SECTION C. APPENDICES

Appendix I. Glossary

Adaptive Management — A process in which projects are implemented within a framework of scientifically driven experiments to test predictions and assumptions outlined within the Comprehensive Conservation Plan. 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. An alternative is a reasonable way to fix the identified problem or satisfy the stated need.

Approved Acquisition Boundary — A project boundary which the Director of the Fish and Wildlife Service approves upon completion of the detailed planning and environmental compliance process.

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.

Biological Integrity — The biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms, and communities.

Canopy — A layer of foliage, generally the upper-most layer, in a forest stand. The term 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 of 1969.

CFR — Code of Federal Regulations.

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 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–swales and open ponds–that hold water several months, if not all of the year. Large hollow trees are used as bear den sites.
Deciduous	Pertaining to perennial plants that are leafless for some time during the year.
Dominant Tree	Tree whose canopy is above height of main forest canopy. Crown receives full sunlight on at least three sides.
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 systemwide concepts to ensure that all plants and animals in ecosystems are maintained at viable levels in native habitats and that basic ecosystem processes are perpetuated indefinitely.
Emergent Tree	Tree whose height is well above main forest canopy height. It may be a relic from previous forest stand or a faster growing species of same age class.
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.

Even-Aged Forests — Forests that have two or fewer age classes of trees.

Environmental Health — The composition, structure, and functioning of soil, water, air, and other abiotic features comparable with historic conditions, including the natural abiotic processes that shape the environment.

Environmental Assessment — A concise document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action as well as 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 and invertebrate animals of an area.

Federal Trust Species — All species for which 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 reminder 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 states that an environmental impact statement, therefore, will not be prepared.

Floodplain Woods — Bottomland hardwood forests. Consists of hardwoods (old growth and mid-succession-age timber) cypress tupelo stands found on low ridges that drain slowly and are subject to flooding. Group includes overcup, willow, water oaks, sweetgum, and green ash. Old growth trees typically exceeding 120 years of age. Red oaks were removed in the 1940s. Mid-succession trees are logged timber that may need restoration to improve wildlife habitat.

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 statement of desired future conditions that conveys 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.
Habitat	The place where an organism lives. The existing environmental conditions required by an organism for survival and reproduction.
Herbaceous Wetland	Land annually or seasonally inundated with vegetation consisting primarily of grasses, sedges, rushes, and cattail.
Historic Conditions	The composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to substantial human-related changes to the landscape.
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.
Inholding	Privately owned land inside the boundary of a national wildlife refuge.
Issue	Any unsettled matter that requires a management decision.
Migratory	The seasonal movement from one area to another and back.
Moist-soil Management	The technique of using water management structures in seasonally flooded impoundments to stimulate the production of natural plant species on exposed mudflats by regulating the timing of water removal in the spring.
Monitoring	The process of collecting information to track changes of selected parameters over time.
National Environmental Policy	A Federal law that requires all agencies, including the
Act of 1969	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. The Refuge System includes 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 normally 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.
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.
Planning Area	A planning area may include lands outside existing 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.
Planning Team	A planning team prepares the Comprehensive Conservation Plan. Planning teams are interdisciplinary in membership and function. A team generally consists of the 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; it contributes to the Refuge System mission, addresses the significant issues, and is consistent with principles of sound fish and wildlife management.
Purpose of the Refuge	The purpose of the refuge is 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 and refuge unit.
Refuge Operating Needs System	This is a national database which contains the unfunded operational needs of each refuge. Projects included are those required to implement approved plans and meet goals, objectives, and legal mandates.
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.
Selection Harvesting	Form of uneven-age management where individual trees or groups of trees are removed during a harvesting operation.

Seral Forest	A forest in the mature stage of development, usually dominated by large, old trees.
Sink	A habitat in which local mortality exceeds local reproductive success for a given species.
Sink Population	A population in a low-quality habitat in which the birth rate is generally less than the death rate and population density is maintained by immigrants from source populations.
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.
SPOA	Source Population Objective Area.
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.
Timber Stand Improvement	Refers to intermediate stand treatment in even-age stands to improve stand characteristics.
Trust Species	Species for which the Fish and Wildlife Service has primary responsibility, including most federally listed threatened and endangered species, anadromous fish once they enter the inland coastal waterways, and migratory birds.
Understory	Any vegetation with canopy below or closer to the ground than canopies of other plants.
Uneven-Aged Forest	Forests that has three or more age classes of trees.
Wildlife Corridor	A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic, including frequent foraging movement, seasonal migration, and the once-in-a-lifetime dispersal of juvenile animals. These are transition habitats and need not contain all the habitat elements required by migrants for long-term survival or reproduction.

Wildlife-Dependent Recreation A use of a refuge involving hunting, fishing, wildlife observation or photography, or environmental education or interpretation. The National Wildlife Refuge System Improvement Act of 1997 specifies that these are the six priority general public uses of the Refuge System.

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Appendix III. 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.

Lake Ophelia 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), Biological Integrity, Diversity, and Environmental Health Policy, and other relevant legislation, Executive Orders, regulations, and policies.

Key Legislation/Policies for Plan Implementation
The Lake Ophelia 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 approval 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.

The legal mandates supporting the National Wildlife Refuge System are as follows:

Antiquities Act (1906): Authorizes the scientific investigation of antiquities on Federal land and provides penalties for unauthorized removal of objects taken or collected without a permit.

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.

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.

Refuge Recreation Act (1962): Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purposes and when sufficient funds are available to manage the 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.

Architectural Barriers Act (1968): Requires federally owned, leased, or funded buildings and facilities to be accessible to persons with disabilities.

National Environmental Policy Act (1969): Requires the disclosure of the environmental impacts of any major Federal action significantly affecting the quality of the human environment.

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.

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

Executive Order 11988 (1977): Requires every Federal agency to provide leadership and take action to reduce the risk of flood loss and minimize the impact of floods on human safety, and to preserve the natural and beneficial values served by the floodplain.

Executive Order 11990: Directs Federal agencies to (1) minimize destruction, loss, or degradation of wetlands and (2) preserve and enhance the natural and beneficial values of wetlands when a practical alternative exists.

Emergency Wetlands Resources Act (1986): The purpose of the act is “To promote the conservation of migratory waterfowl and to offset or prevent the serious loss of wetlands by the acquisition of wetlands and other essential habitat, and for other purposes.”

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

Americans with Disabilities Act (1992): Prohibits discrimination in public accommodations and services.

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 Refuge System.

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.

Emergency Wetland Resources Act of 1986: This act authorized the purchase of wetlands from Land and Water Conservation Fund moneys, 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. 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 that implement it; 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.

Environmental Education Act of 1990 (20 USC 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.

Executive Order 11988, Floodplain 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 floodplain 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."

Fish and Wildlife Improvement Act of 1978: This act was passed to improve the administration of fish and wildlife programs; it 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.

Historic Preservation Acts include:

- 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.

- 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.

- 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 archaeologic data. The act authorized use of appropriated, donated, and/or transferred funds for the recovery, protection, and preservation of such data.

- 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, thirty-one national wildlife refuges contained such sites.

- 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, ninety-one such sites on national wildlife refuges are listed in this register.

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.

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, authorizes the opening of part of a refuge to waterfowl hunting and 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.

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.
Native American Graves Protection and Repatriation Act (1990): Requires Federal agencies and museums to inventory, determine ownership of, and repatriate cultural items under their control or possession.

American Conservation and Youth Service Corps: A Federal grant program established under Subtitle C of the law, the Corps offers an opportunity for young adults between the ages of 16-25, or in the case of summer programs, 15-21, to engage in approved human and natural resources projects which benefit the public or are carried out on federal or Indian lands. To be eligible for assistance, natural resource programs must focus on improvement of wildlife habitat and recreational areas, fish culture, fishery assistance, erosion, wetlands protection, pollution control, and similar projects. A stipend of not more than 100 percent of the poverty level will be paid to participants. A Commission established to administer the Youth Service Corps will make grants to States, the Secretaries of Agriculture and Interior, and the Director of ACTION to carry out these responsibilities.

National Environmental Policy Act of 1959 (P.L. 91-190,42 U.S.C. 4321-4347, January 1, 1970, 83 Stat. 852) as amended by Public Law 94-52, July 3, 1975, 89 Stat. 258, and Public Law 94-83, August 9,1975, 89 Stat. 424). 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.

National Wildlife Refuge System Improvement Act of 1997 (Refuge Administration Act), Public Law 105-57, amends the National Wildlife Refuge System Act of 1966 (16 U.S.C. 668dd-ee) and provides guidance for management and public use of the Refuge System. The 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. It 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 Refuge Improvement Act clearly defines a unifying mission for the Refuge System. It establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation and 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. The act establishes a formal process for determining compatibility; a compatible use is one which, in the sound professional judgment of the Refuge Manger, will not materially interfere with, or detract from, fulfillment of the National Wildlife Refuge System Mission or refuge purpose(s). The act establishes the responsibilities of the Secretary of the Interior for managing and protecting the Refuge System; and requires a comprehensive conservation plan for each refuge by the year 2012. 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.

North American Wetlands Conservation Act (103 Stat. 1968; 16 U.S.C. 4401-4412) 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 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.

Refuge Recreation Act of 1952: 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 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.

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 to the Refuge Revenue Sharing Act 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 moneys remaining in the fund after payment 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 which suffer losses in revenues due to the establishment of Service areas.

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.

Appendix IV. Refuge Biota

Birds
Total species 183; Breeding species 66

Common Name	*Spring March – May*	*Summer May –August*	*Fall Sept–Nov*	*Winter Dec–Feb*
Pied-billed Grebe	u	c	c	u
White Pelican	r	o	o	r
Double-crested Cormorant	u	u	c	r
Anhinga*	c	c	u	r
American Bittern	o	r	r	-
Great Blue Heron*	c	c	c	c
Great Egret*	c	c	c	o
Snowy Egret*	u	c	c	o
Little Blue Heron*	u	c	c	-
Tricolored Heron*	o	o	o	-
Cattle Egret*	c	a	a	o
Green Heron*	u	c	c	-
Black-crowned Night-Heron	-	r	r	-
Yellow-crowned Night-Heron*	u	c	u	-
White Ibis	u	o	u	r
Glossy Ibis	-	r	r	-
Roseate Spoonbill	-	o	o	-
Wood Stork	-	o	o	-
Black Vulture*	c	c	c	c
Turkey Vulture*	c	c	c	c
Fulvous Whistling-Duck	-	r	-	-
Black-bellied Whistling-Duck*	u	u	-	-
Greater White-fronted Goose	r	-	c	c
Snow Goose	r	-	c	c
Canada Goose	r	-	r	r
Wood Duck*	c	c	c	c
Green-winged Teal	o	r	a	c
American Black Duck	r	-	o	o
Mottled Duck	r	r	o	o
Mallard	o	r	a	a
Northern Pintail	r	-	a	u
Blue-winged Teal	o	o	c	o
Northern Shoveler	c	-	o	c

a =abundant c =common u =uncommon o =occasional r =rare
**species with confirmed breeding records*

Common Name	Spring March – May	Summer May –August	Fall Sept–Nov	Winter Dec–Feb
Gadwall	c	-	o	c
American Wigeon	c	-	o	c
Canvasback	-	-	o	r
Redhead	-	-	-	r
Ring-necked Duck	-	-	c	a
Lesser Scaup	-	-	r	r
Common Goldeneye	-	-	-	r
Hooded Merganser*	u	u	o	o
Ruddy Duck	-	-	-	r
Osprey	o	o	o	r
Swallow-tailed Kite	r	-	-	-
Mississippi Kite	o	u	-	-
Bald Eagle	o	r	o	o
Northern Harrier*	c	c	c	c
Sharp-shinned Hawk	-	-	o	o
Cooper 's Hawk	-	o	o	o
Red-shouldered Hawk*	c	c	c	c
Broad-winged Hawk	r	r	o	r
Red-tailed Hawk*	c	u	c	c
Golden Eagle	-	-	-	r
Crested Caracara	r	-	-	-
American Kestrel	o	o	o	r
Merlin	-	-	o	r
Peregrine Falcon	-	-	r	r
Wild Turkey*	u	u	u	u
Northern Bobwhite*	u	o	u	u
King Rail	r	r	r	r
Sora	r	-	r	r
Purple Gallinule	r	r	r	r
Common Moorhen*	u	u	u	-
American Coot	c	r	u	c
Sandhill Crane	-	-	o	o
Killdeer*	c	c	c	c
Black-necked Stilt	o	u	o	-
Greater Yellowlegs	o	o	o	o
Lesser Yellowlegs	c	c	o	o
Solitary Sandpiper	o	r	r	-

a =abundant c =common u =uncommon o =occasional r =rare
**species with confirmed breeding records*

Common Name	Spring March – May	Summer May –August	Fall Sept–Nov	Winter Dec–Feb
Willet	-	r	-	-
Semipalmated Sandpiper	o	u	o	-
Least Sandpiper	u	u	o	-
Pectoral Sandpiper	r	r	o	-
Dunlin	o	-	-	r
Stilt Sandpiper	-	o	-	-
Short-billed Dowitcher	o	-	r	o
Long-billed Dowitcher	-	r	r	r
Common Snipe	c	-	o	c
American Woodcock	r	-	r	u
Herring Gull	-	-	-	r
Rock Dove	o	o	o	os
Eurasian Collared-Dove	-	r	-	-
Mourning Dove*	c	c	a	a
Common Ground-Dove	r	-	r	o
Black-billed Cuckoo	r	-	r	-
Yellow-billed Cuckoo*	c	c	-	-
Groove-billed Ani	-	-	r	-
Common Barn Owl	r	r	r	r
Eastern Screech Owl*	u	u	u	u
Great Horned Owl*	u	u	u	u
Barred Owl*	c	c	c	c
Chimney Swift	-	r	-	-
Ruby-throated Hummingbird*	o	o	o	-
Belted Kingfisher*	u	u	u	u
Red-headed Woodpecker*	u	u	u	u
Red-bellied Woodpecker*	c	c	c	c
Yellow-bellied Sapsucker	c	-	u	c
Downy Woodpecker*	c	c	c	c
Hairy Woodpecker*	u	u	u	u
Northern Flicker*	c	u	u	a
Pileated Woodpecker*	c	c	c	c
Eastern Wood-Pewee*	u	u	u	-
Acadian Flycatcher*	c	c	c	-
Eastern Phoebe	u	o	o	c
Vermillion Flycatcher	-	-	r	o
Great Crested Flycatcher*	c	c	c	-
Eastern Kingbird*	o	o	o	-

a =abundant c =common u =uncommon o =occasional r =rare
**species with confirmed breeding records*

Common Name	Spring March – May	Summer May –August	Fall Sept–Nov	Winter Dec–Feb
Scissor-tailed Flycatcher	-	-	r	r
Loggerhead Shrike	c	u	u	u
White-eyed Vireo*	c	c	c	r
Blue-headed Vireo	r	-	r	u
Yellow-throated Vireo*	o	o	o	-
Red-eyed Vireo*	c	c	c	-
Blue Jay*	c	c	c	c
American Crow*	c	c	a	a
Fish Crow	c	c	o	o
Horned Lark	o	-	r	o
Purple Martin*	r	r	-	-
Tree Swallow	c	u	c	-
Northern Rough-winged Swallow	c	u	c	r
Barn Swallow	c	u	u	-
Carolina Chickadee*	c	c	c	c
Tufted Titmouse*	c	u	u	c
White-breasted Nuthatch	u	-	-	u
Carolina Wren*	c	c	c	c
House Wren	r	-	r	u
Winter Wren	o	-	r	u
Golden-crowned Kinglet	c	-	o	c
Ruby-crowned Kinglet	c	-	o	c
Blue-gray Gnatcatcher*	u	u	u	u
Eastern Bluebird	c	u	c	c
Hermit Thrush	o	-	o	u
Wood Thrush	u	u	r	-
American Robin	a	u	u	a
Gray Catbird	u	-	u	r
Northern Mockingbird*	a	a	a	a
Brown Thrasher*	c	c	c	c
Cedar Waxwing	o	-	-	o
European Starling*	c	c	c	c
Orange-crowned Warbler	r	-	r	o
Nashville Warbler	-	-	r	-
Northern Parula*	u	u	o	-
Yellow-rumped Warbler	u	-	-	c
Yellow-throated Warbler	u	u	u	-
Pine Warbler	-	-	o	r

a =abundant c =common u =uncommon o =occasional r =rare
**species with confirmed breeding records*

