response: To reflect this need to improve monitoring of long-term hydrology changes, a strategy was added (A.3.7) to Goal A stating "Work with U.S. Geological Survey to install a water gauge on the Noxubee River."

Fish and Wildlife Populations

Increased Management for Bobwhite Quail. The most popular overall comment received (total of 8) involved concern for declining populations of bobwhite quail and a desire for increasing management of this species. A gradual decline in bobwhite quail populations is well documented in most of the Southeast. This decline is mostly attributed to habitat changes, as both farming and forestry practices have become more intensive, often eliminating old fields, overgrown fence rows, and similar brushy habitats needed by quail. At the same time, several other wildlife species such as loggerhead shrikes, indigo buntings, and cottontail rabbits, which also depend on early successional habitats, have experienced declines as well.

Service Response: While quail populations on lands adjacent to the refuge have decreased for the reasons above, the population on the refuge has faired better primarily due to the refuge's active burning program. To reflect this concern about quail populations, an additional strategy (B.2.3) was added under Goal B stating: "Identify and implement additional management activities to benefit bobwhite quail and other early successional wildlife species." As the refuge's current forest management program is already very conducive to quail, the most likely benefits can be gained by improving management of the refuge's field and grassland habitats.

Land Protection and Conservation

Expanded Acquisition Boundary. The proposal to expand the refuge's acquisition boundary was the most popular topic at the open house meeting, primarily because some members of the public perceived an expanded acquisition boundary as a precursor to eminent domain actions. Surprisingly, very few written comments were received on the subject, perhaps because a lengthy discussion on the topic occurred at the open house. In that discussion, Service staff explained that a review of refuge and Service history demonstrates that such heavy-handed methods of land acquisition have never been used at Noxubee refuge, and only rarely used elsewhere. Furthermore, current federal law requires Congressional approval for the use of eminent domain authority, thus its use amongst all federal agencies has become extremely rare. The intention of the Service's current land acquisition program is to negotiate only with willing sellers, and always at fair market value. A lengthy appraisal and review process ensures these intentions are met.

Ultimately, only two direct comments were received on the boundary expansion. One came from a landowner whose property was in the expansion area, stated he was not in favor of the expansion. This commenter cited concerns that land in private ownership is more likely to move towards its "highest and best use as dictated by local market forces," while publicly owned land will not. He also questioned the actual value of habitats available in the expansion area. The other commenter indicated a desire to see the boundary expanded even further, in particular, that it should include a state-owned section 16 property which harbors red-cockaded woodpeckers.

Service Response. The mission of the National Wildlife Refuge System is to conserve wildlife species and their habitats for the benefit of present and future generations of Americans. Past history, both recent and long term, has demonstrated that refuge resources are threatened by development and land-use changes occurring outside the refuge boundary. The most valuable tool the refuge has to mitigate these outside forces is to maintain an active acquisition program. The proposed expansion areas have not only experienced increases in urban development and tract subdivision, they also contain several tracts which have recently been offered for sale to the refuge. Unfortunately, the former acquisition boundary precluded the refuge from purchasing them. Refuge plans are to finalize the expanded acquisition boundary as a step towards protecting refuge resources and the public use opportunities they support.

Education and Visitor Services

Recognize Butterfly Fauna as Watchable Wildlife. One comment noted that the Xerces Fourth of July Butterfly Count had been held on the refuge annually since 1987, almost as long as the well-known Audubon Christmas Bird Count. The commenter asked that butterflies be considered under the objective for Wildlife Observation and Photography. Also, the commenter asked that butterflies be considered in the management of roadsides, fields, and prairies.

Service Response. The Xerces Butterfly Counts mentioned above demonstrated the high diversity of butterflies and moths present on the refuge, primarily due to the variety of available habitats. The 2000 year count yielded a total of 62 species, which was the highest of any count in the eastern United States. Similarly high numbers have been counted each year. To further recognize this high biological diversity and the attraction it holds for refuge visitors, a new strategy was added (D.3.3) to continue conducting these Xerces Butterfly Counts.

Open Additional Roads to the Public. Several comments were received at the open house requesting that additional refuge roads be opened to the public. Commenters often cited the fact that several of the closed roads were open 10 to 20 years ago, and some closures, such as Douglas Bluff Road, have occurred very recently. The reason most often cited for requesting the roads be opened was for the general pleasure of driving through different parts of the refuge, presumably for the scenic beauty and opportunity to see wildlife. The second most popular reason was to improve access to hunting.

