II. Affected Enviroment

See Chapter II, Draft Comprehensive Conservation Plan for Lake Ophelia National Wildlife Refuge.

III. Alternatives

FORMULATION OF ALTERNATIVES

Alternatives are different approaches or combinations of management objectives and strategies designed to achieve the Refuge's purpose and vision, and the goals identified in the CCP; the priorities and goals of the Lower Mississippi Valley Ecosystem Team; the goals of the Refuge System; and the mission on the Fish and Wildlife Service. Alternatives are formulated to address the significant issues, concerns, and problems identified by the Service and the public during public scoping.

The four alternatives identified and evaluated represent different approaches to provide permanent protection, restoration and management of the Refuge's fish, wildlife, plants, habitats and other resources. A major consideration in the formulation of the alternatives is the ability to obtain sufficient proprietary interest in lands to facilitate a physical and biological connection of bottomland hardwood forests, and to restore the functions and values of wetlands.

Refuge managers assessed the biological conditions and analyzed the external relationships affecting the Refuge. This information contributed to the development of goals and objectives and, in turn, helped to formulate the alternatives. As a result, each alternative presents different sets of objectives for reaching Refuge goals. Each alternative was evaluated based on how much progress it would make and how it would address the identified issues related to fish and wildlife populations, habitats, land protection and conservation, education and visitor services, and Refuge administration.