Common Name	Spring March – May	Summer May –August	Fall Sept–Nov	Winter Dec–Feb
Black-and-White Warbler	o	-	o	-
American Redstart	o	o	o	-
Prothonotary Warbler*	c	c	c	r
Swainson 's Warbler	r	-	r	r
Common Yellowthroat*	u	u	o	o
Hooded Warbler*	c	c	c	-
Yellow-breasted Chat*	r	o	r	-
Summer Tanager*	c	c	o	-
Scarlet Tanager	r	-	-	-
Northern Cardinal*	a	a	a	a
Blue Grosbeak*	u	-	-	u
Indigo Bunting*	c	c	u	-
Painted Bunting*	c	c	u	-
Dickcissel*	o	o	-	-
Eastern Towhee*	u	u	u	u
Chipping Sparrow	u	u	u	u
Field Sparrow	u	u	u	u
Vesper Sparrow	r	-	r	o
Savannah Sparrow	-	-	r	r
Grasshopper Sparrow	-	-	r	r
Fox Sparrow	-	-	-	r
Song Sparrow	c	-	-	c
Lincoln's Sparrow	-	-	-	r
Swamp Sparrow	r	-	r	u
White-throated Sparrow	r	-	u	c
White-crowned Sparrow	-	-	r	r
Dark-eyed Junco	-	-	u	c
Bobolink	r	-	r	-
Red-winged Blackbird*	c	c	c	c
Eastern Meadowlark	c	c	c	c
Brewer 's Blackbird	c	-	-	c
Common Grackle	c	c	c	c
Brown-headed Cowbird*	c	c	c	c
Orchard Oriole	o	o	o	-
Baltimore Oriole*	o	o	o	-
American Goldfinch	u	-	-	u
House Sparrow	o	o	o	o

a =abundant c =common u =uncommon o =occasional r =rare
**species with confirmed breeding records*

Mammals

Armadillo*

Bats:
1) Southeastern myotis
2) Eastern pipistrelle
3) Red
4) Seminole
5) Hoary
6) Northern yellow
7) Evening
8) Rafinesque's big-eared
Beaver*
Bobcat*
Coyote*
Feral hogs*
Gray fox*
Red fox*
Long-tailed weasel
Mink*

Mice:
1) House
2) Deer
3) Harvest
Nutria*
Opposum*
River Otter*
Raccoon*

Rats:
1) Wood
2) Rice
3) Cotton

Shrews:
1) Short-tailed
2) Least

Squirrels:
1) Gray*
2) Fox*
Striped skunk*

Rabbits:
1) Swamp*
2) Eastern Cottontail*
White-tailed deer*
Woodland vole

Amphibians and Reptiles

Snakes:
Timber rattlesnake*
Garter snake
Racer*
Eastern ribbon snake*
Rat snake*
King snake
Mud snake*
Copperhead*
Cottonmouth*
Various water snakes*

Frogs:
Bullfrog*
Bronze frog*
Pig frog*
Eastern narrowmouth toad*
Gray treefrog*
Green frog
Green treefrog*
Northern cricket frog*
Southern leopard frog*
Squirrel treefrog*
Spring peeper*
Upland chorus frog*
Woodhouse's toad*

Turtles:
Alligator snapping turtle*
Cooters*
Eastern box turtle
False map turtle
Mississippi map turtle
Musk turtle
Painted turtle
Slider*
Snapping turtle*
Spiny softshell
Stinkpot*

Sirens, Newts, Salamanders, Lizards, Skinks, & Crocodilians:
Lesser siren*
Central newt*
Mole salamander*
Green anole*
Eastern fence lizard
Broad-headed skink
Five-lined skink*
Ground skink*
Alligator*

Mussels:
Fat pocketbook
Flat .oater
Giant .oater
Mapleleaf
Paper pondshell
Papershell
Pink papershell
Pond mussel
Southern mapleleaf
Texas liliput
Yellow sandshell

**Species known to occur on Lake Ophelia NWR*

Fish:
Bluegill
Longear sunfish
Orange spotted sunfish
Redear sunfish
Warmouth
Green sunfish
White crappie
Black crappie
Largemouth bass
Yellow bass
Freshwater drum
Black bullheads
Yellow bullheads
Channel catfish
Flathead catfish
Bigmouth buffalo
Smallouth buffalo
Spotted gar
Shortnose gar
Longnose gar
Alligator gar
Carp
Bowfin

Vegetation

Trees – Dominant Vegetation
Black willow
Cherrybark willow
Cottonwood
Bald cypress
Drummond red maple
Elms: winged, water, cedar
Green ash
Gum -red, tupelo
Hackberry
Oaks: overcup, Nuttall,
Shumard, water, willow
Pecans — sweet and bitter
Red maple
Red mulberry
Swamp Cottonwood
Sweetgum
Sycamore

Mid-story/Understory - Subdominant vegetation
Black berry
Black locust
Box elder
Button bush
Deciduous holly
Dew berry
French mulberry
Haws (cretagus)
Honey locust
Honey suckle
Hornbeam palmetto
Persimmon
Prickly ash
Smilax
Swamp dogwood
Swamp privet
Switchcane
Vines: rattan, muscadine,
poison ivy and oak,
Virginia creeper, pepper vine,
cross vine and grape
Water hickory
Water locust

Wet Sites
Pickerel-weed
Water hyacinth
Pennywort
Duckweed
Arrowhead
Smartweed
Water primrose
American lotus
Coontail
Floating heart
various sedges and grasses
Iris
Spider lily
Lizards tail
Marsh mallow
Cardinal flower

**Species known to occur on Lake Ophelia NWR*

Appendix V. Decisions and Approvals

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION

Originating Person: Michael P. Chouinard
Telephone Number: 318-253-4238
E-Mail: mike_chouinard@fws.gov
Date: June 15, 2005

Project Name: Lake Ophelia National Wildlife Refuge Comprehensive Conservation Plan

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: Louisiana/ U.S. Fish and Wildlife Service

III. Station Name: Lake Ophelia National Wildlife Refuge

IV. Description of Proposed Action (attach additional pages as needed): Implementation of the Comprehensive Conservation Plan for Lake Ophelia NWR by adopting the preferred alternative of Ecosystem Emphasis which will provide guidance, management direction and operation plans for the next 15 years.

V. Pertinent Species and Habitat:

A. Include species/habitat occurrence map: The Refuge is within the known breeding range of Louisiana black bear (USFWS Louisiana Black Bear Recovery Plan, 1995). It is likely that male Louisiana black bears move through the Refuge, but no breeding has been reported in recent years. As part of the Recovery Plan for the bear, the Service and other partners have initiated a Louisiana black bear repatriation project within the Red River/Three Rivers Conservation Area, that includes Lake Ophelia NWR.

Bald eagles are occasionally seen during winter months on the Refuge. The Refuge was a bald eagle hacking site from 1992 to 1994 when 31 eaglets were successfully fledged. One starter nest was observed on the Refuge in 1995, but no other active eagle nests have been observed.

Interior least tern colonies have been documented on the Red River from river mile 44 to 240, upstream from the Refuge. Potential least tern nesting habitat occurs on the Red River adjacent to the Refuge.

Pallid sturgeon have been documented in the Red River near the Old River Control structures approximately 10 miles downstream.

Ivory-billed woodpecker have not been documented in the area since before the 1940's; however, the Refuge lies within the historic distribution of this species.

B. Complete the following table.

SPECIES/CRITICAL HABITAT	STATUS[1]
Louisiana Black Bear	T
Bald Eagle	T
Interior Least Tern	E
Pallid Sturgeon	E
Ivory-billed woodpecker	**E**

[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: Lower Mississippi Valley No. 27

B. County and State: Avoyelles, Louisiana

C. Section, township, and range (or latitude and longitude): T2N, T3N, R6E

D. Distance (miles) and direction to nearest town: Twenty miles southwest to Marksville, LA

E. Species/habitat occurrence:

Louisiana Black Bear- males probably travel through the Refuge and eleven female black bears and cubs were repatriated on the Refuge.

Bald Eagle- occasionally observed during winter. No active nest.

Interior Least Tern- no known nesting colonies on Red River adjoining the Refuge, but active colonies found upstream on sandbars in Pools 1-5.

Pallid Sturgeon- known to occur in the Red River at the Old River Control Complex approximately 10 miles downstream from the Refuge.

Ivory-billed woodpecker have not been documented in the area since before the 1940's; however, the Refuge lies within the historic distribution of this species.

VII. 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
Louisiana Black Bear	No negative impacts foreseen, more protection
Bald Eagle	No negative impacts foreseen, more protection
Interior Least Tern	No negative impacts foreseen, more protection
Pallid Sturgeon	No negative impacts foreseen, more protection
Ivory-billed woodpecker	**No negative impacts foreseen, more protection**

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

SPECIES/ CRITICAL HABITAT	ACTIONS TO MITIGATE/MINIMIZE IMPACTS
Louisiana Black Bear	Maintain and expand bottomland hardwood habitat
Bald Eagle	Maintain and expand potential roosting and feeding habitat
Interior Least Tern	Work with COE and private landowner to maintain sandbar habitat
Pallid Sturgeon	Maintain water quality and in stream flow in the Red River
Ivory-billed woodpecker	**Expand bottomland hardwood forest and maintain set-aside forested areaswith no or limited disturbance.**

VIII. Effect Determination and Response Requested:

SPECIES/ CRITICAL HABITAT	DETERMINATION[1]			RESPONSE[1] REQUESTED
	NE	NA	A	
Louisiana Black Bear		X		
Bald Eagle		X		
Interior Least Tern		X		
Pallid Sturgeon		X		
Ivory-billed woodpecker		**X**		

[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 listed species is "Formal Consultation". Response Requested for proposed or candidate species is "Conference."

MP Clouner — 6/15/05

Signature (originating station) **Date**

Project Leader

Title

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):

6/20/05

Signature **Date**

Field Supervisor — Lafayette, LA

Title **Office**

COMPATIBILITY DETERMINATION

Lake Ophelia National Wildlife Refuge Compatibility Determination

Uses: The following uses were considered for compatibility determination reviews: hunting, fishing, wildlife observation and photography, environmental education and interpretation, all-terrain vehicle use, trapping of selected furbearers, cooperative farming program, forest management program and Refuge resource research studies. A description and anticipated biological impacts for each use are addressed separately in this Compatibility Determination.

Refuge Name: Lake Ophelia National Wildlife Refuge.

Date Established: March 17, 1989.

Establishing and Acquisition Authority(ies): 16 U.S.C., Sec. 3901(b), 100 Stat. 3583 (Emergency Wetlands Resources Act of 1986) and 16 U.S.C. Sec. 664 (Migratory Bird Conservation Act of 1929).

Refuge Purpose: The purpose of Lake Ophelia National Wildlife Refuge, as reflected in the Refuge's authorizing legislation, is to protect and conserve migratory birds and other wildlife resources through the protection of wetlands, in accordance with the following laws:

> *...the conservation of wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions...* 16 U.S.C., Sec. 3901(b), 100 Stat. 3583 (Emergency Wetlands Resources Act of 1986);
>
> *...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds...* 16 U.S.C. Sec. 664 (Migratory Bird Conservation Act of 1929);
>
> *...for the development, advancement, management, conservation, and protection of fish and wildlife resources...* 16 U.S.C. Sec 742f(a)4; and
>
> *...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services...* 16 U.S.C. Sec. 742f(b)1 (Fish and Wildlife Act of 1956).

The Refuge's purpose and importance to migratory birds, particularly waterfowl, was further described in the Service's Environmental Assessment for the proposed establishment of the Refuge (1989): *To preserve wintering habitat for mallards, pintails, and wood ducks and production habitat for wood ducks to meet the habitat goals presented in the Ten-Year Waterfowl Habitat Acquisition Plan and the North American Waterfowl Management Plan.*

The Refuge purpose was further described in the Approval Memorandum for the purchase of lands for the establishment of Lake Ophelia National Wildlife Refuge where the primary reason for acquisition and inclusion of the area into the National Wildlife Refuge System was to preserve wintering habitat for mallards, pintails, wood ducks, and production habitat for wood ducks (USFWS Southeast Region Approval Memorandum, 1989). Three objectives for which the area will be managed were identified in the Approval Memorandum: to preserve an area which has traditional high use for wintering waterfowl; to provide additional waterfowl habitat through Refuge management; and to establish a waterfowl sanctuary.

National Wildlife Refuge System Mission:

The mission of the Refuge System, as defined by the National Wildlife Refuge System Improvement Act of 1997, 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.*

Other Applicable Laws, Regulations, and Policies:

Antiquities Act of 1906 (34 Stat. 225)
Migratory Bird Treaty Act of 1918 (15 U.S.C. 703-711; 40 Stat. 755)
Migratory Bird Conservation Act of 1929 (16 U.S.C. 715r; 45 Stat. 1222)
Migratory Bird Hunting Stamp Act of 1934 (16 U.S.C. 718-178h; 48 Stat. 451)
Criminal Code Provisions of 1940 (18 U.S.C. 41)
Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; 54 Stat. 250)
Refuge Trespass Act of June 25, 1948 (18 U.S.C. 41; 62 Stat. 686)
Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat.1119)
Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4; 76 Stat. 653)
Wilderness Act (16 U.S.C. 1131; 78 Stat. 890)
Land and Water Conservation Fund Act of 1965
National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et seq.; 80 Stat. 915)
National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd, 668ee; 80 Stat. 927)
National Environmental Policy Act of 1969, NEPA (42 U.S.C. 4321, et seq; 83 Stat. 852)
Use of Off-Road Vehicles on Public Lands (Executive Order 11644, as amended by Executive Order 10989)
Endangered Species Act of 1973 (16 U.S.C. 1531 et seq; 87 Stat. 884)
Refuge Revenue Sharing Act of 1935, as amended in 1978 (16 U.S.C. 715s; 92 Stat. 1319)
National Wildlife Refuge Regulations for the Most Recent Fiscal Year (50 CFR Subchapter C; 43 CFR 3101.3-3)
Emergency Wetlands Resources Act of 1986 (S.B. 740)
North American Wetlands Conservation Act of 1990
Food Security Act (Farm Bill) of 1990 as amended (HR 2100)
The Property Clause of The U.S. Constitution Article IV 3, Clause 2
The Commerce Clause of The U.S. Constitution Article 1, Section 8
The National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57, USC668dd)
Executive Order 12996, Management and General public Use of the National Wildlife Refuge System. March 25, 1996
Title 50, Code of Federal Regulations, Parts 25-33
Archaeological Resources Protection Act of 1979
Native American Graves Protection and Repatriation Act of 1990

Compatibility determinations for each description listed were considered separately. Although for brevity, the preceding sections from “Uses” through “Other Applicable Laws, Regulations and Policies” are only written once within the plan, they are part of each descriptive use and become part of that compatibility determination if considered outside of the Comprehensive Conservation Plan.

Description of Use:

Hunting

Most of the Refuge area is a mosaic of forest blocks of mid-succession bottomland hardwoods, reforested fields, agricultural fields, moist soil management units and interconnected sloughs, bayous and lakes. There is a great variety of tree species on the Refuge that includes oak, hackberry, black gum, hickory, elm, green ash, bitter pecan, cypress, tupelo, and willow. This rich forested wetland provides good habitat for a number of game species including white-tailed deer, turkey, squirrel, raccoon, woodcock and waterfowl.

Many of the local residents enjoy an informal, rural lifestyle that includes frequent recreational use of the area's natural resources. Hunting and fishing have been, and continue to be, popular uses of Refuge lands. Hunting has been permitted since 1990, when the Refuge was first approved to offer hunting of big game and small game. Waterfowl hunting was approved in 1996 and has been offered on portions of the Refuge since that time. The administration as well as special regulations for hunting have changed over time but the majority of the program has remained unchanged.

The Comprehensive Conservation Plan calls for the continued hunting of deer, small game, waterfowl, woodcock and turkey. All hunts fall within the framework of the State's open seasons and follow state regulations. There are additional Refuge-specific regulations to supplement State regulations. These Refuge-specific regulations are reviewed annually and incorporated into the Refuge hunting and fishing brochure and permit that hunters are required to have before hunting on the Refuge. The Comprehensive Conservation Plan will increase law enforcement presence during hunting seasons; will evaluate the hunt program annually and modify seasons, hunt areas or regulations if necessary; and additional non-hunting areas could be added as the Refuge expands through an active land acquisition program. Implementation of the proposed alternative, as described in the Comprehensive Conservation Plan, will ensure that opportunities for various types of wildlife-dependent recreation will continue for future generations.

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 this use at its current level. Additional fiscal resources are needed to conduct this use as proposed. An additional office automation clerk is needed to assist with hunting program administration and visitor service. Upgrading and expanding the current radio system to Department of the Interior standards is needed to improve emergency response and ensure the safety of officers in the field. Additional hunt acreage, hunter safety classes, and annual hunt brochures are proposed.