Service Response. Over the past 30 years, additional roads have been closed for a variety of reasons. Many closures have resulted from administrative activities with which public entry is not compatible. Examples include the Dynamite Shed Road closed due to the storage of explosives and other refuge equipment; Goose Pen Road closed because of duck banding activity; and Douglas Bluff Road closed to provide a safe area (i.e., free of traffic and hunting) for children's environmental education programs. The Dickerson Arm Road was closed 10 years ago to prevent disturbance to the thousands of waterfowl utilizing Greentree Reservoirs 3 and 4, and also to decrease disturbance to deer and other wildlife which visitors view in the Goose Overlook field.

Despite these closures, the vast majority of refuge roads (more than 80 miles) remain open to public vehicle travel, and most of the closed roads remain open to foot, bicycle, and horseback travel. Public opinion on hunter access remains split, as refuge staff continually receive requests from hunters asking that individual roads be opened or closed. Obviously, there must be a balance between open and closed roads, and currently that balance seems to be met.

Cultural Resources

Expand Partnership with Mississippi State University's Department of Anthropology. Two faculty members from Mississippi State University's Department of Anthropology suggested an expansion of the existing partnership between the refuge and their department. A basic partnership has existed since 2002, when a Memorandum of Understanding was developed to allow an archaeology student intern to work on the refuge.

Service Response. Most archaeological investigations on the refuge have ben initiated by construction or seismic survey projects which are required to comply with cultural resource protection laws. Each of these investigations has indicated a wealth of cultural resources present on the refuge. Further investigation and documentation of these resources would not only allow for better planning of future construction and seismic projects, they would also increase the overall knowledge of human history in east Mississippi. To this end, a strategy (E.4.5) was added to expand the existing partnership with Mississippi State University's Department of Anthropology to include more extensive surveys and research, and potentially the sponsorship of a graduate intern on the refuge.

Refuge Administration

Additional Law Enforcement Staff. Two comments were received requesting additional law enforcement staffing. One comment came from an adjacent landowner concerned about refuge visitors trespassing onto his land. The other comment came from a regular refuge visitor.

Service Response. On a nationwide basis, refuge law enforcement programs are moving towards less reliance on collateral officers, and more reliance on full-time officers. Currently, the refuge has one full-time officer and two collaterals. Future policies may call for an end to collateral officers, as emphasis is placed on improving the readiness and professionalism of law enforcement officers throughout the refuge system. Noxubee refuge has an existing RONS project (#03000) which calls for an additional full-time law enforcement officer to be added to the staff.

United States Department of Agriculture

NRCS
Natural Resources Conservation Service
704 Taylor Street
Starkville, MS 39759

June 12, 2003

Noxubee National Wildlife Refuge
Attention: Larry Williams
224 Office Road
Brooksville, MS 39739

Dear Mr. Williams,

Thank you for the opportunity to comment on your Draft Comprehensive Conservation Plan and Environmental Assessment being developed for the Noxubee Refuge. I strongly support the National Wildlife Refuge system and commend the Fish and Wildlife Service for the outstanding job you are doing to balance natural resource management objectives with public use and enjoyment of these unique lands.

I have read through your Draft Plan and again commend the Noxubee Refuge Staff for all the time and effort that has gone into developing an impressive document. It is my opinion that your proposed Alternative 2 for future management represents a plan that will allow for achieving resource management goals and providing for broad public use. I am happy to see the Service is supporting this alternative as its choice for future action.

There is one major item I would like to recommend for consideration and inclusion in your plan. I offer this suggestion from my knowledge of interest and concerns among local landowners, sportsmen, and wildlife groups, and from a personal standpoint as both a professional natural resource manager and a sportsman and Refuge user.

Include Quail as a major emphasis species for management.

In reviewing your plan, I did not see specific emphasis given to quail as a species targeted for management. Here are some key reasons I feel quail should have major emphasis status in your plan:

(1) In the South, quail has traditionally been regarded a premier wild game species and has significant importance both to southern culture and as an indicator species to the overall health of wildlife habitat.
(2) Managing for quail and managing for Red Cockaded Woodpecker, one of your high priority endangered species, goes hand in hand, with both species benefiting from grassy, open understory in upland pine stands.
(3) The Noxubee Refuge lands lend themselves ideally to intensive development for quail habitat with a high percentage of upland pine stands, large acreage of bottomland hardwoods, and interspersed open field areas.