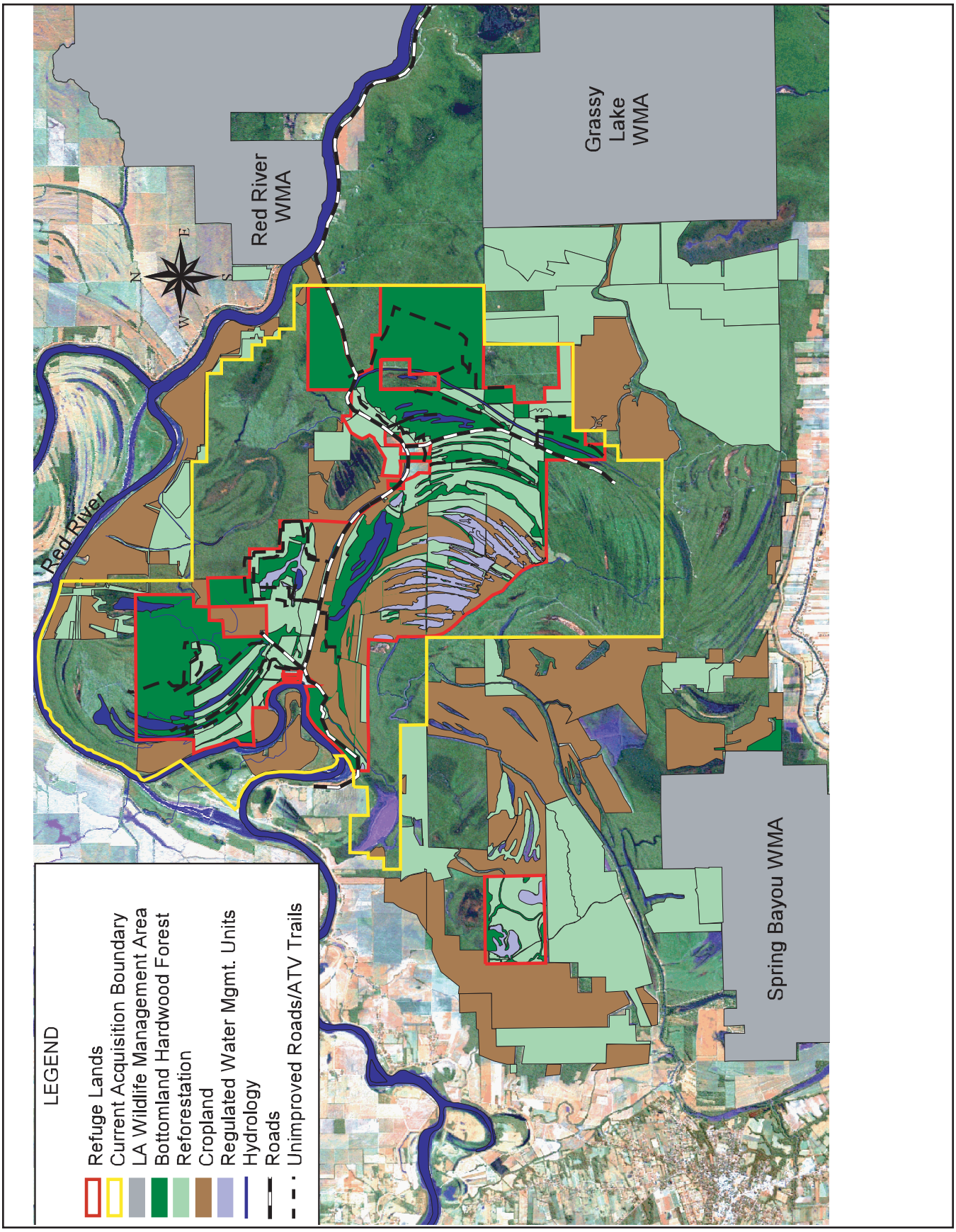
DESCRIPTION OF ALTERNATIVES

Serving as a basis for each alternative, goals and sets of objectives were developed by managers to achieve the Refuge's purpose and the mission of the Refuge System. Objectives are desired conditions or outcomes that are grouped into sets and, for this planning effort, consolidated into four alternatives. These alternatives, overall, represent a range of different management treatments or approaches for managing the Refuge over a 15-year time frame. The four preliminary alternatives are summarized below. Following the summary descriptions is Table 3-1, which depicts the goals and objectives formulated for each alternative.

ALTERNATIVE 1 - NO ACTION

This alternative represents the status quo, i.e., 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, migratory nongame birds, and threatened and endangered species (Figure 3-1). Refuge management programs would continue to be developed and implemented with little baseline biological information. All Refuge management actions would be directed toward

Figure 3-1. Alternative 1: No Action conditions on Lake Ophelia National Wildlife Refuge.



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 migratory bird, woodcock, and Louisiana black bear populations. Active habitat management would be implemented through water level manipulations, moist-soil and cropland management, and reforestation designed to provide a diverse complex of habitats that meets the foraging, resting, and breeding requirements for a variety of species. The current system of levees, 28 water control structures, and one irrigation well would be used to provide approximately 1,500 acres of seasonally flooded habitats for a variety of wetland-dependent species. Flooding would be largely dependent on rainfall. Depending on available funding, up to 50 acres of flooded habitat would be provided for early migrants.

Cooperative farming would continue to be used to manage and maintain approximately 3,678 acres of cropland and moist-soil habitats. The Refuge would receive 20 percent of crop shares left in the field, while the cooperative farmer would harvest 80 percent. 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, wildlife observation and photography, and environmental education and interpretation) would be maintained. No improvements would be made to exterior or interior access roads to provide all-weather vehicular access to a broad segment of the public. Hiking and ATV trails would continue to be provided in support of wildlife-dependent recreation to the extent that these opportunities do not interfere significantly with or detract from the achievement of wildlife conservation. No wildlife observation sites/platforms, interpretive kiosks, or restrooms would be provided. Quality hunting and fishing programs would be continued when these are consistent with sound biological principles. Fishing would be permitted in Lake Ophelia, Duck Lake, and Westcut Lake. Environmental education and outreach programs would be conducted on a reactive basis (i.e., only on request) and would not be promoted.

Under this alternative, the Refuge would continue to seek acquisition of all willing seller properties within the present acquisition boundary (Figure 3-2). Lands acquired as part of the Refuge would be made available for compatible public wildlife-dependent recreation. Purchases from willing sellers would be the preferred option to expand conservation efforts in the acquisition area. Other important options include outreach and partnerships with adjacent landowners, hunt clubs, and the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) through conservation easements, cooperative agreements, and Federal programs such as the Wetlands Reserve Program (WRP). These land conservation options would promote the linkage of bottomland hardwood forest tracts and contribute to overall natural resource conservation within the acquisition area.