Anticipated Impacts of the Use: The deer herd has expanded and increased significantly since the Refuge was established. Prior to Refuge establishment this portion of Avoyelles Parish was subject to excessive deer poaching that maintained the deer herd at low levels. Following Refuge establishment and initiation of an effective wildlife law enforcement program the deer herd has increased significantly in and around the Refuge. The Refuge's mix of forest, reforestation fields, agriculture and moist soil management areas provides ideal habitat conditions for whitetail deer. Following ten years of Refuge deer management, the deer herd has a more balanced age and sex structure and the population is below carrying capacity as indicated by recent browse and abomasum parasite surveys and harvested yearling buck weights. Turkey populations on the Refuge have fluctuated since Refuge establishment due to the impacts of spring flooding on nest success. Recent gobbler surveys indicated an expanding turkey population and the first spring gobbler only turkey season on the Refuge was held in spring 2001. Two two-day quota turkey hunts were conducted in 2001 resulting in the harvest of two gobblers, although several other gobblers were heard and worked.

The floodplain hardwood forests of the area support high squirrel populations and have for several years. As a result, fall squirrel hunting is one of the most popular activities on the Refuge. Squirrel dogs are occasionally used in late winter following leaf fall.

The raccoon population appears to be increasing throughout the area, and in the absence of predators, raccoon populations rapidly build to levels resulting in disease problems and impacts to the reproduction of nongame forest-breeding birds and wild turkeys. Therefore, in addition to providing hunting opportunities, an effective hunting program for raccoon is particularly important to keep the raccoon population at a level that does not negatively affect nongame forest-breeding birds and wild turkeys.

The traditional method for hunting raccoons is the use of dogs at night to tree raccoons. The use of dogs typically occurs with a single, well-trained dog under a high level of control by the hunter and rarely, if ever, results in unacceptable levels of disturbance to other wildlife. Many years of experience, on multiple refuges and national recreation areas across the Southeast Region, indicate that traditional methods of take for these species, conducted under controlled conditions of carefully regulated and enforced seasons on large forested land areas, do not negatively or cumulatively affect other wildlife or other users. As with all hunts on the Refuge, results will be carefully monitored and changes implemented as needed across time to minimize the impacts and maintain compatibility.

Duck hunting occurs in a number of sloughs, bayous and lakes throughout the Refuge until backwater flooding provides additional habitat usually accompanied by an increase in Refuge duck populations and hunter effort. Dabbler species such as mallard, gadwall, widgeon, wood duck and teal are the most abundant species by number and thus are the most commonly harvested species.

Harvest management of big game (white-tailed deer and turkey) is the art of combining wildlife science and landowner objectives for the attainment of a specific management goal. Harvest management strategies should be based on objectives established as part of hunting plans developed for the area. The objective-setting process must be based on a complete analysis of biological data. Specific harvest objectives allow the setting of hunting regulations. Results of each hunting season will be thoroughly evaluated to ensure that the harvest management program remains dynamic and responsive to an evolving management environment (Bookhout 1994).

Harvest management of upland game and furbearers (squirrel, rabbit, raccoon, opossum, beaver) is considerably different from that of both big game and migratory birds. Current literature suggests that user take (<50% of total mortality) of most upland game is compensatory; that factors such as immigration from adjacent areas and density-dependent production operate in most upland game populations; and that hunting does not significantly impact populations. Hunting is substituted for natural mortality. Production of large, annual surpluses of young allows for lengthy seasons and generous bag limits with little concern for over-harvest and minimal chance of population impacts in most areas (Bookhout, 1994).

Harvest management of migratory birds (ducks, woodcock) is more difficult to assess. Migratory bird regulations are established at the Federal level each year following a series of meetings involving both State and Federal biologists. Harvest guidelines are based on population survey data with regulations that are subject to change each year, including bag limits, season lengths, and framework dates (Bookhout, 1994). Schimidt (1993) states, "In general, all studies have demonstrated a high degree of compensation of hunting mortality by other 'natural' mortality factors for harvest levels experienced to date." He also reports, "The proportion of waterfowl populations subject to hunting on refuges is very low, thus hunting is not likely to have an adverse impact on the status of any recognized waterfowl population in North America."

The Refuge's great variety and abundance of high quality wetland areas provide outstanding habitat for a variety of wading birds. Wading birds frequent these wetlands and two known rookeries are present

on the property. Primary species include the great blue heron, little blue heron, green heron, cattle egret, snowy egret, great egret, anhinga, and night herons (USFWS, 1989). The potential of disturbance, especially during the nesting season, does exist for these rookeries; however, this potential will be virtually nonexistent due to no overlap of hunting seasons with nesting season.

Similar to wading birds, the area's habitat for Neotropical migratory birds is outstanding (USFWS, 1998). Neotropical migrants use the interior hardwood forested areas and edges. Disturbance to Neotropicals will be minimal and temporary as the habitat will be slightly altered for the betterment of these species.

Based on available information, no threatened or endangered species, other than the bald eagle and Louisiana black bear, have been documented on Lake Ophelia National Wildlife Refuge. It is anticipated that the current levels and expected future levels of hunting or other wildlife-dependent recreation activities will not directly, indirectly, or cumulatively impact any listed, proposed, or candidate species or designated/proposed critical habitat. Data gathered from future biological surveys regarding the importance or potential importance of the Refuge to threatened or endangered species or critical habitat (or proposed threatened, endangered, or critical habitat), could result in changes to public use activities across time; however, these changes will have no effect on listed species.

Incidental take of other wildlife species, either illegally or unintentionally, may occur with any consumptive use program. At current and anticipated public use levels, incidental take will be very small and will not directly or cumulatively impact current or future populations of wildlife either on this Refuge or in the surrounding areas. Implementation of an effective law enforcement program and development of site specific Refuge regulations/special conditions will eliminate most incidental take problems.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility: Hunting will be permitted in accordance with State of Louisiana regulations and licensing requirements. An Environmental Assessment is on file at the Refuge headquarters as part of the Hunting Plan. Following completion of the Comprehensive Conservation Plan, the Hunting Plan will be updated and revised. The following stipulations will help ensure the Refuge hunting program is compatible with Refuge purposes.

> Vehicles will be restricted to existing roads. All-terrain vehicles will be restricted to designated trails/roads. Off-road travel will be limited to foot travel only.
>
> Firearms, bows, and other weapons will be prohibited except during designated hunting seasons.
>
> Hunting deer with dogs will not be allowed on the Refuge. Use of dogs for hunting rabbit, squirrel, raccoon, waterfowl, and woodcock will be allowed during designated seasons only.
>
> Camping overnight on the Refuge will be prohibited.
>
> All hunts will be designed to provide quality user opportunities based upon known wildlife population levels and biological parameters. Hunt season dates and bag limits will be adjusted as needed to achieve balanced wildlife population levels within carrying capacities, regardless of impacts to user opportunities.

As additional data is collected and a long-range hunt plan developed, additional Refuge-specific regulations could be implemented. These regulations could include, but may not be limited to, season dates that differ from those in surrounding State zones, Refuge permit requirements, and closed areas on a permanent or seasonal basis (to reduce disturbance to specific wildlife species or habitats, such as bird rookeries, wintering waterfowl or threatened/endangered species, or to provide for public safety).

Justification: Hunting is compatible with the purposes for which the Refuge was established and the mission of the National Wildlife Refuge System. It is one of the public use recreational activities that is specifically identified in the 1997 National Wildlife Refuge System Improvement Act to be allowed where possible on Refuges. Refuge deer and raccoon hunts are used as management tools to protect the diverse ecosystem. It has been well documented that hunting mortality from small game and spring gobbler harvests is incidental to overall mortality. Waterfowl hunting mortality has been documented as being compensatory to natural mortality factors and the number or waterfowl hunted on Refuges is insignificant in terms of the overall continental population.

Mandatory 10- or 15-year Re-evaluation Date: _____9/26/2020_____

Description of Use:

Fishing
Sport fishing is a common public use on the Refuge and surrounding area. Fishing is permitted on designated Refuge lakes and bayous on a seasonal basis from March 1 to October 15. Fish creel limits, boating safety and license requirements are in accordance with State of Louisiana regulations. Lake Ophelia has historically offered excellent fishing opportunities for largemouth bass, crappie and bluegill. However, three years of drought conditions from 1997 to 2000 reduced this 350-acre lake to only 15 acres in the fall of 2000. Unfortunately most of the fishery was lost and the lake has been closed to public use since that time. The water level has started to recover and with more normal rainfall patterns should refill allowing continued public fishing in the near future. A public boat ramp and accessible fishing pier is available at Lake Ophelia. Duck and Westcut Lakes offer only limited fishing opportunities due to a lack of vehicle or boat access. The same is true for the Frazier-Whitehorse Bend Cut-off of the Red River. This former Red River channel borders the Refuge for several miles, but there are currently no public access points. Frazier-Whitehorse supports an excellent floodplain fishery that is utilized by adjoining private camp owners. Development of public access to these Refuge lakes would allow the public to utilize these important fishery resources. As identified in the Comprehensive Conservation Plan, additional access and boat ramps will be provided, creel surveys conducted, and water quality analysis performed in order to provide a high quality fishing experience.

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. Additional fiscal resources are needed to conduct this use as proposed. To improve sport fishing opportunities, additional boat ramps, creel surveys, water quality analyses, restrooms and aquatic weed control are proposed.

Anticipated Impacts of the Use: Recreational fishing should not adversely affect the fisheries resource, wildlife resource, endangered species, or any other natural resource of the Refuge. There may be some limited disturbance to certain species of wildlife and some trampling of vegetation; however, this should be short-lived and relatively minor and will not negatively impact wetland values of the Refuge. 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 will be established during nesting season to eliminate this concern.

Construction of boat ramp facilities at Frazier-Whitehorse, Duck and Westcut Lakes will create some disturbance to the natural environment during construction and lead to increased public use on these water bodies. All construction activities will be carried out with appropriate permits under Section 404 of the Clean Water Act and State Historic Preservation Officer review of cultural resources. Sediment retention barriers will be utilized during boat ramp construction and soil stabilization features will be incorporated in to ramp design to minimize any future soil erosion potential. Public use of these water bodies will be expected to increase as a result of boat ramp construction, but the level of use is not expected to cause detrimental wildlife disturbance. Time and space zoning of lake use will be utilized as necessary to minimize wildlife disturbance. Problems associated with littering and illegal take of fish will be controlled through law enforcement activities. Providing information to Refuge visitors about rules and regulations, along with increased law enforcement patrol, will keep these negative impacts to a minimum.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: Conflicts between fishermen and hunters or other visitors using the Refuge for nonconsumptive wildlife recreation have not been a problem in the past and are not expected to be a problem in the future. Associated violations such as taking undersize fish, open fires and littering can be minimized by a continued law enforcement presence. An Environmental Assessment is on file at the Refuge headquarters as part of the Fishing Plan. Following completion of the Comprehensive Conservation Plan, the Fishing Plan will be updated and revised. The following stipulations will help ensure the Refuge fishing program is compatible with Refuge purposes.

Outboard motors up to 25HP allowed; some water bodies may seasonally restrict or prohibit outboard motor use to minimize wildlife disturbance.

All fishing tackle must be attended at all times.

Leaving boats on the Refuge overnight is prohibited.

Fishing allowed during daylight hours only.

Justification: Refuge lakes and sloughs are seasonally open to fishing under State regulations. Although limited in size, time and space zoning of recreational fishing is providing a quality fishing experience on a sustainable basis. Fishing is a public use activity that, according to the 1997 National Wildlife Refuge System Improvement Act, should be provided and expanded where possible. Improved access facilities will reduce bank erosion and habitat disturbance, while providing additional quality fishing opportunities.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2020_____

Description of Use:

Wildlife Observation and Photography
Nonconsumptive wildlife observation uses such as birdwatching, auto tour routes, hiking, and nature photography are minimal at this time due to the area's distance from large metropolitan areas and the general lack of access and facilities. It is estimated that 2,000 visits/year are attributed to wildlife observation and related activities.

It is anticipated that an increase in nonconsumptive wildlife-dependent uses will occur over the next few years as facilities and access are provided and especially as the public and conservation groups become aware of the excellent birding/wildlife viewing opportunities on the Refuge. This anticipated increase will be slow in developing and due to the remoteness of the area, high numbers of users are not expected.

There are 12 miles of Refuge primary roads maintained for public vehicle travel. An additional 9 miles of Refuge secondary roads are maintained for administrative purposes, while 17 miles of all-terrain vehicle trails for hunting and fishing access and 4 miles of foot trails are maintained for public use. Nine miles of all-terrain vehicle trail will be upgraded and converted to public vehicle travel, 12 miles of Refuge primary roads will be upgraded to national refuge road standards and 4 miles of new foot trails will be created.

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. Additional fiscal resources are needed to provide this use as proposed. To provide safe, high quality wildlife observation and photography opportunities, vehicular road access must be improved, wildlife observation points developed and directional/interpretive signage provided.

Anticipated Impacts of the Use: Wildlife observation and photography activities might result in some disturbance to wildlife, especially if visitors venture too close to one of the bird rookeries. Refuge road systems, foot trails, boardwalks and wildlife observation platforms opened to public use will be located to minimize disturbance that could occur in these sensitive areas. If unacceptable levels of disturbance is identified at any time, sensitive sites will be closed to public entry. Some minimal trampling of vegetation also may occur.

Construction of foot trails, boardwalks, observation platforms, upgrading Refuge roads and converting all-terrain vehicle trails to vehicular traffic will alter small portions of the natural environment. Proper planning prior to construction, sediment retention and grade stabilization features will reduce negative impacts to wetlands, threatened and endangered species and species of special concern. Impacts such as trampling vegetation and wildlife disturbance by Refuge visitors do occur, but is presently not significant. Upgrading Refuge roads and converting all-terrain vehicle trails to vehicular roads will reduce soil erosion associated with the current dirt roads and trails. Other potential negative impacts are caused by visitors violating Refuge regulations such as littering or illegally taking plants or wildlife. Refuge roads are maintained for habitat and biological management programs and law enforcement. Use of the roads by the public does incur added maintenance costs.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: Permits prior to construction will be obtained from local, State and Federal regulatory agencies to reduce the possibility of negatively impacting wetlands, cultural resources or protected species. Law enforcement patrol of public use areas will continue to minimize violations of Refuge regulations. Refuge roads will be closed to the public during extremely wet periods such as flooding to prevent road damage and for visitor safety. Public use for wildlife observation and photography will be monitored to document any negative impacts. If any negative impacts become noticeable, corrective action will be taken to reduce or eliminate the effects on wildlife.

Justification: Wildlife observation and photography are important and preferred public uses on Lake Ophelia National Wildlife Refuge and the National Wildlife Refuge System. The 1997 National Wildlife

Refuge System Improvement Act identified wildlife observation as a priority public recreational use to be facilitated on Refuges. It is through permitted, compatible public uses such as this, that the public becomes aware of and provides support for our national wildlife refuges.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2020_____

Description of Use:

Environmental Education and Interpretation
Environmental education and interpretation are those activities which seek to increase the public's knowledge and understanding of wildlife, National Wildlife Refuges, ecology and land management, as well as contribute to the conservation of natural resources. Interpretation and environmental education programs for the Refuge will be developed. Environmental education/interpretation activities have been largely nonexistent in prior years. Efforts to develop this program are planned and will usually be associated with structured activities conducted by Refuge staff or trained volunteers. Refuge staff will develop and provide curriculum and support materials to area teachers for use both on and off the Refuge. Informational kiosks and interpretive panels will be developed at key Refuge entrance points, at the Duck Lake boardwalk, Possum Bayou and Lake Ophelia trailheads and at the proposed Point Basse and waterfowl sanctuary wildlife observation platforms as part of the environmental education/interpretation program.

Availability of Resources: Based on a review of the Refuge's budget allocated for these activities, funding is inadequate to ensure compatibility and to administer these uses at current or proposed levels. Additional fiscal resources are needed to conduct these uses. Current staffing is extremely limited with no public use staff. The management of a volunteer program will be essential to successfully implement the education and visitor use program. Volunteers will be recruited and trained to assist staff in developing and implementing environmental education and interpretive programs. The addition of a permanent park ranger (interpretive)/public use specialist and facilities including vehicle access roads, boardwalks, signs, parking and trail head development, kiosks, and environmental education materials are needed to provide and conduct wildlife observation, and photography, and environmental education and interpretation activities.