NRCS
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704 Taylor Street
Starkville, MS 39759

(4) On-going research at the Mississippi State University's College of Forest Resources and Wildlife Research Center is available to assist with this specific objective. Their research shows habitat for quail in upland pine stands can be improved tremendously by adding chemical hardwood brush control as a companion practice to Prescribed Burning (a practice already being done on the Refuge). This research has demonstrated the highly effective and safe use of Imazapyr (Arsenal AC) in accomplishing "quality vegetative management". Use of this practice, along with woodland disking and fertilization can create high quality habitat that will benefit practically all upland game and non-game species on the Refuge.
(5) Research at Mississippi State University has documented the current rapid decline in quail populations across the South and provides strong evidence and support for emphasizing quail habitat management.
(6) The Noxubee Refuge can play an important role in promoting the adoption of quality habitat management among private landowners by providing a working demonstration for these management techniques.
(7) There is a high level of local support among sportsmen and organized groups for a quail management initiative. An active local chapter of Quail Unlimited regularly supports habitat development activities on the Refuge and throughout Oktibbeha County.
(8) And finally, the Noxubee Refuge is a part of the South. It's lands were at one time home to numerous farmsteads where interspersed land uses of crop production, pastures, and woodlots provided the ideal habitat where quail and other southern wildlife species flourished. It seems only natural that specific management for quail should be a key emphasis item in your plan.

I also want to voice my support for continued public hunting on the Refuge. In regard to quail hunting, I support a more restrictive hunting period, possibly January through February, with limited permitted hunting. This would provide better opportunity for quality hunts among all participants. I also support continuation of the present waterfowl hunting format and recommend hunting be allowed on GTR #2 to provide additional hunting opportunities.

The emphasis being placed on Environmental Education at the Refuge is outstanding and should continue. I also feel the recent addition of structures and programs for non-consumptive users is great and efforts should continue in this area. The Noxubee Refuge is a local treasure and its wealth of natural resources should be shared by everyone.

NRCS
Natural Resources Conservation Service
704 Taylor Street
Starkville, MS 39759

Thanks again for allowing me to offer comments for consideration in developing your final Comprehensive Conservation plan.

Sincerely,

Tony Thompson
District Conservationist
Starkville Field Office

909 Evergreen Street
Starkville, MS 39759
July 21, 2003

Mr. Jim Tisdale, Manager
Noxubee National Wildlife Refuge
224 Office Road
Brooksville, MS 39739

Dear Jim:

The following are my comments on the Draft Comprehensive Conservation Plan and Environmental Assessment for the Noxubee National Wildlife Refuge. These comments follow pages in the book and are not in order of importance.

Page 13, last paragraph: Please include a list of bird species in Appendix D.

Page 14: Bobwhite quail are not "fairly abundant" on the refuge. The statement should be simply "are" on the refuge. On counts, we have a very difficult time finding quail; it is much easier to find turkey!

Page 14: The rookery contains breeding white ibis. They should be listed as being in the cattle egret rookery.

Page 15: Peregrine falcons are NOT winter residents of the refuge. They are seen in migration (mostly fall).

Page 25: While cogon grass is listed in other places, I believe it also should be listed on page 25.

Page 32: What does the statement that "management of RCW comes at the expense of other species" mean? I can think only that it might impact flying squirrels; management may impact timber harvest (although I don't think it does). So what does this mean? RCW management benefits quail, Bachman sparrows (if the burn isn't during their nesting season), turkey, deer. What harm does RCW management do? I truly question this and request that it be removed. RCW management may impact refuge personnel and staffing (i.e. economics). Yet, isn't that your mandate--to manage for endangered species. I see RCW management as your number one priority on this refuge. I believe that RCW management deserves and should be getting attention from the refuge manager. Then, this attention will translate down to all personnel that RCWs are an important resource at Noxubee.

Page 33: I believe that points one and two of Conservation Priorities should be reversed. While RCWs are mentioned in the paragraph, endangered species should come before migratory birds in

the bullets. I believe shore bird habitat management should also be added--unless they are lumped under "migratory" birds. Noxubee's moist soil areas, rivers, and lakes could contribute significant habitat if managed correctly.

Page 41: Under Strategies: Regeneration of 1 percent of pine does not allow for 120 year old pine trees. Somehow some old pine trees need to remain. Where is this addressed? When can events like windstorms and tornadoes figure into the 1 percent so that older trees can remain? The 2002 tornado that crossed 8 miles of the refuge ought to be figured into the "thinning" formula?

Page 45: I was glad to see Pete's Slough and Douglas Bluff mentioned as natural areas. These should be designated as such and protected for their unique species. Please make adding these a priority.

Page 46: If goal B is to be reached, a second biologist must be added to the staff. There is simply too much for one biologist to handle now; there is no way that one individual can possibly do all the work that is required now.

Page 47: Bobwhite quail should be mentioned on this page.