ALTERNATIVE 2 - PROPOSED ACTION

The primary focus under this alternative would be to add more staff, equipment, and facilities in order to manage and restore the Refuge's forest, wetland, moist-soil habitats, and hydrology in support of migratory birds and other wildlife, especially waterfowl, Neotropical migratory birds, and Louisiana black bear. 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 (Figure 3-3). Extensive wildlife and plant censuses and inventory activities would be initiated to obtain the biological information needed to implement management programs on the Refuge. 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),

Figure 3-2. Approved acquisition area at Lake Ophelia National Wildlife Refuge.

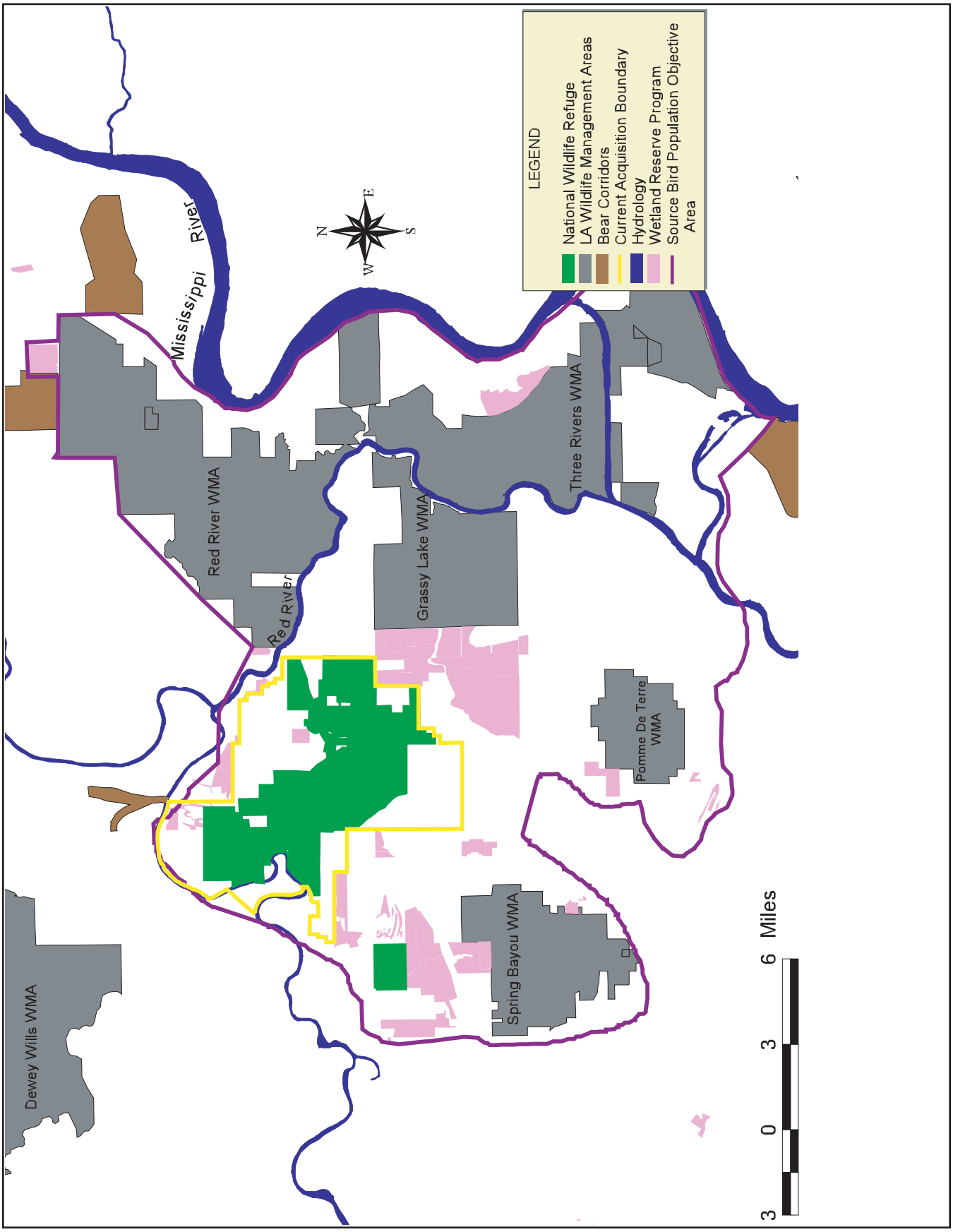
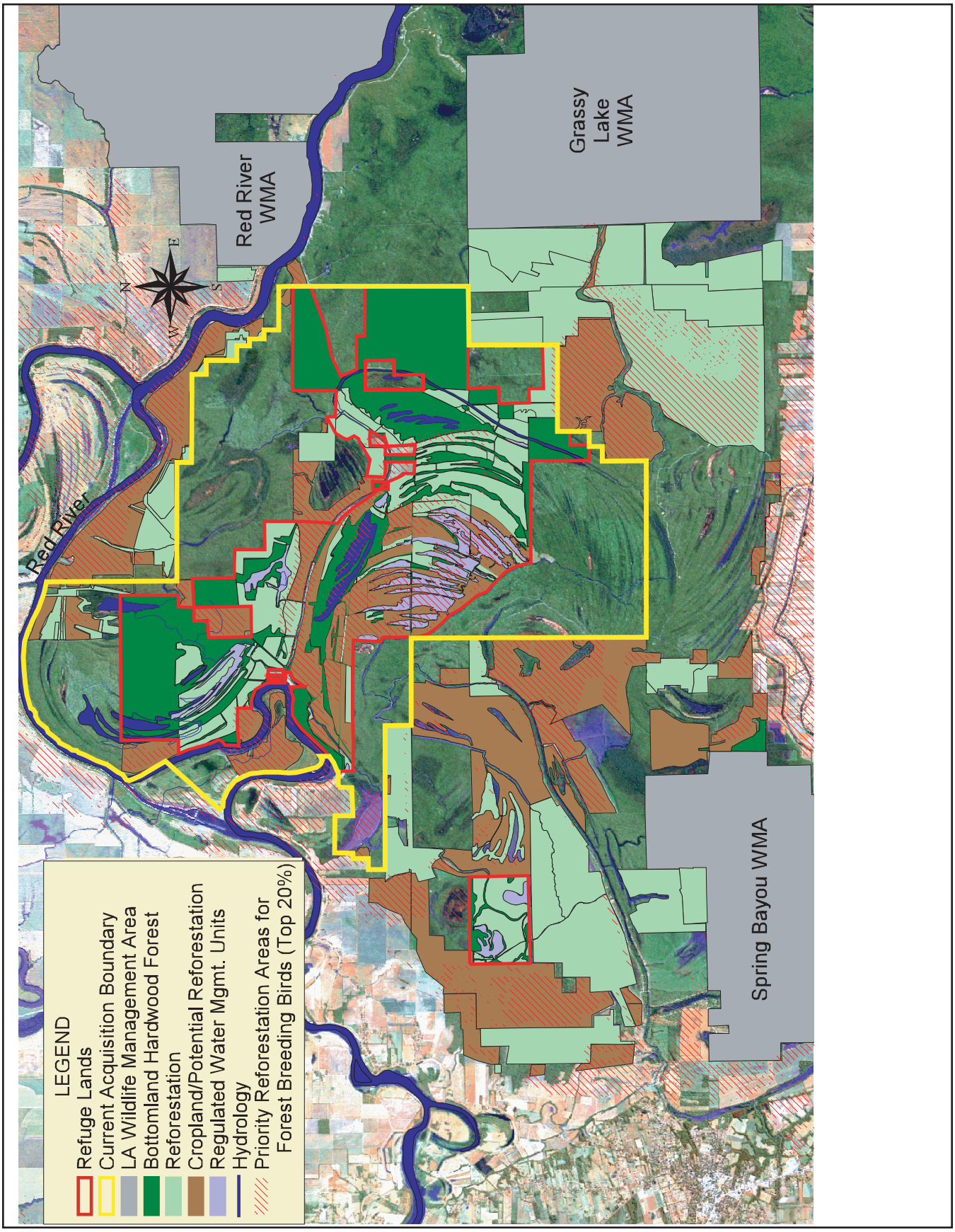