Anticipated Impacts of the Use: Construction of facilities such as boardwalks, kiosks and observation platforms will alter small portions of the natural environment on the Refuge. Proper planning and placement of facilities will ensure that wetlands, threatened or endangered species, or species of special concern are not negatively impacted. Proper permits through the parish, State and Federal regulatory agencies will be obtained prior to construction to ensure resource protection. The use of on-site, hands-on, action-oriented activities to accomplish environmental education and interpretive tours 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 to wildlife species in the immediate area. Educational activities held off-Refuge will not create any biological impacts on the resource.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: Zoning of visitor activities by time and space, clustering public use facilities, proper monitoring, educating visitors, and enforcement will ensure compatibility with the purposes of the Refuge and mission of the National Wildlife Refuge System. Through periodic evaluation of trails and visitor contact points, the visitor services program will assess resource

impacts. If future human impacts are determined through evaluation to be detrimental to important natural resources, actions will be taken to reduce or eliminate those impacts. Major portions of the Refuge will remain undeveloped, without public interpretive facilities.

Justification: Interpretation and environmental education are identified in the 1997 National Wildlife Refuge System Improvement Act as activities that should be provided and expanded on refuges. Educating and informing the public through structured environmental education courses, interpretive materials, and guided tours about migratory birds, endangered species, wildlife management, and ecosystems will lead to improved support of the Service's mission to protect our natural resources.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2020_____

Description of Use:

All-Terrain Vehicle Use

A large portion of the Refuge is inaccessible to conventional vehicles due to either impassible roads or no roads. In order to disperse hunters and access remote areas for hunting and fishing, Refuge users have historically utilized all-terrain vehicles throughout the area resulting in a fairly limited system of trails distributed to most areas of the Refuge.

Considering the topography of the area and its remoteness, the need for limited use of all-terrain vehicles by certain Refuge users is apparent. It will be impossible to develop an effective public use program that provides optimum consumptive use opportunities without providing for all-terrain vehicle use.

Service policy pertaining to all-terrain vehicle use requires such use be in conjunction with wildlife-dependent activities only, and be confined to designated areas or trails identified for such use; all off-road use is restricted to foot travel only. Approximately 17 miles of all-terrain trails are currently available for seasonal use for hunting and fishing access. All all-terrain vehicle trails are shown on Refuge brochure maps and designated for public use by signs. Some modifications to this initial trail system will be necessary from time to time as Refuge public use patterns change and/or other public use development occurs. Approximately 9 miles of these all-terrain vehicle trails provide access to Refuge lakes and areas targeted for the development of interpretation/environmental education facilities. These trails were historically accessed by conventional vehicles prior to Refuge establishment, but were restricted to all-terrain vehicles after Refuge establishment in an effort to minimize environmental damage associated with vehicle travel during wet conditions. Upgrading these former roads/trails by adding gravel and culverts will allow conventional vehicular access to a segment of the public that currently has virtually no access to major portions of the Refuge.

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. As some of the current ATV trails are converted to vehicular access, funding required to administer and maintain use will decrease proportionately. Additional fiscal resources will be needed contingent on future Refuge land acquisition to develop appropriate ATV trails in order to provide initial public access to newly acquired lands.

Anticipated Impacts of the Use: With these trail upgrades the Refuge will have approximately 8 miles of designated all-terrain vehicle trails and 9 miles of additional vehicular access roads. Designated all-terrain vehicle trails will be open seasonally to support hunting-and fishing-related public use. The upgraded vehicular roads will be open year round to support all priority public uses. All-terrain vehicle trails are located on former dirt field and woods roads that were existing when the Refuge was established. These trails have

crown to provide drainage from the trail surface and are maintained by bushhogging two to three times per year. All-terrain vehicle use causes trampling of the mowed vegetation, but rutting and associated soil erosion is very minimal. Some wildlife disturbance may occur adjacent to the trails, but is believed to be minimal and is restricted to primarily the fall and winter months. Any disturbance from all-terrain vehicles is comparable to regular vehicles traveling Refuge roads. All-terrain vehicles are restricted to designated marked trails. Therefore any impacts are restricted to a very small portion of the Refuge.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: All-terrain vehicle use is permitted in support of hunting and fishing activities where adequate access is not available by maintained vehicular roads. All persons over 16 years of age must have a Lake Ophelia Hunting, Fishing and All-terrain Vehicle Use permit in order to use an all-terrain vehicle on the Refuge. Persons under 16 years of age are not allowed to operate an all-terrain vehicle on the Refuge. All-terrain vehicle use is restricted to designated and maintained all-terrain vehicle trails. No off-trail use of all-terrain vehicles is permitted. All-terrain vehicles used on the Refuge must have low ground pressure tires with a manufacture's recommended tire pressure of 7 pounds per square inch and may not have tire lug depths greater than one inch. All weapons transported on all-terrain vehicles must be fully unloaded. All-terrain vehicle use is permitted only during daylight hours.

Justification: Hunting and fishing are identified in the 1997 National Wildlife Refuge System Improvement Act as priority wildlife-dependent recreational activities that should be promoted and expanded on refuges. Lake Ophelia National Wildlife Refuge has very limited vehicular access to most portions of the Refuge. To facilitate hunting and fishing use, a limited system of all-terrain vehicle trails is required to provide access to major portions of the Refuge and to specific lakes. Without these trails the public will not be able to access major portions of the Refuge. Prior to Refuge ownership these areas were accessed by four wheel drive trucks, which created significant damage to the natural environment through severe rutting of dirt trails. Following Refuge establishment, these trails were converted to all-terrain vehicle use only, as a means of providing public access, while minimizing any damage to the natural environment.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2015_____

Description of Use:

Trapping of Selected Furbearers
Raccoon and beaver are the species upon which management activities may be directed. Both species are at a sufficiently high level on the Refuge to adversely affect ecosystem functions. As indicated in the Comprehensive Conservation Plan, beaver activities have caused significant deterioration and loss of bottomland hardwoods throughout the Refuge, and excessive numbers of raccoons can have negative effects on the reproduction of forest breeding birds and wild turkeys. Protection and restoration of bottomland hardwoods and improvements in game and nongame populations are central components of the plan. To this end, trapping and/or hunting remain the only viable methods to reduce population levels of beaver and raccoon. The Service will issue Special Use Permits to administer a trapping program consistent with sound biology, Refuge purposes, and conservation of ecosystem functions.

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

Anticipated Impacts of the Use: Targeted removal of beaver and raccoon from portions of the Refuge will reduce the negative impacts these species are having on ecosystem functions. Control of beaver populations will help ensure the protection of important bottomland hardwood forests, including reforestation areas, and minimize beaver problems associated with the operation of over 25 water control structures on the Refuge. Regulated trapping of raccoon populations will reduce the nest predation this species causes to Neotropical birds and wild turkeys. However, no trapping program, regardless of how well it is designed, can prevent the possible take of other species. Trappers will be required to report the incidental take of other species. A negligible impact on other wildlife species is expected in both the short and long term.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: As a trapping program is implemented on the Refuge, it will be closely monitored to assess the potential adverse effects on other wildlife as well as the benefits to game and nongame species and their habitats. Modifications to the program will be implemented as needed to maintain compatibility. All trapping activities will be carried out under a Refuge special use permit. Trappers will be limited by number, area, and season in order to target problem areas and minimize any negative impacts. Each trapper will be required to report the number and location of all traps and all wildlife taken. The implementation of a trapping program, under controlled conditions, provides an essential population control management tool and is compatible with the purposes of the Refuge.

Justification: The purposes of Lake Ophelia National Wildlife Refuge emphasize conservation of wetlands and migratory birds. Trapping is a wildlife population management tool used to regulate the population of certain wildlife species when those species are disrupting ecosystem functions. Beavers and raccoons have been documented to cause negative impacts to forested wetlands and nesting birds. When these negative impacts become significant on the Refuge, wildlife managers need trapping as a management tool to control the level on damage. Certainly, beavers and raccoons are important components of the ecosystem, but when their populations and negative impacts become significant, wildlife managers need a regulated trapping program to reduce their populations to acceptable levels.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2015_____

Description of Use:

Cooperative Farming Program
Cooperative farming is utilized on the Refuge to manage and maintain approximately 3,700 acres of openland habitats that provide seasonally flooded crops and moist soil units necessary to meet the Refuge's waterfowl habitat objectives. This farming program is a critical component of the Refuge's habitat management program. The Refuge's two cooperative farmers enter into annual cooperative farming agreements specifying what crops will be grown in specific fields for both the Refuge's and cooperative farmers' shares. The cooperative farmer receives 80% of planted acres, while the Refuge receives 20% of the planted acres. The Refuge's crop share is strategically located in areas that can be flooded in the winter to provide waterfowl foraging habitat in support of North American Waterfowl Management Plan objectives for the Lower Mississippi Alluvial Valley. At the present time the Refuge does not have the staff or equipment necessary to manage and maintain the acreage needed to meet its waterfowl foraging objectives without the assistance of the cooperative farming program. Refuge cooperative farming operations will continue under carefully regulated conditions.

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 the Use: Cooperative farmers grow grain sorghum, rice, wheat, soybeans, and millet on the Refuge under an annually updated cooperative farming agreement. Refuge crop shares are left standing in the field to provide high energy grain and forage primarily for wintering waterfowl. The cooperative farmers' harvested fields are also used extensively by woodcock, waterfowl, deer, and wild turkeys. The majority of all cooperative farming takes place in the Refuge's core waterfowl sanctuary area. Cooperative farmers also provide the equipment and personnel to manage the Refuge's moist soil units as part of the cooperative farming agreement. If the Comprehensive Conservation Plan is enacted, approximately 1,200 acres of current Refuge cropland will be reforested. Continuing to farm the 1,200 acres scheduled for reforestation ensures the acreage is plantable with current reforestation techniques and ultimately improves the probability of successful reforestation.

Cooperative farming results in some degree of soil erosion due to spring discing and planting operations. The impact of soil erosion on adjacent wetlands and water bodies is minimal because of maintained grass buffer strips around each field and the extensive use of flash board risers to retain and slowly release sediment-laden water. Cooperative farmers are allowed to use approved pesticides under a closely monitored pesticide use proposal system. Refuge-approved pesticides have low toxicity and fast biodegradation rates compared to other commonly used agricultural pesticides. Under approved label application rates and methods, approved pesticides should have minimal effect on the biological environment. However, the potential exists for misapplication or accidental spills of approved pesticides. During the past ten years there have been no known pesticide accidents or pesticide-related wildlife mortality reported on the Refuge. Careful monitoring of cooperative farmer pesticide use and reforestation of approximately 1,200 acres of existing cropland should further reduce any potential impacts from pesticide use on the Refuge.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: The cooperative farming program is regulated through annual cooperative farming agreements that specify the field specific crops to be grown, acceptable farming practices, and approved pesticide use procedures. Special conditions contained in each cooperative farming agreement provide the following requirements: no fall discing allowed, vegetative filter strips are maintained around all fields and water bodies, crops must be harvested by November 15 and no drainage of seasonally flooded habitat is allowed until after March 1, Refuge crops will be planted in designated fields and not be manipulated in any way after maturity and only approved pesticides will be used when the level of pest occurrence is at the economic threshold level as indicated by crop scouting. Under these carefully controlled conditions, the cooperative farming program has been and is expected to continue to be compatible with the Refuge's purposes.

Justification: The cooperative farming actions as set forth in the Cropland Management Plan for Lake Ophelia National Wildlife Refuge are in accordance with Service guidelines for the protection, management and enhancement of habitats for wildlife populations on the Refuge. Adherence to the Cropland Management Plan promotes the enhancement of habitats for migratory birds, threatened and endangered species and resident wildlife.

Mandatory 10- or 15-year Re-evaluation Date:_____**9/26/2015**_____

Description of Use:

Forest Management Program
A forest management program will be initiated on Lake Ophelia National Wildlife Refuge in accordance with an approved forest management plan targeted for completion in 2005. Forest management as described in the Comprehensive Conservation Plan, will be directed towards protecting, restoring and managing the functions and values of the Refuge forest to support viable populations of native flora and fauna consistent with sound biological principles.

The entire Refuge forest habitat will be inventoried and mapped as part of the development of a forest management plan. This plan will provide a comprehensive forest management prescription to achieve forest habitat objectives over a 15-year planning cycle. Forest management prescriptions will include timber stand improvement, commercial timber harvest and reforestation.

Forest habitat manipulations will be carried out by commercial timber harvests. All harvesting will be conducted by Special Use Permit and carried out in accordance with the U.S. Fish and Wildlife Service Manual. The sale and disposition of forest products will be carried out by open market rules and formal bid solicitations.

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 current forest management program, which consists of reforestation and fire protection. The Comprehensive Conservation Plan describes a forest management program that will utilize timber harvest to promote the enhancement of habitats for both threatened and endangered species, migratory birds and resident wildlife; promote habitat restoration; protect cultural resources; and provide opportunities for public recreation and environmental education. Additional funding and staffing will be required to inventory forest stands, prepare a forest management plan, develop forest prescriptions, and administer timber harvest.

Anticipated Impacts of the Use: It is anticipated that forest habitat management will enhance the existing forest and help restore the functions and values typically associated with bottomland hardwood forest. Forest management operations will be directed at providing more vertical diversity (understory, midstory, canopy and superemergent trees) within each forest block in support of the habitat requirements of forest dwelling birds, black bears and other resident wildlife. Reforestation will be an important component of Refuge forest management with a special emphasis on creating a 100,000-acre core forest within the Red River/Three Rivers Source Population Objective Area. The 100,000-acre forest block will support area-sensitive species such as the swallow-tailed kite, cerulean warblers and black bears.

Forest management will include the use of commercial timber harvest operations, which if not tightly controlled and supervised, have the potential to cause adverse impacts on environmental quality. The controls placed on harvesting operations minimize possible adverse effects caused by logging equipment, such as excessive defacement and negative impacts on surface water quality. However, minimum short-term impacts do occur from harvesting operations such as actual mechanized operation disturbance to wildlife and trampling of the understory vegetation by equipment. The understory vegetation usually recovers in one growing season and usually is more beneficial to wildlife due to increased density and palatability caused by harvest operations (i.e., decreased competition and increased sunlight reaching the forest floor).

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: Commercial timber harvest operations will not be carried out on Lake Ophelia National Wildlife Refuge until a comprehensive forest inventory has been completed and a Forest Habitat Management Plan prepared. Forest management operations will be directed at providing a desired future condition for the overall Refuge forest. Individual forest stands will be inventoried, timber harvest prescriptions developed and timber harvest operations carried out in a manner that will accomplish the Refuge's forest habitat management objectives for migratory birds, threatened and endangered species and resident wildlife. Timber harvest operations will target select trees to be sold, and then removed by commercial timber and pulpwood operators. Trees may also be removed through timber stand improvement operations or by permittees when commercial sales are not feasible. Only trees needing to be removed in order to improve the forest habitat for wildlife or to restore the integrity of the forested wetlands ecosystem will be taken. Forest management operations may be conducted throughout the year, but only according to the guidelines detailed in a Forest Habitat Management Plan.

Justification: The forest management actions proposed in the Comprehensive Conservation Plan for Lake Ophelia National Wildlife Refuge are in accordance with Service guidelines for the protection, management and enhancement of habitats for wildlife populations on the Refuge. Adherence to a Forest Management Plan promotes the enhancement of habitats for both threatened and endangered species, migratory birds and resident wildlife species; promotes habitat restoration; protects cultural resources; and provides opportunities for public recreation and environmental education.

Mandatory 10- or 15-year Re-evaluation Date:_____**9/26/2015**_____

Description of Use:

Refuge Resource Research Studies
This activity will allow university students and professors, non-governmental researchers and governmental scientists access to the Refuge's natural environment to conduct both short-term and long-term research projects. The outcome of this research will result in better knowledge of our natural resources and improved methods to manage, monitor, and protect Refuge resources. The Refuge will support Service and U.S. Geological Survey research of Neotropical migrant birds, waterfowl, bottomland hardwood restoration, amphibians and reptiles, forest bats and sandhill cranes. Efforts will be made to expand partnerships with Louisiana State University and the Black Bear Conservation Committee to conduct research on the Refuge associated with the recovery of the threatened Louisiana black bear.

Availability of Resources: No additional fiscal resources are needed to conduct this use. Existing staff can administer permits and monitor use as part of routine management duties.

Anticipated Impacts of the Use: There should be no significant negative impacts from scientific research on the Refuge. The knowledge gained from the research will provide information to improve management techniques and better meet the needs of trust resource species. Impacts such as trampling vegetation and temporary disturbance to wildlife will occur, but should not be significant. A small number of individual plants or animals may be collected for further study. These collections will have an insignificant effect on Refuge plant and animal populations.

Determination (check one below):

_____ Use is Not Compatible

__X__ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility. Each request for use of the Refuge for research will be examined on its individual merit. Questions of who, what, when, where and why will be asked to determine if requested research contributed to the Refuge purposes and could best be conducted on the Refuge without significantly affecting the resources. If so, the researcher will be issued a Special Use Permit. Progress will be monitored and the researcher will be required to submit annual progress reports and copies of all publications derived from the research.