Page 49 and 50: The proposed acquisition boundary should include the RCW cluster on the Noxubee county 16 Section land joining the south side of the refuge. Some land swap should be initiated to include those acres within the protection and ownership of the refuge. The Mississippi Secretary of State has been successful in working with land swaps for conservation. He should be contacted and encouraged to help the refuge acquire the RCW cluster. In fact, acquiring all that 16-section land south of the refuge would visually enhance the southern entrance to the refuge and remove a "pocket" that restricts straight boundaries. Surely there is another section in Noxubee county that the school would rather have. Perhaps some timber company would want to have a tax write-off or contribution for publicity. These areas need to be explored. Perhaps Friends of Noxubee or Audubon could help with this initiative. Regardless, that cluster/area needs to be in the "acquisition" area.

Page 50: The expansion area is north of Highway 25 rather than Highway 27 (4th line down).

Page 56: The Xerces Fourth of July Butterfly Count has been held at the refuge every year since 1987 and is providing valuable scientific information. Butterflies should be included under Wildlife observation and Photography. And, the butterfly count is just as important as the Christmas Bird Count. More importantly, the management of roadsides, fields, and the prairie need to be conducted to enhance butterfly survival. That's a management decision that needs to be addressed, too. A butterfly list would also be useful in Appendix D.

Page 72: I see wildlife population monitoring will be emphasized (i.e. RCWs). Yet, I learned this year that RCWs will not be color banded anymore. I cannot begin to tell you the information that will be lost because individual birds will not be identifiable. Counting "how many birds" you see

does not give information on survivability, sex, movements of bird, etc. All of that is critical information in monitoring RCWs. I cannot comprehend how banding 200 wood ducks is more important than banding RCWs. I believe that wood duck effort can not and could not be justified if you fail to band RCWs nestlings.

I recognize all too well the alternatives devised to justify the plan. Alternative 3 favors more logging and less RCW acreage. I cannot favor that. Alternative 1 favors "things like they are". I cannot favor that. What other choice is there? One has to support Alternative 2.

Page 167: I would like to see the 16 Section land listed as a Priority acquisition boundary.

Thank you for allowing comments on the plan. I appreciate the hard work and long hours that it took to prepare the document.

I look forward to continuing to volunteer at the refuge and particularly look forward to a time when RCW numbers are again on the up-swing.

Sincerely,

Margaret S. Copeland

Margaret S. Copeland

Mississippi State UNIVERSITY
Department of Sociology, Anthropology, and Social Work

6/18/03

Drs. Evan Peacock and Janet Rafferty
Department of Sociology, Anthropology, and Social Work
Mississippi State University
P.O. Box C
Mississippi State, MS 39762

Larry Williams
U.S. Fish and Wildlife Service
224 Office Road
Brooksville, MS 39379

Dear Mr. Williams,

Thank you for the chance to comment on the Draft Comprehensive Conservation Plan and Environmental Assessment for the Noxubee Wildlife Refuge. We would like to congratulate the planning team for assembling a very fine piece of work. A lot of effort and dedication are apparent in the draft plan, and we hope that our comments may be of some use during revision for the final version. We will limit our comments and suggestions to our particular area of expertise, cultural resources.

A few minor corrections should be made:

p. 31, first paragraph – "The earliest known site is located on the shore of Bluff Lake and dates back to the Gulf Formation through Miller periods (1000 B.C. – 1100 A.D.)...Although the Choctaw Indians inhabited this part of Mississippi at the time of first European contact, this site actually predates Choctaw culture. Numerous other Native American sites occur throughout the refuge, many of which are from the Choctaw culture."

There are several incorrect statements or errors in this paragraph:

1) The earliest known site on the refuge is 22NO557, recorded by Rafferty in her 1979 survey report. Site 22NO557, located near Oktoc Creek, produced artifacts dating to the Early Archaic period, ca. 9000 – 7000 B.C.

2) "Gulf Formation" should be "Gulf Formational".

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3) The Miller periods ended at about A.D. 1000, not 1100.

4) The Choctaw Indians did not exist as a tribe at the time of first European contact. There is excellent evidence to show that the Choctaw formed as a result of that contact, as remnants of other tribes decimated by introduced diseases came together to form a new political and ethnic body. This is clearly explained and substantiated in Dr. Patricia Galloway's book, *Choctaw Genesis 1500-1700* (University of Nebraska Press, 1995).