Figure 3-3. Alternative #2. Proposed action conditions on Lake Ophelia National Wildlife Refuge



while contributing to other national, regional, and State goals to protect and restore shorebird, Neotropical migratory bird, woodcock, and Louisiana black bear populations. Active habitat management would be implemented through water level manipulations, moist-soil and cropland management, reforestation, and forest management designed to provide a diverse complex of habitats that meets the foraging, resting, and breeding requirements for a variety of species. An extensive system of levees, 34 water control structures, and three irrigation wells with underground pipes would be developed and maintained in an effort to mimic historic flooding regimes and provide approximately 1,500 acres of seasonally flooded habitats for a variety of wetland-dependent species. Six new water control structures and two irrigation wells with underground pipes would be installed to provide complete water management capability on over 700 acres of moist-soil/cropland habitat.

Cooperative farming would be used to manage and maintain approximately 3,678 acres of existing Refuge cropland and moist-soil habitats. The Refuge would receive 20 percent of crop shares left in the field, while the cooperative farmers would harvest 80 percent of the crop. Cooperative farm acreage would be reduced (2,500) acres as the Figure 3-3. Alternative 2: Proposed action conditions on Lake Ophelia National Wildlife Refuge.

Refuge obtains the necessary infrastructure to support waterfowl objectives on 1,155 acres. During the 15-year life of this plan, reducing the cooperative farming program could result in the reforestation of 1,178 acres of cooperative farmland that would not be needed to meet wildlife habitat objectives. A forest management plan, designed to address this alternative's forest management goals of creating spatially and specifically diverse woodlands (with little negative effect to waterfowl objectives), 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. Improvements would be made to the Refuge's exterior and interior access roads to provide all-weather vehicular access to a broad segment of the public. Hiking and ATV trails would be provided to support wildlife-dependent recreation to the extent that these opportunities do not significantly interfere with or detract from the achievement of wildlife conservation. Wildlife observation sites/platforms; interpretive trails, boardwalks and kiosks; and restrooms would be provided at specific sites to allow fully accessible interpretation and environmental education programs. Quality hunting and fishing programs would be provided, consistent with sound biological principles. Fishing would be permitted in Lake Ophelia, Duck Lake, Westcut Lake, Possum Bayou, and Frazier-Whitehorse Lake. The Lake Ophelia Fishery would be restored. An environmental education plan, incorporating aggressive and proactive promotion of on- and off-site programs, would be developed and implemented.

Under this alternative the Refuge would continue to pursue acquisition from willing sellers within the current acquisition boundary. Equally important options to be used either within the approved acquisition boundary or outside of it include outreach and partnerships with adjacent landowners, hunt clubs, and the NRCS to use conservation easements, as well as cooperative agreements and Federal programs, such as the WRP, to link bottomland hardwood forest tracts. Under this alternative, the Refuge would continue to seek acquisition of inholdings from all willing sellers within the present acquisition boundary. Lands acquired as part of the Refuge would be made available for compatible wildlife-dependent public opportunities. Lands within the Three Rivers SPOA would be prioritized for their value in contributing to forested linkages with the State of Louisiana's Spring Bayou and Grassy Lake Wildlife Management Areas (See CCP Figure 4-1).

In order to link areas most effectively, the Refuge will work with partners to focus efforts on priority conservation areas. The primary purpose of this effort would be to work with partners to provide a bot-

tomland 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 (See CCP Figure 4-1).