Justification. The benefits derived from sound research provide a better understanding of species and the environmental communities present on the Refuge. These benefits far outweigh any short-term disturbance or loss of individual plant and animals that might occur.

Mandatory 10- or 15-year Re-evaluation Date:_____9/26/2015_____

Literature Cited

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Schmidt, P.R. 1993. Memorandum - Information request regarding impacts of hunting on national wildlife refuges. U.S. Department of the Interior, Fish and Wildlife Service, Office of Migratory Bird Management, Washington, D.C. 7pp.

U.S. Fish and Wildlife Service. 1989. Purchase of lands for the establishment of Lake Ophelia National Wildlife Refuge, Avoyelles Parish, Louisiana. Final Environmental Assessment. Atlanta, GA.

U.S. Fish And Wildlife Service. 1998. Lake Ophelia and Grand Cote Refuge Complex Biological Update/Recommendations. Atlanta, GA.

Approval of Compatibility Determination

The signature of approval is for all compatibility determinations considered within the comprehensive conservation plan. If one of the described uses is considered for compatibility outside of the plan, the approval signature becomes part of that determination.

Refuge Manager: _____ 9/20/04
(Signature/Date)

Regional Compatibility Coordinator: _____ 26 Sep 05
(Signature/Date)

Refuge Supervisor: Louis J. Winde _____ 9/28/05
(Signature/Date)

Regional Chief, National Wildlife Refuge System, Southeast Region: _____ Acting 9-29-05
(Signature/Date)

Appendix VI. Management Methods and Priorities

PARTNERSHIPS

The Service's Partners for Fish and Wildlife program helps accomplish its mission by offering technical and financial assistance to private landowners to voluntarily restore wetlands and other fish and wildlife habitats on their land. The program emphasizes the reestablishment of native vegetation and ecological communities for the benefit of fish and wildlife in concert with the needs and desires of private landowners.

The Service also enlists the assistance of a wide variety of other partners to help restore wildlife habitat on private lands. These partners include other Federal agencies, Tribes, State and local governments, conservation organizations, academic institutions, businesses and industries, school groups, and private individuals. While not a program requirement, a dollar-for-dollar cost share is usually sought on a project-by-project basis.

Since the program's inception in 1987, these partnerships have generated significant habitat restoration accomplishments on private lands, primarily focused on the restoration of wetlands, native grasslands, stream banks, riparian areas, and in-stream aquatic habitats. These restored habitats now provide important food, cover, and water for Federal trust species including migratory birds (e.g., waterfowl, shore and wading birds, songbirds, and birds of prey) and anadromous fish, threatened and endangered species, as well as other fish, wildlife, and plant species that have experienced population declines in the recent past. Many of these projects are located near existing National Wildlife Refuge System lands, or State Wildlife Management Areas, which provide increased benefits to fish and wildlife that rely on these lands for survival.

The assistance that the Service offers to private landowners may take the form of informal advice on the design and location of potential restoration projects, or it may consist of designing and funding restoration projects under a voluntary cooperative agreement with the landowner. Under the cooperative agreements, the landowner agrees to maintain the restoration project as specified in the agreement for a minimum of 10 years.

Typical restoration projects may include, but are not limited to:

1. Restoring wetland hydrology by plugging drainage ditches, breaking tile drainage systems, installing water control structures, constructing dikes, and reestablishing old connections with waterways.
2. Installing fencing and off-stream livestock watering facilities to allow for restoration of stream and riparian areas.
3. Removing exotic plants and animals which compete with native fish and wildlife and alter their natural habitats.
4. Prescribed burning to remove exotic species and to restore natural disturbance regimes necessary for some species survival.
5. Reconstruction of in-stream aquatic habitat through bioengineering techniques.

In addition to providing restoration assistance to private landowners, the Service also provides biological technical assistance to U.S. Department of Agriculture agencies implementing key conservation programs of the Farm Bill. The Service's assistance helps the Department of Agriculture meet the technical challenges presented by these programs while maximizing benefits to fish and wildlife resources. The Service also assists in on-the-ground habitat restoration actions associated with several of these programs.

Under the Wetlands Reserve Program, conservation easements are required to protect and restore formerly degraded agricultural wetlands. The Service provides technical assistance to Department of Agriculture agencies and to private landowners on site selection, restoration planning, and compatible uses for easements offered voluntarily by interested landowners.

AVIFAUNAL ANALYSIS

Forest Breeding Birds. The goal for forest breeding birds in the Lower Mississippi Valley was to establish self-sustaining populations for all of the roughly 70 species that breed in the valley. Although habitat objectives must ultimately address both quality and quantity, the Service initially concentrated on the size and number of forest patches in this highly fragmented landscape. A six-step process was established to set habitat objectives and population goals. The Partners-in-Flight prioritization process (Hunter et al., 1993) was utilized to set breeding bird species priorities in the valley. Six of the seven highest-priority species breeding in the valley nest in bottomland hardwood forests (Table C-1). Based on this and the historical ecosystem structure of the valley, bottomland hardwood forests were selected as the highest priority habitat type for breeding bird conservation. To determine forest patch sizes, two sources of information were used: empirical studies and a mathematically derived, theoretical, genetically viable population. Empirical studies were used primarily for the swallow-tailed kite and the Cerulean warbler.

To determine the forest patch size requirements for the theoretical genetically viable populations the following formula was used:

$$A = (N \text{ c } D) + B$$

A = Area of forest patch required to support a source population
N = number reproductive units (usually breeding pairs) required for a source population
D = Breeding density (usually expressed as hectares/breeding pair)
B = The area of a one-kilometer forested buffer around the forest core (N*D).

For each of several populations, the Service adopted a proposed minimum effective population size of 500 breeding adults from the recovery plan for the red-cockaded woodpecker. For monogamous species, this constitutes 250 breeding pairs. However, establishing conservation goals at the minimum threshold seems fraught with peril. Thus, to buffer breeding populations within forest patches, a goal of 500 breeding pairs per forest patch (N=500) was adopted.

For the value of D, average breeding densities from Breeding Bird Censuses conducted in the Southeastern United States were used. Even under optimal conditions, bird density in bottomland hardwoods is determined by the frequency of occurrence of patchily distributed microhabitat features (e.g., thickets for Swainson's warblers, cypress brakes for yellow-throated warblers). To account for these habitat quality factors, it was assumed that birds rarely occur in the valley at densities as high as reported in the literature, which is an additional reason for the adoption of 500 breeding pairs per forest patch as a target population.

The agricultural matrix that dominates the valley is generally considered hostile to birds breeding within forest patches. Researchers working in fragmented landscapes have found that nest predation and parasitism were high even in large forest patches (5,000 acres) in landscapes with a low percentage of forest cover. They also have found that female brown-headed cowbirds travel an average of 2 miles between feeding and breeding sites. One researcher has found that male ovenbirds singing on territories less than 900 feet from the edge of the forest were more likely to be unpaired than males from the interior of the forest. For planning purposes, it is assumed that a 0.6-mile forest buffer surrounding an interior for-

est core will reduce these negative impacts. Only those pairs within the forest core are assumed to reproduce at a rate sufficient to serve as a source population. Because the area of a 0.6-mile buffer will vary with the geometric configuration of each forest patch, the area requirements of each will differ. For planning purposes, until the actual areas of interior forest within each forest patch are determined, doubling the core forest area (B=2) will generally result in forest patch requirements that approximate or exceed a 0.6-mile buffer around the desired interior forest area.

As an example, Swainson's warblers have been noted to occur at densities generally ranging from one pair per 6 acres to one pair to 11 acres. Taking the average of one pair per 9 acres, if Swainson's warblers occur over a large area at this density, 500 pairs will require 4500 acres. Applying the doubling factor as a surrogate for the 0.6-mile buffer produces a desired forest patch size of 9,000 acres. The Service made this calculation for all valley forest breeding species. For planning purposes, the Service placed species into three forest patch size groups designed to meet their specific area requirements: 10,000-20,000, 20,000-100,000, and >100,000 acres.

Once the aerial habitat requirements of the high priority species were determined and the existing habitat was measured using 1992 thematic mapper images, specific locations across the valley were identified for habitat protection/restoration. In addition to habitat requirements and existing forest locations, several other factors such as flooding frequency, current land use, adjacent land use, ownership, and reforestation potential were used to identify proposed habitat protection/restoration sites. Where possible, restoration sites were centered on existing public land. Where linkages could logically be created, existing forest patches were combined to reach target sizes. This sometimes resulted in several existing 10,000- or 20,000-acre patches being combined into a proposed 100,000-acre patch.

Ultimately 101 proposed Breeding Bird Forest Patches were identified for the valley, but the number and location of these sites are not final, and probably never will be. A massive reforestation effort will be necessary to meet these objectives, and their achievement often will be opportunity driven. As new opportunities arise and old objectives become unattainable, the locations of the Breeding Bird Forest Patches will change.

Prioritized species suites were developed for Lake Ophelia National Wildlife Refuge, based on present and potential habitat (Table C-2). The Refuge is part of the Three Rivers Source Population Objective Area, one of only 13 identified 100,000-acre forest patches in the valley. High priority species for this forest patch include: Swainson's warbler, swallow-tailed kite, and cerulean warbler. For Lake Ophelia National Wildlife Refuge a target density for Swainson's warblers will be approximately one nesting pair per 9 acres. To support 4,000 pairs, assuming all acreage is suitable or optimal habitat, about 36,000 acres (without the buffer included) will be needed. However, as stated above it is risky to accept the assumption that all habitat is suitable or optimal for any priority species within a discrete habitat patch. A better assumption is that no more than half of all forested acreage is optimal or suitable (because of, e.g., ridges, within a ridge and swale topography) for this species and therefore 72,000 acres (with buffer included) may be necessary to support the population target of 4,000 pairs. This acreage requirement is well above that suggested for this species elsewhere in the valley, but where there are already larger existing forest patches Swainson's warblers occur in higher densities.

An acreage target for the Three Rivers Source Population Objective Area and Lake Ophelia National Wildlife Refuge at 100,000 acres or more of bottomland hardwoods will be established in the hope that eventually Cerulean warblers and some swallow-tailed kites may recolonize the area. As efforts continue to expand forested acreage, increasing densities from 6 to 9 pairs/100 acres may be an appropriate population objective. Reproductive data collection should also be undertaken to measure whether nesting success and fledgling survival change accordingly for this and other species on the above list.

Food is assumed to be the limiting factor for both southbound migrating shorebirds and wintering waterfowl. Following this assumption, the amount of energy required to support one bird for one day, the length of each bird's stay in the valley (wintering or transient), was calculated along with the amount of energy available from potential food sources.

$$H = \frac{P \text{ c } S \text{ c } E}{C \text{ c } F}$$

H = Amount of habitat (hectares)
P = Population goal (number of birds)
S = Length of stay in the Lower Mississippi Valley (days)
E = Energetic requirement of one bird for one day (kilojoules [kJ])
K = Energetic value of food source (kJ/g)
F = Available food (g/ha)

With some adjustments, this formula was used to calculate the amount of habitat needed to support the target populations of shorebirds and waterfowl.

Transient Shorebirds. Typically, mudflat foraging habitat is abundant in the valley during the spring northward migration. In early spring the agricultural fields are bare and winter flood water is receding; in late spring rice fields are flooded. During southward migration, in late summer and fall, fields of maturing crops are dry. Therefore, the period from July 15 to September 30 is the period when foraging habitat for migrating shorebirds is least available. The objective is to ensure that adequate shallow water habitat is available in the valley to meet the foraging requirements of the species during their southward migration.

Neither census data nor any specific estimates of shorebird populations moving through the valley during southward migration currently exist. To establish such an estimate, we examined data from the International Shorebird Survey and consulted shorebird biologists (D.L. Helmers and B.A. Harrington) with knowledge of migration patterns and continental population estimates. Based on these sources, about 500,000 shorebirds are estimated to move through the valley during fall migration.

Shorebirds using the valley range in size from 30 to 200 grams (g). The average shorebird mass (weighted by abundance) is 45 g A 45-g shorebird requires 102.77 kilojoules .kJ)/day to maintain its existing metabolic rate. For the purpose of modeling, we assumed that chironomids are the primary food item consumed by shorebirds. A gram of chironomids has a gross energy content of 23.8 kJ. Because the assimilation efficiency of birds feeding on invertebrates is approximately 73 percent, the net energy content of chironomids in about 17.6 kJ/g Thus a 45-g. shorebird requires about 6 g/day (102.77/17.6 = 5.84) of invertebrate forage to maintain its body mass.

In addition, to provide the fat reserves necessary to complete migration, shorebirds must gain about one g/day. About 2 g of invertebrate forage must be consumed each day to increase biomass by 1 g The daily food requirement then becomes about 8 g.

We used estimates of 2 g/square meter for invertebrate food density and a 10-day stopover period for each shorebird migrating south through the Lower Mississippi Valley (D.L. Helmers, pers. comm.). The overall habitat objective for shorebird foraging habitat during southward migration is 5,000 acres. The 5,000-acre goal was distributed among valley states based on their ability to provide managed mudflat habitat during the fall migration period.

For Lake Ophelia National Wildlife Refuge, specifically, present and projected future Refuge capabilities suggest that habitat should be provided to support 4,000 shorebird forage use-days during the period of fall migration, July 15 through September 30.

Wintering Waterfowl. The valley-wide goal for waterfowl is to provide enough habitat to support 4.3 million wintering ducks and 1.0 million wintering geese. The duck goal was derived from goals of the North American Waterfowl Management Plan by determining the proportion of the continental wintering population found in the valley and then multiplying the continental breeding population goal by this proportion. Duck population levels from the 1970s were used as the basis for this goal because those levels are believed to be high enough to maintain huntable populations yet attainable in today's social and economic environment. The goose population goal was derived from the number of geese observed in the valley during the mid-winter waterfowl inventories in the mid-1980s, a period when most goose populations in the Mississippi Flyway were at or near historic high levels.

As with shorebirds, it is assumed that food is the limiting factor on wintering populations. The energy value and availability of various foods (soybean, rice, corn, moist soil, and bottomland hardwood forest) were calculated, and the daily energy requirement of a female mallard (292 kilocalories/day) was used. The wintering period for waterfowl is 120 days.

Approximately 650,000 acres of foraging habitat and an additional 625,000 acres of naturally flooded habitat are needed to support the wintering waterfowl population goal. Within each State habitat objectives are divided between public and private ownership, managed and unmanaged lands, and three foraging habitats: bottomland hardwood forests, moist soil, and agricultural fields. The availability of waterfowl foraging habitat depends on adequate precipitation and the resultant ponding or overbank flooding, and water control infrastructure (levees, dikes, water control structures, pumps) to facilitate flooding.

The North American Waterfowl Management Plan and Mississippi Flyway Plans target Lake Ophelia National Wildlife Refuge to provide dependable seasonal flooding on approximately 1,200 acres in a core waterfowl sanctuary capable of supporting approximately 2.5 million duck-use days. Several hundred thousand additional duck-use days should be provided in other non-sanctuary areas of the Refuge.

ARCHAEOLOGICAL AND HISTORIC RESOURCE PROTECTION

With the enactment of the Antiquities Act of 1906, the Federal Government recognized the importance of cultural resources to the national identity and sought to protect archaeological sites and historic structures on those lands either owned, managed, or controlled by the United States. The body of historic preservation laws has grown dramatically since 1906. Several themes are consistently present in the laws and the promulgating regulations. They include: 1) each agency to systematically inventory the "historic sites" on their holdings and to scientifically assess each site's eligibility for the National Register of Historic Places; 2) consideration of impacts to cultural resources during the agency's management activities and seek to avoid or mitigate adverse impacts; 3) protection of cultural resources from looting and vandalism to be accomplished through a mix of informed management, law enforcement efforts, and public education; and 4) the increasing role of consultation with groups, such as Native American tribes and African American communities, to address how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups. The objectives and strategies below outline the Service's attempt to achieve mandated historic preservation responsibilities in a manner consistent with its mission and the Refuge's mission.

The Fish and Wildlife Service Regional Archaeologist coordinates a Memorandum of Understanding with pertinent Federal and State agencies, such as the Louisiana Fish and Game Commission, to enhance

law enforcement of the Archaeological Resources Protection Act, the Native American Grave Protection and Repatriation Act, and Section 50 of the Code of Federal Regulations as well as to facilitate investigations of the Archaeological Resources Protection Act violations and unpermitted artifact collection on the Refuge.