5) No sites have been found on the refuge that can be assigned to the "Choctaw culture." Such equations of artifacts and ethnic groups are always shaky, as artifact styles can easily transgress recognized ethnic boundaries. In this particular case, no site has been recorded on the refuge that has produced the kinds of artifacts, such as combed pottery, trade beads, or gunflints that might arguably be Choctaw. In fact, to the best of our knowledge no Historic period aboriginal artifacts of any kind have yet been reported from the refuge. The Choctaw Council House is on the refuge, but its exact location has not been established through archaeological investigation.

On p.56, 5th paragraph – "National Archaeology Week" should be "Mississippi Archaeology Month".

We have a few more general comments. **We strongly recommend the adoption of Alternative 2 or Alternative 3 for the refuge.** Alternative 1, the No Action alternative, is simply insufficient where compliance with national historic preservation legislation is concerned. You also are absolutely correct in stressing the positive impact of an archaeologist on the objectives listed under Protection, and Management and Education. Your Strategy E.3.1, to hire an archaeologist, is well reasoned and, in our opinion, addresses an absolutely critical need on several fronts.

We also would like to emphasize that we are ready and willing to work as partners with you as you move forward with improving your cultural resources program. You have mentioned a general partnership with Mississippi State University in various places. We would be pleased to have you specifically include us as potential partners, under "Cultural Resource Partnerships," for example (p. 112, Objective E.4). We are very interested in having a graduate intern placed under the supervision of a refuge archaeologist on a regular basis, and there are many other ways in which we can work cooperatively to help insure the success of your cultural resources program while augmenting the educational experience of our students in the Anthropology program at MSU. We could, for example, help to construct databases, compile bibliographies of pertinent literature and reference material, conduct Phase II testing of sites considered to be potentially eligible for inclusion on the National Register of Historic Places, design interpretive displays, conduct surveys, wash and catalog artifacts, and so on. We also are developing a remote sensing program designed to provide rapid assessment of sites in terms of significance (e.g., by locating and mapping subsurface features using magnetometry, conductivity, and other imaging technology), a program that could be of great benefit to the refuge on a project-by-project basis. Such technology can be

used in other ways as well, such as detecting unmarked graves in cemeteries on the refuge. We are unable to commit to such activities in any long-term fashion in the absence of a local refuge archaeologist, as the logistics of supervision, task assignment, oversight, and evaluation are simply too complex to be carried out at long distance. The details of such cooperative ventures can be worked out once you have an archaeologist in place, but we hope that you will consider us your partner in such endeavors. You should feel free to make specific mention of the Anthropology program at MSU in this regard.

Thank you again for the chance to comment. We greatly appreciate the efforts that you have made where cultural resources are concerned, and we hope that you will continue to show leadership on this issue by adopting Alternative 2 or Alternative 3. Please feel free to contact either of us if we may be of further assistance in any way.

Sincerely,

Dr. Evan Peacock

Janet Rafferty

Dr. Janet Rafferty

July 17, 2003

Mr. Larry Williams, Asst. Mgr.
Noxubee Wildlife Refuge
224 Office Rd
Brooksville, Ms 39379

Dear Mr. Williams:

Since I was not able to attend the Public meeting on 26 June 2003, please accept the following as my comments concerning the Draft Comprehensive Conservation Plan I recently received. These are essentially the same as my comments to you by phone earlier with some additional thoughts included.

I. **Past and Present Use:** First, let me express my appreciation for the works you and your staff have done to improve facilities and programs at the Refuge in recent years. Certainly it is a valuable community asset that has provided much enjoyment to many people. The recent youth hunts and fishing rodeos you have sponsored are important to the future of our young people and their appreciation of the outdoors. However, when you recently drained and cleared-out Loakfoma Lake, you converted a pleasant, natural fishing lake into a barren, water-holding pond.

II. **Proposed Future Mission:** The draft plan seems to emphasize improved access to the Refuge facilities for handicapped people and the general public. This will result in diminished recreational opportunities for every one unless corresponding improvements are made. Although hunting and fishing are the first two of six priority activities identified (pg. 140), no mention is made of any intent to improve or expand these resources. Also no mention is made of the general waterfowl hunt the Refuge personnel have been promising for the past few years. The Plan states that this cannot take place until numbers exceed pre-1975 levels (pg. 154), but give no authority for this.

III. **Proposed Land Acquisition:** I am generally opposed to any additional conversion of land from private to public ownership. Land in private ownership will move toward its highest and best use as dictated by local market forces; while publicly owned land is locked into a non-economic use dictated by bureaucratic forces far removed from local influences. Since my home farm is located in the proposed acquisition area, I am certainly opposed to approval of these plans for expansion of Noxubee Refuge. The Draft Plan seeks to justify acquisition of the Northern area where my farm is located as being needed to expand the habitat of the Red Cockaded Woodpecker. This area is mostly open pasture - hay land or planted pine plantations, certainly not the mature old-growth pine needed. Anyway, I seriously question our tax money being used to

preserve a little bird few people have ever seen or ever will see, and which has no economic benefit to society.