ALTERNATIVE 3

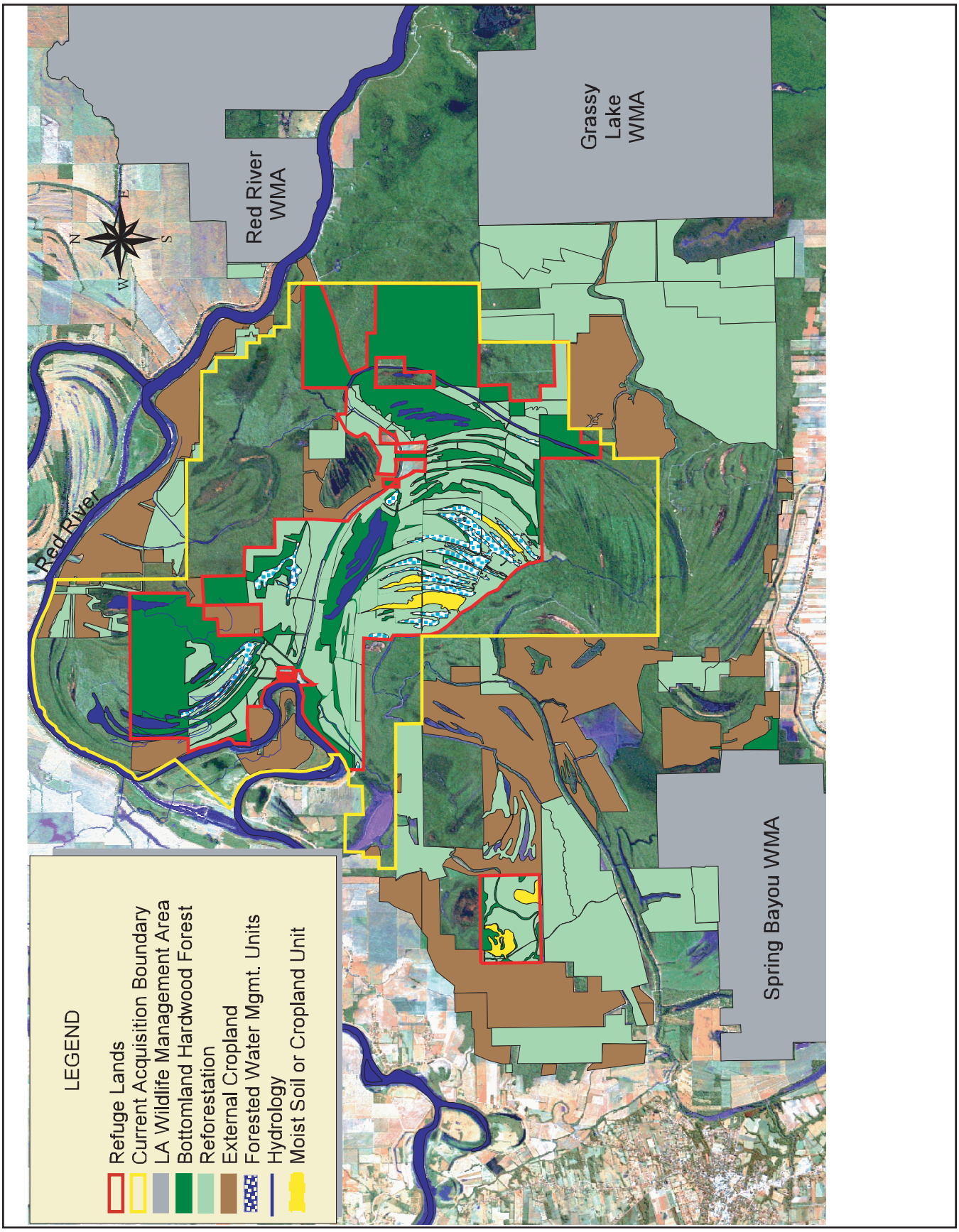
The primary focus under this alternative would be to add more staff, equipment and facilities in order to maximize bottomland hardwood forest restoration in support of migratory birds and other wildlife. Under this alternative, 17,525 acres of Refuge lands would be protected, maintained, restored, and enhanced for resident wildlife, waterfowl, migratory nongame birds, and threatened and endangered species (Figure 3-4). The current refuge acquisition boundary of 38,000 acres would be expanded to 77,000 acres (Figure 3-4). 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 birds, and other interior forest wildlife) and reducing forest fragmentation, while supporting the Refuge's primary purposes (to preserve wintering habitat for mallards, pintails, and wood ducks; to provide production habitat for wood ducks; and help meet the habitat conservation goals of the North American Waterfowl Management Plan) with the smallest possible commitment in land resources. Other national, regional, and State goals to protect and restore shorebird and woodcock populations would be supported secondarily. These habitat goals would be achieved through reforestation, intensive forest management, water level manipulations, and moist-soil and cropland management. An extensive system of levees, 28 water control structures, and one irrigation well would be utilized and maintained to provide seasonal flooding on approximately 240 acres of cropland/moist-soil habitat and 1,500 acres of bottomland hardwood forest. Flooding would be largely dependent on rainfall, with up to 50 acres pumped up to provide habitat for early migrants.