A review of the State Site Files located at the Louisiana Division of Archaeology has provided preliminary information on the known or potential archaeological sites and historic structures within and near the Refuge. Such information will aid the Service in the development of a long-term management plan for cultural resources. A comprehensive Refuge-wide archaeological survey is recommended so that the Service's management options can be fully realized in a cost-effective manner. The survey will provide a site predictive model based upon the region's cultural history, known site distribution, oral history interviews, historic documents, historic land use patterns, topography, geomorphology, soils, hydrology, and vegetative patterns.

ECOSYSTEM MANAGEMENT

Healthy habitats are necessary to sustain fish, wildlife, and plants on lands in the system. In the past, the administrative boundaries of national wildlife refuges have often bounded the scope of planning and policy decisions. The Service develops conservation strategies at two spatial levels in a collaborative process to solve broad scale ecological problems. Within a large spatial level, the Service has developed a cross-program approach for the Lower Mississippi Valley considering issues within the ecological, political, and social boundaries. The Lower Mississippi River Ecosystem Team focuses on landscape problems affecting fish and wildlife resources and provides specific guidance that will best serve trust species and species of concern and reduce impacts associated with forest fragmentation. At a smaller spatial level, the Comprehensive Conservation Planning team reflects the conservation strategies for national wildlife refuges within the ecosystem and identifies select area species on which to focus management efforts. Ecosystems are communities of living organisms interacting among themselves and with the physical component of their environment. Ecosystems are experiencing increasing impacts from human activities, the threat of which will require extraordinary flexibility and innovation to successfully conserve and manage them. In recent years conservationists have fostered the idea that resource conservation can best be achieved by taking a holistic approach to management. The Service is working with divergent interests on ecosystem-based approaches to conserve the variety of life and its processes in the Nation's diverse ecosystem.

The Service's mission 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 has adopted an ecosystem approach to more effectively achieve this mission. Our objective is to implement consistent policies and procedures that will embrace the ecosystem approach in a "management environment" which considers the needs of all our resources in decision making. This holistic approach to fish and wildlife conservation will enable the Service to more efficiently and effectively maintain healthy ecosystems on a long-term basis and to conserve the Nation's rich biological heritage.

An ecosystem approach to fish and wildlife conservation means protecting or restoring the function, structure, and species composition of an ecosystem while providing for its sustainable socioeconomic use. It involves recognizing that, in some way, all things are connected. The ecosystem approach emphasizes conservation and management of discrete land units, watersheds, or ecosystems and requires the identification of ecosystem goals that represent resource priorities on which all programs of the Service will collectively focus their efforts. The Service must work closely and consistently with external partners, public and private, who share responsibility for ecosystem health and biological diversity. This approach will enable the Service to fulfill its fish and wildlife trust responsibilities with greater efficiency and effectiveness.

In the Southeast Region, we are approaching our nationally mandated leadership role for fish and wildlife conservation on an ecosystem basis, partnering with other Service regions, with other Federal agencies, with Sates and their local governments and citizenry, and with non- governmental organizations. Together, we are working to achieve healthy, sustainable ecosystems that ensure a continuing legacy of abundant fish and wildlife resources for all Americans to use and enjoy.

LAND PROTECTION AND CONSERVATION

The Service acquires land and interests in lands, such as easements and management rights in lands, 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 interest 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. At Lake Ophelia National Wildlife Refuge, a team of biologists, planners, and realty specialists evaluated a myriad of factors, such as fish and wildlife resources, land use, threats to resource values, socioeconomic considerations, and cultural resources, to determine the original Refuge boundary in 1988. This plan will to protect additional habitat within the current 38,000 acre acquisition boundary as well as work with Federal, State, and Private partners to protect priority lands between the Refuge and WMA's. The acquisition of lands adjacent to Service-owned lands within the existing Refuge boundary and protection of larger contiguous forest tracts (inside or outside the current acquisition boundary) and marginal farmland, will be given the highest priority.

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. Other options may be available on a particular project such as conservation easements, leases, cooperative agreements or life-use reservations. In the latter, the owner reserves the right to live on and use part of the property for the remainder of his/her life. Owners sometimes choose to donate all or a portion of their land because of tax advantages or as a lasting memorial.

The acquisition methods that could be used by the Service within the current acquisition boundary under this alternative are described as follows:

1. *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.

2. *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 will 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 will likely be useful when: (a) most, but not all, of a private landowner's uses are compatible with the Service's management objectives, and (b) 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: (a) development rights (agricultural, residential, etc.); (b) alteration of the area's natural topography; (c) uses adversely affecting the area's floral and faunal communities; (d) private hunting and fishing leases; (e) excessive public access and use; and (f) alteration of the natural water regime.

3. *Fee Title Acquisition*
A fee title interest is normally acquired when (a) the area's fish and wildlife resources require permanent protection not otherwise assured; (b) land is needed for visitor use development; (c) a pending land use could adversely impact the area's resources, or (d) 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.

Funds for the acquisition of lands for Lake Ophelia National Wildlife Refuge will likely come from the Land and Water Conservation Fund or the Migratory Bird Conservation Fund. Sources of revenue for this fund include Federal Duck Stamp sales, Refuge entrance fees, fish and wildlife fines, import taxes on arms and ammunition, offshore oil and gas leases, and Congressional appropriations.

Lands acquired by the Service will 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 will compare favorably with current tax rates. If fully funded, the revenue sharing rate is 1 percent of the fair market value of a property. For lands purchased by the Service, the greatest of the following amounts is used to determine the annual payment amount to the parish. Payment for acquired land is computed according to whichever of the following formulas yields the greatest result: (1) three-fourths of 1 percent of the fair market value of the lands acquired in fee title; (2) 25 percent 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, will change over time in relation to the changing value of non-refuge lands.

The Service's action will result in the acquisition of up to 20,500 acres of wildlife habitat within the current acquisition boundary, through a combination of fee title purchases and /or donations from willing sellers and less-than-fee interests (conservation easements, cooperative agreements) from willing landowners and the prioritization of lands outside the current acquisition boundary for protection. 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:

1. Biological significance;
2. Existing and potential threats;
3. Significance of the area to Refuge management and administration; and
4. Existing commitments to purchase or protect land.

Based on these criteria, the lands were grouped into three priority categories: Priorities I, II, and III. Priority I lands are the highest priority for land protection. The characteristics and benefits of each priority group are described below. Figure 4-1 in the Comprehensive Conservation Plan shows a combination of the locations of the three priority groups in the conservation area.

Priority Group I - Lands within this priority group are located within the current acquisition Refuge boundary and will protect core woodland habitat contributing to the 100,000-acre SPOA.

Priority Group II - Lands within this priority group have no physical barrier between them and the core woodland area, and will provide for bear movement and additional habitat for forest-breeding birds.

Priority Group III - Lands within this priority group will provide a forested buffer and bear travel corridor, primarily along the Red River.

Table VI-1. Priority bird species for the Mississippi Alluvial Plain: entry criteria and selection rationale.[1]

Priority Entry Criteria[2]	Species	Total PIF Priority Score	Concern Scores Area Importance	Population Trend	Percent of BBS Population	Local Migratory Status[3]	Geographical or Historical Notes
Ia.	***Breeding***						
	Swainson's Warbler	29	5	3	20.8	B	
	Swallow-tailed Kite	28	4	3	25.1	E	Widespread prior to 1900
	Southeast U.S. subsp. Cerulean Warbler	28	3	4		E	Formerly breed throughout?
	Transient						
	Golden-winged Warbler	30	5	5		A	Probably more important in spring
	Winter						
	Bewick's Wren (eastern)	29	5	4		C	
Ib.	***Breeding***						
	Least Tern (Interior)	27	5	4		B	Sandbars along theMississippi
	Prothonotary Warbler	24	5	3	34.8	B	
	Painted Bunting	24	3	5	4.4	B	
	Red-headed Woodpecker	23	5	5	3.0	D	
	Bell's Vireo	23	2	3	1.0	B	
	Northern Parula	23	5	5	6.9	B	
	Worm-eating Warbler	23	2	3		B	
	Kentucky Warbler	22	3	3	4.7	B	
	Orchard Oriole	22	5	5	7.4	B	
	Yellow-billed Cuckoo	22	5	5	6.0	B	
	Wood Thrush	22	3	3	1.3	B	
	White-eyed Vireo	22	4	5	8.4	B	
	Transient						
	Stilt Sandpiper	25	4	3		A	
	Buff-breasted Sandpiper	25	4	3		A	
	Blue-winged Warbler	24	5	3		A	Probably more important in spring
	Bay-breasted Warbler	24	5	3		A	
	Bobolink	24	5	5		A	
	Canada Warbler	23	5	3		A	
	American White Pelican	22	5	1		A	
	Western Sandpiper	22	4	3		A	
	Short-billed Dowitcher	22	3	5		A	
	Black Tern	22	5	5		A	
	Veery	22	5	5		A	
	Philadelphia Vireo	22	5	3		A	
	Blackburnian Warbler	22	5	3		A	
	Palm Warbler	22	5	5		A	

Table VI-1. (Continued) Priority bird species for the Mississippi Alluvial Plain: entry criteria and selection rationale.[1]

Priority Entry Criteria[2]	Species	Total PIF Priority Score	Concern Scores Area Importance	Population Trend	Percent of BBS Population	Local Migratory Status[3]	Geographical or Historical Notes
Ib.	***Winter***						
Cont'd.	Henslow's Sparrow	26	2	4		C	
	Yellow Rail	25	3	3		C	
	Sedge Wren	23	5	2		C	
	LeConte's Sparrow	23	4	2		C	
	American Black Duck	22	3	5		C	
	American Woodcock	22	4	5		D	
	Short-eared Owl	22	3	5		C	
IIa.	***Breeding***						
	Yellow-breasted Chat	21	5	5	6.2	B	
	Northern Bobwhite	20	3	5		R	
	King Rail	20	5	3	9.4?	D	
	Eastern Wood-Pewee	20	3	5		B	
	Carolina Chickadee	20	4	5		R	
	Loggerhead Shrike	20	4	4		D	
	Field Sparrow	20	3	5		D	
	Baltimore Oriole	20	3	5		B	
	Yellow-crowned Night-Heron	19	5	3		D	
	Ruby-throated Hummingbird	19	5	3	7.3	B	
	Blue-gray Gnatcatcher	19	4	5		B	
	Transient						
	Semipalmated Sandpiper	21	4	5		A	
	Black-billed Cuckoo	21	5	3		A	
	Olive-sided flycatcher	21	5	3		A	
	Willow Flycatcher	21	5	3		A	
	Least Flycatcher	21	5	5		A	
	Chestnut-sided Warbler	21	5	3		A	
	Black-throated green Warbler	21	5	3		A	
	Mourning Warbler	21	5	3		A	
	Sanderling	20	3	5		A	
	Dunlin	19	3	5		A	
	Grasshopper Sparrow	19	3	5		A	
	Winter						
	Canvasback	21	4	4		C	
	Rusty Blackbird	21	5	5		C	
	American Bittern	20	3	5		D	
	Northern Harrier	20	4	4		C	
	Greater Yellowlegs	19	5	3		F	
	Lark Sparrow	19	3	5		C	
IIb.	Mississippi Kite	21	4	2	13.4	B	
	Wood Duck	19	5	2	9.3?	D	
	Acadian Flycatcher	20	3	2	5.6	B	
	Dickcissel	21	4	2	5.1	B	

Table VI-1. (Continued) Priority bird species for the Mississippi Alluvial Plain: entry criteria and selection rationale.[1]

Priority Entry Criteria[2]	Species	Total PIF Priority Score	Concern Scores Area Importance	Population Trend	Percent of BBS Population	Local Migratory Status[3]	Geographical or Historical Notes
IIIa.	Scissor-tailed Flycatcher	21	3	3		B	
	Chuck-will's widow	21	4	3	3.1	B	
	Prairie Warbler	20	2	3		B	
IIIb.	Bald Eagle	18	3	3		D	
IV.	Barred Owl	16	5	2	15.6	R	
	Red-shouldered hawk	17	4	2	9.8	D	
	Purple Martin	17	5	2	7.8	B	
	Carolina Wren	18	5	3	6.5	R	
	Red-bellied Woodpecker	18	5	2	6.1	R	
	Northern Cardinal	16	5	2	5.7	R	
Addendum							
a. Regional	Hooded Warbler	21	3	3		B	
	Yellow-throated Warbler	20	3	2		B	
	Yellow-throated Vireo	20	3	2		B	
	Summer Tanager	18	2	3		B	
b. State	NONE						
c. Local	American Redstart	20	3	3		B	
	Pileated Woodpecker	16	4	2		R	

[1]Taken from partners in Flight Bird Conservation Plan: Section 2 Avifaunal analysis.
[2]Entry criteria:

Ia. Overall Highest Priority Species. Species with total score 28-35. Ordered by total score. Consider deleting species with AI < 2 confirmed to be of peripheral occurrence and not of local conservation interest, but retain species potentially undersampled by BBS or known to have greatly declined during this century.

Ib. Overall High Priority Species. Species with total score 22-27. Ordered by total score. Consider deleting species with AI < 2 confirmed to be of peripheral occurrence and not of local conservation interest, but retain species potentially undersampled by BBS or known to have greatly declined during this century.

IIa. Area Priority Species. Species with slightly lower score total 19-21 with PT+AI=8+. Ordered by total score. These are overall moderate priority species.

IIb. Area Priority Species. Species with slightly lower score total 19-21 with PT+AI<8, but with high percent of BBS population (see below). These are overall moderate priority species.

IIIa. Additional Species of Global Priority. Add WatchList species (Partners in Flight-National Audubon Society priority species at national level), not already listed in either I or II, with AI=2+. Order by total score. Consider deleting species with AI=2 if confirmed to be of peripheral occurrence and not of local conservation interest, but retain if a local population is viable and/or manageable. These are also overall moderate priority species.

IIIb. Additional Federally Listed Species. Federal listed species if not already included above. Overall moderate priority, but appropriate legal obligations ("legal priority species") to protect through appropriate management and monitoring still apply. Only Bald Eagle meets this criterion in some Southeast physiographic areas.

IV. Additional Species of Area Responsibility. Species with high percent of Breeding Bird Survey (BBS) population (>5% in physiographic areas <200,000 km2, >10% in physiographic areas >200,000 km2) if not already listed above. Ordered from highest to lowest percentages, also include species with exceptionally high relative abundance (detection rates on BBS routes). These are overall low priority species, but are still designated "High Responsibility" within physiographic area primarily for general monitoring purposes but little if any directed management action.

Addendum

Local, state, or regional Interest Species. Includes game or nongame species identified by State Working Groups. Also, may include species often meeting criteria for I or II within other physiographic areas and therefore of regional interest for monitoring throughout the Southeast. These are overall low priority species within physiographic area, but may be more important within one or more States (especially where multiple states have designated some special protective status on the species).

[3] Local Migratory Status, codes adapted from Texas Partners in Flight as follows:

A = Breeds in temperate or tropical areas outside of region, and winters in temperate or tropics outsid of region (i.e., passage migrant).

B = Breeds in temperate or tropical areas including the region, and winters exclusively in temperate or tropics outside the region (i.e., includes both breeding and transient populations).

C = Breeds in temperate or tropical areas outside of region, and winters in both the region and in temperate or tropical areas beyond area (i.e., includes both transient and wintering populations).

D = Breeds and winters in the region, with perhaps different populations involved, including populations moving through to winter beyond the region in temperate or tropical areas (i.e., populations may be present throughout year, but may include a large number of passage migrants).

E = Species reaching distributional limits within the region, either as short-distance or long-distance breeding migrants, but at population levels above peripheral status.

F = Same as E except for wintering (non-breeding) migrants.

R = Resident, generally non-migratory species (though there may be local movements).

RP= Resident, non-migratory species, reaching distributional limits within the region, but at population levels above peripheral status.

P = Pelagic, breeding grounds outside of region, but can occur during breeding season.

PB = Post-breeding dispersal or non-breeding resident; species present during breeding season, but not known to be breeding in the region proper.

[4]Highest percent of breeding population recorded in temperate North America; numbers in " " are likely projections; ? indicates species widespread outside of temperate North America and/or waterbirds poorly sampled by Breeding Bird Survey within physio. area.

[5]AI or PT score revised from what was derived by BBS data, or lack thereof, based on better local information.