IV. **Draft Plan Document:** A serious problem with the Plan concerns the identification of the land area affected. Most land management analyses identify the affected area by use of rectangular survey descriptions. Yet, nowhere in this draft is there any mention of section, range, township data that would give a unique description of the area. The Plan depends on map figures to identify and describe the Refuge as it presently exists and the proposed acquisitions. This would probably be adequate for the purposes of the document if the maps were accurate and complete. However, on map figures 4 and 6, Ennis Road is identified as Longview Road, and Longview Road is **not** identified at all. On map figure 8 which shows the proposed acquisition areas, neither Ennis Road nor Longview Road are identified. This is a serious omission since Ennis Road is the western boundary and Longview Road the northern boundary of the north acquisition areas. Similar errors may well occur in other areas of these map figures with which I am not as familiar.

V. **Summary:** Noxubee Wildlife Refuge is a valuable resource for this area. It offers many recreational and educational opportunities for residents and visitors, and the current staff seems committed to expanding these opportunities. I feel that any future changes should be designed to benefit the maximum number of people, primarily hunters and fishermen as indicated by current use numbers. I do not feel that the Draft Plan has made a sufficient case for further expansion of Noxubee Refuge by additional land acquisition. This is particularly true in light of the errors and omissions noted in map figures 4,6,and 8. I hope these were honest mistakes and not a deliberate attempt to confuse and mislead those landowners who would be affected by the proposed acquisition. Again, I oppose any further expansion of Noxubee Refuge and request that approval of land acquisition be denied.

Sincerely,

Mr. James H. Simpson

Quail Unlimited, Inc.

Oktibbeha County Chapter

First Place Winner

2002

National Habitat Award

(Div. 3)

P. O. Box 1143
Starkville, MS 39760

June 12,2003

Mr. Larry Williams
Assistant Manager
Noxubee National Wildlife Refuge
224 Office Road
Brooksvile MS 39739

Dear Larry,

I wish to comment on your Draft Conservation Plan and Environmental Assessment being developed for the Noxubee National Wildlife Refuge. As you know I am a friend of the Noxubee Refuge. For the last 10 years, we have had a Cooperative Agreement with you to enhance the habitat for quail and other related species on the Refuge. You have done this voluntarily and in good faith even though you were not obligated to do so by the previous management focus of the Refuge. It is my view that by our Chapter and the Refuge leadership jointly focusing on quail that great benefits have accrued. I believe there is a stable Quail population on the Refuge. This is truly remarkable in view of the decline in quail numbers across the Southeastern United States.

It is my view that the time is right to place major emphasis on management of quail on the Refuge. As you know, the 2002 Farm Bill has strong language in it in support of restoring wildlife habitat favorable for quail. (Senator Cochran had a major role in this being placed in the Farm Bill. He is a great Conservationist.) What is needed at this time to encourage private landowners to make use of the Farm Bill funds are

Quail Unlimited, Inc.

Oktibbeha County Chapter

First Place Winner

2002

National Habitat Award

(Div. 3)

valid demonstrations in varied wildlife habitats. The Refuge is clearly one place that this can be done.

The Oktibbeha County Chapter of Quail Unlimited is grateful for you previous support and we look forward to even greater things in the future.

Sincerely yours,

Ed

Ed Lloyd
Chapter Chairman

MISSISSIPPI
DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS

SAM POLLES, Ph.D.
Executive Director

June 23, 2003

Noxubee National Wildlife Refuge
Attn: Larry Williams
224 Office Rd.
Brooksville, MS 39739

Mr. Williams,

Thank you for the opportunity to review the Draft Comprehensive Conservation Plan and Environmental Assessment for Noxubee National Wildlife Refuge (NNWR). Section A of Chapter 1 discusses the relationship between the NNWR and our agency. From my perspective, our working relationship has been excellent over the years, and we appreciate the significant interagency cooperation which can be seen in planning efforts, annual hunt coordination, and off-refuge partnerships such as the work we have accomplished together at Trim Cane WMA.

Clearly, there is much to be proud of in reviewing the work that has been accomplished at NNWR. This draft plan does an excellent job of describing the refuge and the significant past accomplishments there, while clearly outlining a vision for future management direction including alternatives to the proposed approach. We found the draft to be well written and very informative.