Cooperative farming would be eliminated. Agricultural acreage would be reduced to 240 acres; all farming would be conducted by Refuge staff. Eliminating cooperative farming would maximize the amount of forest, interior forest, and forested corridor habitats and minimize forest fragmentation. 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 recreational activities (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) opportunities would be provided. Improvements would be made to exterior and interior access roads to provide all-weather vehicular access to a broad segment of the public. Hiking and ATV trails would be provided to support wildlife-dependent recreation to the extent that these opportunities do not significantly interfere with or detract from the achievement of wildlife conservation. Wildlife observation sites/platforms; interpretive trails, boardwalks and kiosks; and restrooms would be provided at specific sites to allow fully accessible interpretation and environmental education programs. Quality hunting and fishing programs would be provided, consistent with sound biological principles. Fishing would be permitted in Lake Ophelia, Duck Lake, Westcut Lake, Possum Bayou, and Frazier-Whitehorse Lake. An environmental education plan, incorporating aggressive and proactive promotion of on- and off-site programs, would be developed and implemented.

Under this alternative the Refuge would continue to seek acquisition of inholdings from all willing sellers within the present acquisition boundary. Additionally, the 38,000 acre acquisition boundary would be expanded to 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

Figure 3-4. Alternative 3 conditions on Lake Ophelia National Wildlife Refuge.



with area-sensitive Neotropical migratory birds, Louisiana black bear, forest-associated waterfowl, woodcock, and wetland forest landscapes. Lands acquired as part of the Refuge would be made available for compatible wildlife-dependent public recreation opportunities. Acquisition from willing sellers would be one option used to expand conservation efforts in the expansion area. Equally important options to be used would include outreach and partnerships with adjacent landowners, hunt clubs, and the NRCS to utilize conservation easements, cooperative agreements and Federal programs such as the WRP to link bottomland hardwood forest tracts and contribute to overall wildlife, soil, and water conservation benefits within the acquisition area.