Table VI-2. Species suites for Lake Ophelia National Wildlife Refuge, based on present and potential habitat*

	Habitat Groups				
Priority Level	**Shrub-scrub**	**Forested Wetland**	**Prairies, Grasslands**	**Emergent Wetlands**	**Open Water, Mudfalts**
Extremely High		Swallow-tailed Kite Cerulean Warbler Swainson's Warbler			Least Tern (?)
High	Bell's Vireo White-eyed Vireo Painted Bunting Orchard Oriole	American Woodcock Yellow-billed Cuckoo Red-headed Woodpecker Wood Thrush Northern Parula Prothonotary Warbler Kentucky Warbler	Short-eared Owl Sedge Wren LeConte's Sparrow	Yellow Rail	Am. White Pelican Hudsonian Godwit Western Sandpiper Stilt Sandpiper Buff-breasted Sandpiper Short-billed Dowitcher Black Tern
Moderate	Field Sparrow Northern Bobwhite Yellow-breasted Chat	Eastern Wood-Pewee Carolina Chickadee Blue-gray Gnatcatcher Rusty Blackbird Baltimore Oriole	Northern Harrier Northern Bobwhite Loggerhead Shrike Lark Sparrow Grasshopper Sparrow	American Bittern King Rail	Yellow-crowned Night-Heron White Ibis Greater Yellowlegs Semipalmated Sandpiper Sanderling Dunlin
Local or Regional Interest	Prairie Warbler Brown Thrasher Gray Catbird Eastern Towhee	Chimney Swift Pileated Woodpecker Northern Flicker Acadian Flycatcher Great Crested Flycatcher Yellow-throated Warbler Hooded Warbler Summer Tanager	Barn Owl Eastern Kingbird Scissor-tailed Flycatcher Sprague's Pipit Dickcissel Eastern Meadowlark	Bald Eagle	Upland Sandpiper Willet

*List customized for Refuge, based on Partners in Flight-Lousiana Priority List for the Mississippi Alluvial Plain physiographic area.

Appendix VII. Public Involvement

PUBLIC INVOLVEMENT PROCESS

Public involvement in the development of the Comprehensive Conservation Plan and Environment Assessment for Lake Ophelia National Wildlife Refuge, located in Avoyelles Parish, Louisiana, was sought throughout the planning process. A planning team (Table VII-1) composed of representatives from various Service divisions was formed to prepare the Draft CCP and Environmental Assessment. Initially, the team focused on identifying the issues and concerns pertinent to Refuge management. The team met on several occasions from August 1997 to January 2004. During this period, the team sought the contributions of experts (Table VII-2) from various fields.

To expand the range of issues and to generate potential alternatives, the planning team assembled a scoping team consisting of representatives from agencies and organizations (Table VII-3) concerned about the future management of the Refuge. The scoping team met on September 18, 1997. Shortly thereafter, on October 28, 1998, the planning team held a public scoping meeting to gain the insights of local citizens and their perceptions of the issues and concerns facing the Refuge.

The issues and alternatives generated from these meetings, coupled with the input of the planning team, were presented in the draft environmental assessment. Over an 8 year period, a draft plan was developed for the Refuge.

The draft plan was made available for public review, beginning April 5, 2005, and ending May 20, 2005. Individuals reviewing this document represented landowners, conservation organizations, and state and local government agencies. A flyer which announced the dates of the comment period, and the dates and locations of the public meetings to discuss the draft, was mailed along with the plans. Public meetings were held on: April 19, 2005 at 6:30 p.m., at the Natural Resources Conservation Service Office, 3737 Government Street, Alexandria, Louisiana; April 20, 2005, at 6:30 p.m., at the Cottonport Bank Camp, Marksville, LA; and April 21, 2005, at 6:30 p. m., at Ecological Services Field Office, 646 Cajundome Blvd., Lafayette, Louisiana. Sixteen individuals were in attendance at all three meetings. Ten individuals presented oral comments and eleven respondents submitted written comments by mail or email.

GENERAL

One written comment questioned the Refuge's proposed management action and suggested that alternative 3 minus ATV use of the Refuge be adopted. Most other comments supported the proposed action and appreciated the information presented in the plan. The Service believes that the selection of Alternative 2 as the proposed action best meets the purpose and goals of the Refuge. One respondent was concerned with the lack of wilderness review outlined in the CCP. Refuge planning policy requires a Wilderness review concurrent with the comprehensive conservation planning process. The Service inventoried Refuge lands within the planning area and found no areas that meet the eligibility criteria for a Wilderness Study Area as defined by the Wilderness Act. Therefore, the suitability of Refuge lands for wilderness designation was not analyzed further in this plan. One individual was concerned about the accuracy of the scoping team members listed in Table VII-3. Refuge staff checked the transcripts of the meeting that occurred on September 18, 1997, and verified this information. One written comment expressed concern that the step-down management plans were not presented and the plans will lead to mismanagement of the Refuge. The level of specificity in step-down management plans is too great for inclusion in the CCP; however, the guidelines identified in the CCP goals, objectives, and strategies will

be the overriding guidance for the development of step-down plans. The goals, objectives, and strategies presented in the CCP will allow for continuity in Refuge management regardless if there is a change in staffing or funding. Step-down management plans are also an adaptive process in which once put in place, if a problem or new information arises, the plans can be modified.

Fish and Wildlife Populations
Most comments concerning fish and wildlife populations can be addressed in specific step-down plans already in place, while other plans will need to be developed. Some of these comments dealt with methods of deer harvest, control of raccoon and hogs, and pallid sturgeon use of Refuge. One respondent requested that the Refuge work with partners to update the Louisiana Black Bear Recovery Plan. The Refuge is an active partner in Louisiana Black Bear Recovery and will continue to fully participate in this adaptive process. One individual was concerned with the declining hooded merganser population and will like to see the Refuge support nesting cavities for this species. The Refuge will provide a minimum of 75 wood duck boxes which support hooded mergansers as well as other cavity-nesting species. One individual wanted the Refuge to re-examine methods used to set waterfowl step-down objectives, especially since waterfowl use in this entire area is declining. The Refuge is an active participant in the Lower Mississippi Valley Joint Venture and habitat management objectives are set to meet waterfowl step-down objectives set forth by the Joint Venture.

Habitats
Several comments concerning invasive plant management on Refuge lakes were received. Two comments dealt with controlling the amount of vegetation with use of flooding or grass carp. Although, the two management methods cannot be used simultaneously, both ideas are noteworthy and are likely to be explored in the future through specific step-down management plans. Of course, the flooding option will entail major consultation with the Army COE, adjacent landowners, and other partners before any feasibility study could occur. Comments received on reforestation of the Refuge varied in context. One respondent believes reforestation is good but will like to see some areas maintained in shrub/cut-over habitats. Two respondents wanted like to see the entire Refuge reforested to bottomland hardwood forests and one of those comments suggested eradicating the cooperative farming program. The Refuge plans to reforest a total of 5,766 acres, maintain 2500 acres in the Cooperative farming program, and work with partners within the Three Rivers Source Population Objective Area to reforest additional areas. The Service believes the proposed action will be the most effective way to meet the purposes of Lake Ophelia National Wildlife Refuge.

Land Protection and Conservation
One respondent believed the Refuge boundary should be expanded to include regions presented in Alternative 3 in order to help meet the goal of assembling a 100,000-acre block of contiguous bottomland hardwood forest and forested corridors between these blocks. The Three Rivers SPOA, which includes Lake Ophelia National Wildlife Refuge, is a 283,204-acre area with an objective of providing 100,000 acres of bottomland hardwood forest and a core area of 84,000 acres. A core area is a contiguous block of forest that is 1 kilometer (0.62 mile) from the forest edge. Waterways within forest blocks are included in that acreage. At the present time, the Three Rivers SPOA has a core area of 80,000 acres, only 4,000 acres short of meeting the 100,000-acre block objective. Reforestation of relatively small areas in appropriate locations could easily meet this objective. The Service believes that the proposed reforestation within the current Refuge boundary and working with partners to reforest prioritized areas outside the current acquisition boundary will meet this goal. One comment requested the Refuge participate in the Spring Bayou Restoration Project. The Service supports this landscape level watershed management endeavor and will participate as appropriate.

Education and Visitor Services
Most comments concerning visitor services can be addressed in specific step-down plans already in place, while other plans will need to be developed. Some respondents will like the Refuge to allow more archery deer hunting days or areas targeted specifically for bow hunters, and elimination of gun hunting all together. One comment supported adding a riffle gun hunting season. One respondent did not want any hunting to occur on the Refuge. One respondent will like to eradicate ATV trails from the Refuge while one respondent did not support the addition of ATV trails or converting trails to vehicle access. Harvest management strategies are designed for multiple user groups within certain population parameters. The Service will try to balance the needs of different user groups recognizing that all needs may not be met.

One comment requests the Refuge to allow mountain bikes to access hunting areas. The use of mountain bikes is something the Refuge will explore in the future. One respondent does not want the Refuge to allow firearm hunters to place deer stands within 100 yards of private property or place parking lots any closer than 200 yards from private property. The Service encourages hunters to be ethical and respectful of other hunters and private property owners and thus be courteous of stand placement. The Refuge will carefully place new parking lots to minimize wildlife disturbances and conflicts with adjacent landowners. Comments were received regarding vehicular access and road construction. Increase in the speed of vehicles and wildlife-related vehicle accidents and fiscal feasibility are a few reasons the Service decided to use gravel instead of pavement.

Table VII-1: Lake Ophelia National Wildlife Refuge Comprehensive Conservation Planning team members and list of preparers.

Ray Aycock, *Supervisory Wildlife Management Biologist (former)*,
Wildlife and Habitat Management Office, Jackson, Mississippi

John Earle, *Refuge Operations Specialist (former),*
Lake Ophelia National Wildlife Refuge Complex, Marksville, Louisiana

Dave Erickson, *Refuge Planner (former),*
Southeast Regional Office, Atlanta, Georgia

Mike Esters, *Acting Refuge Manager (former),*
Lake Ophelia National Wildlife Refuge Complex, Marksville, Louisiana

John Forester, *Fisheries Biologist,*
Baton Rouge Fisheries Assistance Office, Baton Rouge, Louisiana

Jennifer Harris, *Refuge Planner (former),*
Southeast Regional Office, Atlanta, Georgia

Dennis Sharp, *Project Leader (former),*
Lake Ophelia National Wildlife Refuge, Marksville, Louisiana

Eric Smith, *Refuge Manager (former),*
Central Louisiana National Wildlife Refuge Complex, Marksville, Louisiana

Donna Stanek, *Outdoor Recreation Planner (former),*
Lower Mississippi Valley Ecosystem, Crossett, Arkansas

Bob Strader, *Supervisory Wildlife Management Biologist (current),*
Wildlife and Habitat Management Office, Jackson, Mississippi

David Walther, *Wildlife Biologist,*
Lafayette Ecological Services Office, Lafayette, Louisiana

Mike Chouinard, *Project Leader (current),*
Central Louisiana National Wildlife Refuge Complex, Marksville, Louisiana

Tina Chouinard, *Natural Resource Planner (current),*
Central Louisiana National Wildlife Refuge Complex, Marksville, Louisiana

Richard Crossett, *Refuge Biologist (current),*
Central Louisiana National Wildlife Refuge Complex, Marksville, Louisiana

Ben Mense, *Deputy Project Leader (former),*
Central Louisiana National Wildlife Refuge Complex, Marksville, Louisiana

Kathleen Schmidt, *Mangi Environmental,*
McLeon, Virginia.

Table VII-2: Expert contributors to the Lake Ophelia National Wildlife Refuge Comprehensive Conservation Plan and their areas of expertise.

Name	Field of Expertise
Blaine Elliott, Cartographer, U.S. Department of the Interior, Fish and Wildlife Service, Lower Mississippi Valley Joint Venture Office, Vicksburg, Mississippi	Geographical information system, cartography
Pete Jerome, Refuge Supervisor, U.S. Department of the Interior, Fish and Wildlife Service, Refuges, Southeast Regional Office, Atlanta, Georgia	
Frank Bowers, Supervisory Wildlife Biologist, U.S. Department of the Interior, Fish and Wildlife Service, Wildlife and Habitat Management, Southeast Regional Office, Atlanta, Georgia	Wildlife management, ecosystem management
Michael Jordan, District Conservationist, U.S. Department of Agriculture, Natural Resources Conservation Service, Avoyelles Parish, Marksville, Louisiana	Soil and water conservation, Federal land conservation programs
Dexter Soileau, Law Enforcement Officer, U.S. Department of the Interior, Fish and Wildlife Service, Lake Ophelia National Wildlife Refuge Complex, Marksville, Louisiana	Wildlife law enforcement, visitor protection
Chuck Hunter, Migratory Bird Biologist, U.S. Fish and Wildlife Service, Atlanta, Georgia	Migratory bird management
Richard Crossett, Wildlife Biologist, Lake Ophelia National Wildlife Refuge, Marksville, Louisiana	Geographic information system, maps, and figures
Anita Goetz, Private Lands Biologist, U.S. Fish and Wildlife Service, Ecological Services, Lafayette, Louisiana	Research and writing on affected environment
Richard Kanaski, Regional Archaeologist, U.S. Fish and Wildlife Service, Savannah, Georgia	Research and writing on cultural resources
Dr. Bob Gramling, Sociologist, Delta Research Corporation, Layfayette, LA	Research and writing on socioeconomic environment and effects

Table VII-3: Lake Ophelia National Wildlife Refuge Scoping Team members.

Catherine Bordelon, Avoyelles Wildlife Federation, Marksville, Louisiana

Don Brouillette, U.S. Department of Agriculture, Consolidated Farm Services Agency, Marksville, Louisiana

Wilbert Carmouche, Avoyelles Parish Office of Tourism, Marksville, Louisiana

Dave Fruge, Supervisory Wildlife Biologist, Lafayette Ecological Services Office, Lafayette, Louisiana

Louis Gros, Avoyelles Soil and Water Conservation District, Marksville, Louisiana

Sidney Joffrion, Avoyelles Wildlife Federation, Marksville, Louisiana

Vicki Joffrion, Avoyelles Wildlife Federation, Marksville, Louisiana

Albin Lemoine, Avoyelles Parish School Board, Marksville, Louisiana

Stuart McLane, U.S. Department of Defense, U.S. Army Corps of Engineers Vicksburg District, Vicksburg, Mississippi

Roderick Scott, Office of U.S. Senator Mary Landrieu, Alexandria, Louisiana

Kerney Sonnier, Louisiana Department of Wildlife and Fisheries, Opelousas, Louisiana

Bob Stewart, Office of U.S. Congressman John Cooksey, Alexandria, Louisiana

Appendix VIII. Budget Requests - Refuge Operating and Maintenance Needs

Table VIII-1. Lake Ophelia National Wildlife Refuge operating and maintenance needs.

Project Number	CCP Project Description Number	Project Description	Cost Estimate ($1000's)
Fish and Wildlife Populations			
RONS00012	1	Conduct Science-based Inventory and Monitoring of Plant and Animal Populations	127
RONS00013	3	Control Invasive feral swine	41
RONS00014	1	Amphibian and retile survey	51
RONS00014	1	Develop GIS capabilities for wetland restoration within Refuge	25
Habitats			
MMS01003	5	Replace John Deere Tractor	78
MMS98004	9	Replace military road grader	181
MMS01008	5	Replace 1991 Alamo bushhog	13
MMS04001	5	Replace Mower	17
MMS01004	9	Replace Tractor	91
MMS01006	9	Replace Backhoe	64
MMS01005	9	Replace Dozer	101
MMS01009	9	Replace Disk	17
MMS01002	9	Replace Grader	180
MMS01001	9	Replace D-7 Dozer	213
RONS00001	5	Improve Deteriorating Water Mgmt. Capabilities	44
RONS98019	6	Develop Forest Habitat Mgmt Program	151
RONS97002	5	Equipment to Maintain Water Mgmt Infrastructure	230
RONS02002	5	Expand Refuge moist soil and farming activities	165
RONS00006	8	Plan and implement wetland restoration within Refuge	151
RONS98014	4	Improve early water capabilities	65
RONS98015	4	Improve water mgmt. in individual swales	69
RONS02001	4	Improve water capabilities on Refuge	65
RONS98016	4	Improve water delivery system	44
RONS00007	6	Develop forest habitat mgmt program	127
Land Protection and Conservation			
RONS00007	14	Conduct Comprehensive Archaeological Survey	123
RONS97006	13	Conduct boundary surveys	60

Table VIII-1. (Continued) Lake Ophelia National Wildlife Refuge operating and maintenance needs.