Regarding hunting opportunities on NNWR, we were excited about the inclusion of waterfowl hunting during recent years, and were encouraged that the plan indicates there could be potential to expand these opportunities. Concerning the management direction of resident wildlife species, we would like to see the plan provide some insight into your vision for impacting northern bobwhite quail on NNWR. Many of your current and proposed management practices have the potential to benefit this important game species. Given the long-term decline of this bird, and the emphasis state and federal conservation groups have placed on bobwhite population recovery, we would like to see the species addressed more specifically in your plan.

The plan suggests that there will considerable opportunity for continued dialog and input into the planning process as you move forward. Let me suggest that Major Dave Godwin of our Wildlife Technical Staff serve as a liaison between NNWR and our agency during this process. Maj. Godwin works from our office at MSU, and has worked with your staff on other projects in the past. He can be contacted by phone at 662-325-5119.

1505 Eastover Drive • Jackson, Mississippi 39211-6374 • (601) 432-2400

Again, thank you for the opportunity to review this document and provide input. If I can provide additional assistance, feel free to contact me at 601-432-2000.

Sincerely,

Dr. Sam Polles
Executive Director, MDWFP

Jim Tisdale
06/04/03 11:08 AM

To: Larry Williams/R4/FWS/DOI@FWS
cc:
Subject: suggestion

----- Forwarded by Jim Tisdale/R4/FWS/DOI on 06/04/03 09:08 AM -----

Rick Kaminski <rkaminski@CFR.Ms State.Edu>
06/04/03 06:35 AM

To: "'jim_tisdale@fws.gov'" <jim_tisdale@fws.gov>
cc:
Subject: suggestion

Jim

I've been reading and enjoying the draft conservation plan for Noxubee NWR. I have a suggestion. I suggest a need exists to install an accurate water-level gauge (perhaps USGS quality) in the Noxubee River on the bridge along the main road entering the Refuge. As you know with the 'clearing of Starkville' and modification of watersheds over the past 20 years, the hydrology of the Noxubee Bottoms has changed markedly. Frequency, amplitude, and duration of flooding are greatly increased. The river gauge at Macon is too far away to give an accurate picture of depth, extent, and distribution of flooding on the Refuge. Thus, I think there's ample justification to have a river gauge installed on the Refuge.

As I continue reading the Plan, I'll provide my thoughts. Thank you for listening.

Rick

Richard M. Kaminski

Department of Wildlife and Fisheries

Box 9690

Mississippi State, MS 39762

rkaminski@cfr.msstate.edu

662.325.2623

U.S. Government
MEMORANDUM

Date: June 4, 2003

From: Supervisory Wildlife Biologist, Migratory Bird Office, FWS, Jackson, MS

Subject: Comments on the Noxubee NWR CCP and EA

To: Deputy Refuge Manager, Noxubee NWR, FWS, Brooksville, MS

I read the draft Comprehensive Conservation Plan for Noxubee NWR and found it to be an excellent document, including an incredible amount of valuable information relating to management of the refuge. The Plan clearly demonstrates the importance of the refuge to wildlife and to the community. You are to be commended.

The following comments are offered for your consideration:

Page 11, **Refuge History**, paragraph 1, last sentence. I do not understand what is meant by "... and eliminating land requested by the Soil Conservation Service."

Page 22, *Fields*, paragraph 2. It seems that paragraph 2, which discusses greentree reservoirs, should be moved to the next section, entitled *Waterfowl Impoundments*.

Page 28, Figure 7. I was curious how you project a nearly 2-fold increase in public use at Noxubee NWR during the 5-year period from 2010 to 2015? A similar percentage increase was projected to occur during a 10-year period from 2000 to 2010.

Page 41, *Objective A.2 Hardwood Forests*, paragraph 3, last word. "reproduction" should be "production."

Page 41, *Objective A.2 Hardwood Forests*. Your stated objective is to maintain species diversity and increase mast production and regeneration of mast producing species by following your current Forest Management Plan, which focuses on emphasizing older-age classes that support late successional habitat for migratory birds and resident wildlife. Your discussion is good. It addresses the various age classes that are required by the diversity of migratory birds using the refuge. I have attached a copy of "General Recommendations for Hardwood Forest Management to Improve Wildlife Habitat in the Lower Mississippi River Valley" (copy attached) for your consideration and application during your next review/update of the Forest Management Plan. Although Noxubee NWR is not located in the LMV, I think that you will find these guidelines applicable and suitable for managing hardwood forests to meet refuge objectives for migratory birds.

Page 53, *Objective D.1 Hunting*. Hunting will likely be challenged more and more on refuges. I would add a sentence referencing hunting as a priority activity on refuges according to the National Wildlife Refuge System Improvement Act of 1997.

Page 55, *Objective D.2 Fishing*. If you work with the Mississippi Department of Wildlife, Fisheries, and Parks in managing your fishery resources, I would add them as a partner in your discussion and strategies.

Page 57, *Objective D.4 Interpretation*. I suggest that you add a strategy to "continue the refuge newsletter." It is a very informative and educational way to reach a lot of refuge users.

Good job. Please call if you have any questions.

Attachment

NATIONAL RIFLE ASSOCIATION OF AMERICA
11250 Waples Mill Road
Fairfax, VA 22030

Education & Training Division
Hunter Services Department

Administration (703) 267-1500
Fax (703) 267-3999

May 21, 2003

Land Use Planning
Noxubee National Wildlife Refuge
224 Office Road
Brooksville, MS 39739

Planning Staff:

The National Rifle Association is an organization of some 4 million members. Over 2 million are hunters and practically all are outdoors persons. We care about and appreciate the natural resource values and outdoor recreation opportunities made available in the National Wildlife Refuge System.

I have reviewed the Draft Comprehensive Conservation Plan and Environmental Assessment prepared for the Noxubee National Wildlife Refuge. While it is difficult to develop specific comments without having spent some time on the ground, the following general comments are offered.

The "Vision" statement on page 39 is excellent. It provides the public with a clear, concise statement of of the management and development direction planned for the refuge.

We commend the determination of refuge staff to continue the use of prescribed burns and fire management to achieve resource management objectives and to reduce the threat of major wild fire impacts. Attention to the serious issue of exotic plants is most critical in ecosystems represented on the refuge. Finally, the commitment to hunting and fishing, as legitimate public uses of refuge resources is appreciated.

Thank you for the opportunity to participate in the land use planning process on the Noxubee.

Sincerely,

Billy R. Templeton
Wildlife Management Specialist

Established 1902

Mississippi Department of Archives and History

Historic Preservation Division
PO Box 571 • Jackson, MS 39205-0571 • 601 / 359-6940 • Fax 601 / 359-6955 • mdah.state.ms.us

June 9, 2003

Mr. Larry Williams
U. S. Fish and Wildlife Service
224 Office Road
Brooksville, Mississippi 39379

Dear Mr. Williams:

RE: Noxubee National Wildlife Refuge, Draft Comprehensive Conservation Plan and Environmental Assessment

We have reviewed the Draft Comprehensive Conservation Plan referenced above. We support the plan as it pertains to cultural resources. We especially support the establishment of a permanent archaeologist position at the Refuge to implement a comprehensive CRM program and the proposed comprehensive archaeological survey.

Thank you for providing the draft plan to us for review. If you have any questions or need additional information, please contact Cliff Jenkins at 601-359-6940.

Sincerely,

Thomas H. Waggener

Thomas H. Waggener
Review and Compliance Officer

MISSISSIPPI
DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS

SAM POLLES, Ph.D.
Executive Director

MEMO

TO: Larry Williams, USFWS, Noxubee Refuge
FROM: Dave Godwin, MDWFP
RE: Noxubee NWR Plan
DATE: 6/4/03

Larry,

Thanks for the opportunity to review the draft Comprehensive Conservation Plan and Environmental Assessment for the Noxubee National Wildlife Refuge (NWR). The plan is well written and provides an excellent vision for your agency's direction for management of this refuge.

One critical comment, I was surprised at the lack of information concerning management for northern bobwhites on Noxubee NWR. I understand that the service steers away from single-species management on the refuge system. However, given the regional concern raised by state and federal conservation interests regarding the 30-year decline in bobwhite populations, your staff's relationship with local quail interests (e.g.., local Quail Unlimited - QU - Chapter, etc.), and the support of past research efforts demonstrating a positive relationship between northern bobwhites on Noxubee NWR and management efforts to benefit Red-Cockaded Woodpeckers (RCW) on the refuge, I would have expected some language in the plan outlining your vision for future management efforts that would directly or indirectly impact this important wildlife resource.

Currently, your burning program, the RCW work, cooperative work with QU, and other factors are benefitting the bobwhite population on Noxubee NWR to various degrees. I believe additional opportunities exist to further enhance bobwhite habitat on Noxubee NWR, and would have liked to seen some text in the plan that addresses this species of concern directly.

Again, I thank you for the opportunity to comment on this plan, and applaud the efforts of the refuge staff in this planning effort and for encouraging this input into the process. If I can provide additional assistance, please contact me at anytime (662-325-5119).

P. O. Box 451 ● Jackson, Mississippi 39205-0451 ● (601) 362-9212