Project Number	CCP Project Description Number	Project Description	Cost Estimate ($1000's)
Education and Visitor Services			
MMS00017	19	CN Lake Long Rd (Rte 10, 10 mi.)	$418
MMS00016	15	Improve Refuge Directional and Interpretive Signage	$76
MMS00031	16	Construct Fishing and Wildlife Observation Access – Duck Lake	136
MMS00018	16	Construct wildlife and observation interpretive facilities in Possum Bayou	75
MMS00017	16	Construct wildlife/waterfowl observation area	85
MMS00026	17	Improve Lake Ophelia Fishing Access	220
MMS00011	20	Reconstruct Duck Lake Road	862
MMS00009	19	PE Bucks Road	50
MMS00006	21	PE First Crossing Road	50
MMS93021	21	Reconstruct Shop Road	1278
MMS00008	21	Reconstruct First Cross Levee Road	217
MMS00007	21	Reconstruct Gravel Bayou Jeansonne Road	381
MMS00010	21	Reconstruct School Road	258
MMS00012	20	Reconstruct Westcut Lake Road	327
MMS00005	21	Rehabilitate Ramp Road	327
MMS00009	19	CN/CE Bucks Road	1205
MMS00006	21	CN/CE First Crossing Road	678
MMS00017	19	Reconstruct Lake Long Road	52
RONS00004	18	Improve Boat Access at Red River Cut-off	98
RONS00009	15	Staffing to Support Visitor Services	99
RONS02003	15	Enhance public use opportunities	40
Refuge Administration			
MMS01011	24	Replace 1998 Dodge	31
MMS03004	24	Replace 1996 Honda ATV	9
MMS03003	24	Replace 1991 Honda ATV	7
MMS03001	24	Replace 1992 Honda ATV	7
MMS03002	24	Replace 1993 Honda ATV	7
MMS98005	24	Replace 1998 Blazer	28
MMS01016	24	Replace 1985 GMC	40
MMS01018	24	Replace 2001 GMC ½ ton truck	31
MMS01017	24	Replace 2001 ¾ ton truck	31
MMS01019	24	Replace 2001 Sterling dump truck	103
MMS03005	24	Replace 2003 Chev Truck	31
MMS03006	24	Replace 2002 Tahoe	31
MMS03007	24	Replace 2002 Sterling Truck tractor	94
MMS98016	24	Replace boat	27
RONS03000	22	Provide Refuge Officer	133

Appendix IX. Finding of No Significant Impact

Lake Ophelia National Wildlife Refuge
Comprehensive Conservation Plan
Avoyelles Parish, Louisiana

INTRODUCTION

The U.S. Fish and Wildlife Service proposes to protect and manage certain fish and wildlife resources in Avoyelles Parish, Louisiana, through the Lake Ophelia National Wildlife Refuge (Refuge). An Environmental Assessment has been prepared to inform the public of the possible environmental consequences of implementing the Comprehensive Conservation Plan for Lake Ophelia National Wildlife Refuge. A description of the alternatives, the rationale for selecting the preferred alternative, the environmental effects of the preferred alternative, the potential adverse effects of the action, and a declaration concerning the factors determining the significance of effects, in compliance with the National Environmental Policy Act of 1969, are outlined below. The supporting information can be found in the Environmental Assessment.

ALTERNATIVES

In developing the Comprehensive Conservation Plan for Lake Ophelia National Wildlife Refuge, the Fish and Wildlife Service evaluated four alternatives: Alternatives 1, 2, 3, and 4.

The Service adopted Alternative 2, the "Preferred Alternative," as the plan for guiding the direction of the Refuge for the next 15 years. The overriding concern reflected in this plan is that wildlife conservation assumes first priority in refuge management; wildlife-dependant recreational uses are allowed if they are compatible with wildlife conservation. Wildlife dependent recreation uses (hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation) will be emphasized and encouraged.

Alternative 1. No Action Alternative

Alternative 1 represents no change from current management of the Refuge. Under this alternative, 17,525 acres of Refuge lands would be protected, maintained, restored, and enhanced for resident wildlife, waterfowl, Neotropical migratory birds, and threatened and endangered species. Refuge management programs would continue to be developed and implemented with little baseline biological information. All Refuge management actions would be directed toward achieving the Refuge's primary purposes (preserving wintering habitat for mallards, pintails, and wood ducks; providing production habitat for wood ducks; and helping to meet the habitat conservation goals of the North American Waterfowl Management Plan), while contributing to other national, regional, and State goals to protect and restore shorebird, Neotropical breeding bird, woodcock, and Louisiana black bear populations. Cooperative farming would continue to be used to manage and maintain approximately 3,700 acres of cropland and moist soil habitats. No active forest management (other than reforestation of previously planted, but failed, sites) would occur. The current level of wildlife-dependent recreation activities (hunting, fishing, and wildlife observation and photography, environmental education and interpretation) opportunities would be maintained. Under this alternative, the Refuge would continue to seek acquisition of all willing seller properties within the present acquisition boundary.

Alternative 2.
The preferred alternative, Alternative 2, is considered to be the most effective management action for meeting the purposes of the Refuge by conserving wetlands and migratory waterfowl while reducing forest fragmentation. The preferred alternative would add more staff, equipment, and facilities and seeks to conduct extensive wildlife population monitoring/surveying in order to assess population status, trends, wildlife habitat associations, and population responses to habitat management. The intensive management of habitats is expected to provide a wide variety of habitat elements that will in turn sustain a richer variety of flora and fauna through their life cycles. This proposed management will benefit not only waterfowl, but also shorebirds, Neotropical migratory and upland birds, fishery resources, reptiles, amphibians, threatened and endangered species, especially the Louisiana black bear, and resident wildlife species. The preferred alternative also calls for intensive efforts to forge partnerships to attain Refuge goals such as identifying lands of conservation priority and working with partners to contribute to the 100,000-acre forest block objective for the Three Rivers Source Population Objective Area. The six priority wildlife-dependent recreational uses will continue to be supported and will be expanded throughout the Refuge under the preferred alternative. This alternative will also strengthen the close working relationship in existence between the Service, the local community, conservation organizations, the Louisiana Department of Wildlife and Fisheries, and other State and Federal agencies.

Alternative 3.
The primary focus under Alternative 3 would be to add more staff, equipment, and facilities in order to maximize bottomland hardwood forest restoration in support of migratory birds and other wildlife. Under this alternative, 17,525 acres of Refuge lands would be protected, maintained, restored, and enhanced for resident wildlife, waterfowl, migratory nongame birds, and threatened and endangered species. Additionally, the acquisition boundary would be expanded (77,000 acres) to create forested linkages with the State of Louisiana's Spring Bayou and Grassy Lake Wildlife Management Areas. The primary purpose for this expansion would be to provide a bottomland forest system of sufficient size and carrying capacity to reach regional objectives associated with area-sensitive Neotropical migratory birds, Louisiana black bear, forest-associated waterfowl, woodcock, and wetland forest landscapes. Extensive wildlife and plant censuses and inventory activities would be initiated to obtain the biological information needed to implement management programs on the Refuge. Most Refuge management actions would be directed toward creating and managing the largest possible amount of interior and corridor forest habitat (for Louisiana black bear, Neotropical migratory songbirds, and other interior forest wildlife) and reducing forest fragmentation, while supporting the Refuge's primary purpose; and help meet the habitat conservation goals of the North American Waterfowl Management Plan) with the smallest possible commitment in land resources. Cooperative farming would be eliminated. Agricultural acreage would be reduced to 240 acres; all farming would be conducted by Refuge staff. A forest management plan, designed to address this alternative's primary goals by creating spatially and specifically diverse woodlands, would be developed and implemented. High quality wildlife-dependent recreation activities (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) opportunities would increase.

Alternative 4.
The primary focus under Alternative 4 would be to add more staff, equipment, and facilities in order to restore the Refuge's wetland hydrology in support of migratory birds, particularly waterfowl and shorebirds. Cooperative farming would be maintained to provide more waterfowl habitat. A forest management plan, designed to address this alternative's forest management goals of creating spatially and specifically diverse woodlands (with no negative effect to waterfowl obligations), would be developed and implemented. High quality wildlife-dependent recreation activities (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) opportunities would be provided and increased. Under this alternative, the Service would continue to seek acquisition of all willing seller prop-

erties within the present acquisition boundary. Lands acquired as part of the Refuge would be made available for compatible wildlife-dependent recreation.

SELECTION RATIONALE

Alternative 2 is selected for implementation because it directs the development of programs to best achieve the Refuge purpose and goals; emphasizes the restoration of open wetland and forest habitats; collects habitat and wildlife data; and ensures long term achievement of Refuge and Service objectives. At the same time, these management actions provide balanced levels of compatible public use opportunities consistent with existing laws, Service policies, and sound biological principles. It provides the best mix of program elements to achieve desired long term conditions.

Under Alternatives 2, all lands within the approved 38,000 acre acquisition boundary will be protected, maintained, and enhanced and lands outside the boundary will be prioritized for land protection best achieving national, ecosystem, and refuge specific goals and objectives within anticipated funding and staffing levels. In addition, the action positively addresses significant issues and concerns expressed by the public.

ENVIRONMENTAL EFFECTS

Implementation of the Service's management action is expected to result in environmental, social, and economic effects as outlined in the comprehensive conservation plan. Habitat management, population management, land conservation, and visitor service management activities on Lake Ophelia National Wildlife Refuge would result in increased migratory bird utilization and production; increased protection for threatened and endangered species; enhanced wildlife populations; bottomland hardwood forest restoration; and enhanced opportunities for wildlife dependent recreation and environmental education. These effects are detailed as follows:

1. Duck and shorebird use of the Refuge would improve significantly as intensive water management efforts would provide dependable flooded habitats to match the migration chronologies of these species. Forest breeding birds would benefit from Refuge land acquisition, reforestation, and forest management actions. Woodcock population numbers and habitat use would be monitored and managed and woodcock use of the Refuge would be expected to increase.

2. Migratory bird production would increase by enhancing forest habitat quality for Neotropical migratory birds, habitat and food availability for wintering waterfowl, and through hydrological restoration and reforestation. Forest management practices such as reforestation, selective harvests, and preservation of mature stand components would benefit nesting and feeding habitat for Neotropical migratory birds.

3. Refuge land acquisition, reforestation, and protection would benefit the recovery of threatened and endangered species. Louisiana black bear recovery efforts in the Red River/Three Rivers Source Population Objective Area would be fully supported with Refuge staff and resources. Refuge reforestation and forest management actions would provide improved habitat in support of black bear recovery efforts. Pallid sturgeon recovery efforts would be supported under Alternative 2 by habitat restoration, technical assistance to other private landowners bordering the Red River, and assistance with Service recovery efforts.

4. The Refuge's habitat mix of cropland, early success ional reforestation areas, and bottomland hardwood forest, as well as habitat management, would improve food and cover for resident wildlife species and enhance wetland communities within the refuge.

5. Habitat restoration and management, along with a focus on accessibility and facility developments, would result in improved wildlife dependent recreational opportunities. While public use would result in some

minimal, short term adverse effects on wildlife, and user conflicts may occur at certain times of the year, these effects are minimized by site design, time zoning, and implementing refuge regulations. Anticipated long term impacts to wildlife and wildlife habitats of implementing the management action are positive. In the long run, wildlife habitat and increased opportunities for wildlife dependent recreation opportunities could result in an increase in economic benefits to the local community.

6. Implementing the comprehensive conservation plan is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988, as actions would not result in development of buildings and/or structures within floodplain areas, nor would they result in irrevocable, long term adverse impacts. In fact, a major thrust of the management action is to implement bottomland hardwood forest and open wetland restoration within the wildlife communities of the refuge that has been severely impacted by actions of previous landowners. Implementing the management action would result in substantial enhancement of forest and open wetland communities and net increases to the Nation's bottomland hardwood forest and open wetland acreage and quality.

POTENTIAL ADVERSE EFFECTS AND MITIGATION MEASURES

Wildlife Disturbance

Disturbance to wildlife at some level is an unavoidable consequence of any public use program, regardless of the activity involved. Obviously, some activities innately have the potential to be more disturbing than others. The management actions to be implemented have been carefully planned to avoid unacceptable levels of impact.

As currently proposed, the known and anticipated levels of disturbance of the management action are considered minimal and well within the tolerance level of known wildlife species and populations present in the area. Implementation of the public use program would take place through carefully controlled time and space zoning such as establishment of black bear sanctuary areas, establishment of protection zones around key sites, such as rookeries and eagle nests (if necessary), closures of all terrain vehicle trails, and routing of roads and trails to avoid direct contact with sensitive areas, such as nesting bird habitat and black bear dens, etc. All hunting activities (season lengths, bag limits, number of hunters) would be conducted within the constraints of sound biological principles and refuge specific regulations established to restrict illegal or non conforming activities. Monitoring activities through wildlife inventories and assessments of public use levels and activities would be utilized, and public use programs would be adjusted as needed to limit disturbance.

User Group Conflicts

As public use levels expand across time, some conflicts between user groups may occur. Programs would be adjusted, as needed, to eliminate or minimize these problems and provide quality wildlife dependent recreational opportunities. Experience has proven that time and space zonings, such as establishment of separate use areas, use periods, and restricting numbers of users, are effective tools in eliminating conflicts between user groups.

Effects on Adjacent Landowners

Implementation of the management action would not impact adjacent or in holding landowners. Essential access to private property would be allowed through issuance of special use permits. Future land acquisition would occur on a willing seller basis only, at fair market values within the approved acquisition boundary. Lands are acquired through a combination of fee title purchases and/or donations and less than fee title interests (e.g., conservation easements, cooperative agreements) from willing sellers. Funds for the acquisition of lands within the approved acquisition boundary would likely come from

the Land and Water Conservation Fund or the Migratory Bird Conservation Act. The management action contains neither provisions nor proposals to pursue off refuge stream bank riparian zone protection measures (e.g., fencing) other than on a volunteer/partnership basis.

Land Ownership and Site Development
Proposed acquisition efforts by the Service would result in changes in land and recreational use patterns, since all uses on national wildlife refuges must meet compatibility standards. Land ownership by the Service also precludes any future economic development by the private sector.
Potential development of access roads, dikes, control structures, and visitor parking areas could lead to minor short term negative impacts on plants, soil, and some wildlife species. When site development activities are proposed, each activity will be given the appropriate National Environmental Policy Act consideration during pre construction planning. At that time, any required mitigation activities will be incorporated into the specific project to reduce the level of impacts to the human environment and to protect fish and wildlife and their habitats.

As indicated earlier, one of the direct effects of site development is increased public use; this increased use may lead to littering, noise, and vehicle traffic. While funding and personnel resources will be allocated to minimize these effects, such allocations make these resources unavailable for other programs.

The management action is not expected to have significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988.

COORDINATION
The management action has been thoroughly coordinated with all interested and/or affected parties. Parties contacted include:

All affected landowners
Congressional representatives
Governor of Louisiana
Louisiana Department of Wildlife and Fisheries
Louisiana State Historic Preservation Officer
Louisiana Department of Natural Resources, Coastal Management Division
Kisatchie Delta Regional Planning and Economic Development District
Local community officials
Interested citizens
Conservation organizations

FINDINGS
It is my determination that the management action does not constitute a major federal action significantly affecting the quality of the human environment under the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. This determination is based on the following factors (40 C.F.R. 1508.27), as addressed in the Environmental Assessment for the Lake Ophelia National Wildlife Refuge:

1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the human environment. (Environmental Assessment, pages 128-133, and page 144-146).

2. The actions will not have a significant effect on public health and safety. (Environmental Assessment, page 144).

3. The project will not significantly affect any unique characteristics of the geographic area such as proximity to historical or cultural resources, wild and scenic rivers, or ecologically critical areas. (Environmental Assessment, pages 144-146).

4. The effects on the quality of the human environment are not likely to be highly controversial. (Environmental Assessment, pages 128-133, and page 145-146).

5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment. (Environmental Assessment, pages 128-133, and page 144-146).

6. The actions will not establish a precedent for future actions with significant effects nor do they represent a decision in principle about a future consideration. (Environmental Assessment, pages 128-133, and page 144-146).

7. There will be no cumulatively significant impacts on the environment. Cumulative impacts have been analyzed with consideration of other similar activities on adjacent lands, in past action, and in foreseeable future actions. (Environmental Assessment, page 145).

8. The actions will not significantly affect any site listed in, or eligible for listing in, the National Register of Historic Places, nor will they cause loss or destruction of significant scientific, cultural, or historic resources. (Environmental Assessment, pages 144-145).

9. The actions are not likely to adversely affect threatened or endangered species, or their habitats. (Environmental Assessment, pages 128-130).

10. The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment. (Environmental Assessment, pages 144).

SUPPORTING REFERENCES

Fish and Wildlife Service. 2005. Draft Comprehensive Conservation Plan and Environmental Assessment for Lake Ophelia National Wildlife Refuge, Avoyelles Parish, Louisiana. U.S. Department of the Interior, Fish and Wildlife Service, Southeast Region.

DOCUMENT AVAILABILITY

The Environmental Assessment was Section B of the Draft Comprehensive Conservation Plan for Lake Ophelia National Wildlife Refuge and was made available in April 2005. Additional copies are available by writing: U.S. Fish and Wildlife Service, 1875 Century Boulevard, Atlanta, GA 30345.

Cynthia K. Dohner 9/30/05

Sam D. Hamilton
for Regional Director

Date