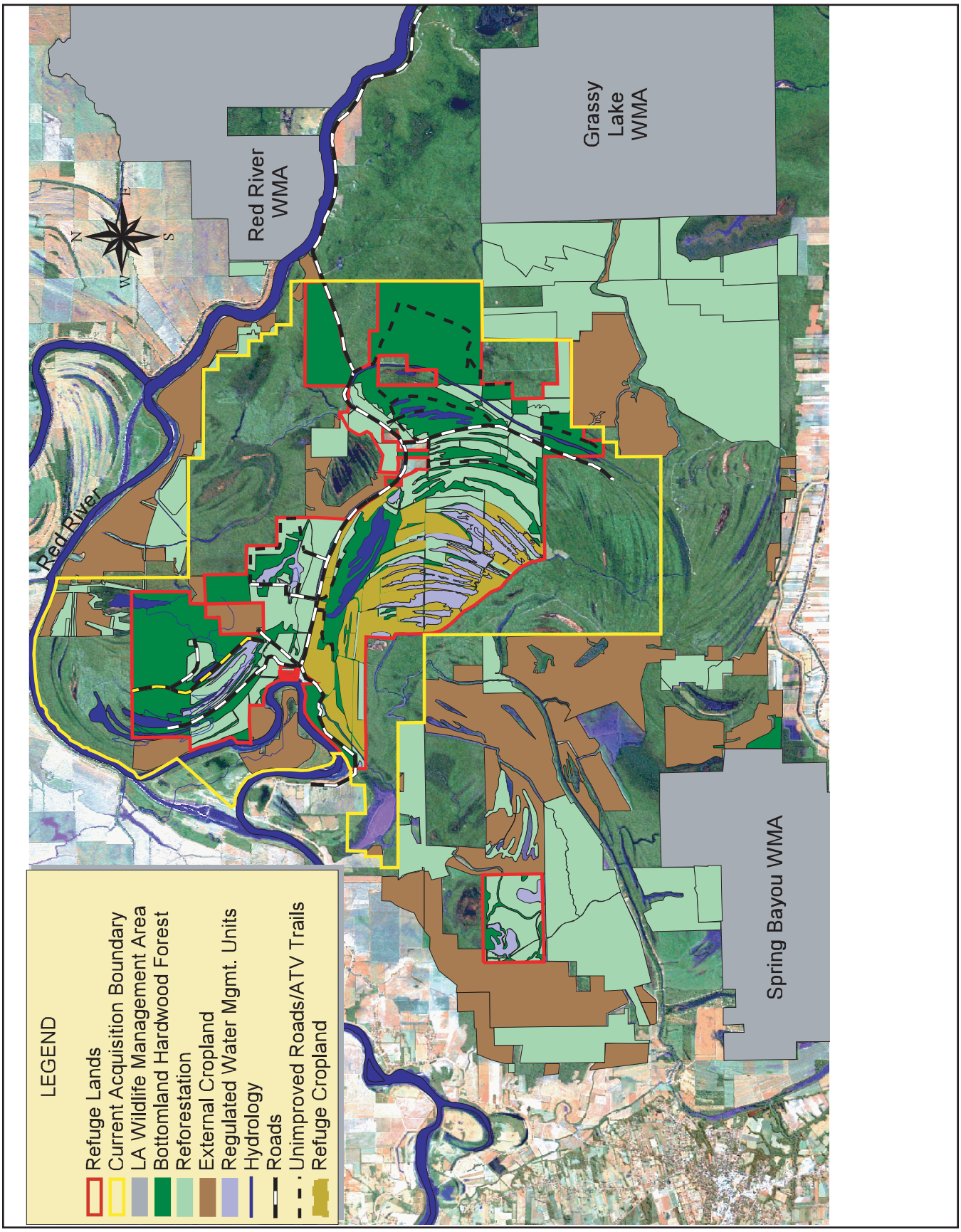
ALTERNATIVE 4

The primary focus under this alternative 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. 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 (Figure 3-5). Extensive wildlife and plant censuses and inventory activities would be initiated to obtain the biological information needed to implement management programs on the Refuge. 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 migratory bird, woodcock, and Louisiana black bear populations. Active habitat management would be implemented through water level manipulations, moist-soil and cropland management, reforestation, and forest management designed to provide a diverse complex of habitats that meets the foraging, resting, and breeding requirements for a variety of species. An extensive system of levees, 40 water control structures, and four irrigation wells with underground pipes would be maintained in an effort to mimic historic flooding regimes and provide approximately 1,500 acres of seasonally flooded habitats for a variety of wetland-dependent species. Twelve new water control structures and three irrigation wells with underground pipes would be added to the Refuge's current water management infrastructure in order to develop complete water management on approximately 1,500 acres of moist-soil, cropland, and forested wetland habitat.

Cooperative farming would be used to manage and maintain approximately 3,678 acres of existing Refuge cropland and moist-soil habitats. The Refuge would receive 20 percent of crop shares left in the field, while the cooperative farmers would harvest 80 percent of the crop. 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. Improvements would be made to exterior and interior access roads to provide all-weather vehicular access to a broad segment of the public. Hiking and ATV trails would be provided to support wildlife-dependent recreation to the extent that these opportunities do not significantly interfere with or detract from the achievement of wildlife conservation. Wildlife observation sites/platforms; interpretive trails, boardwalks and kiosks; and restrooms would be provided at specific sites to allow fully accessible interpretation and environmental education programs. Quality hunting and fishing programs would be provided, consistent with sound biological principles. Fishing would be permitted in Lake Ophelia, Duck Lake, Westcut Lake, Possum Bayou, and Frazier-Whitehorse Lake. An environmental education plan, incorporating aggressive and proactive promotion of on- and off-site programs, would be developed and implemented.

Figure 3-5. Alternative 4 conditions on Lake Ophelia National Wildlife Refuge.



Under this alternative, the Refuge would continue to seek acquisition of all willing seller properties within the present acquisition boundary. Lands acquired as part of the Refuge would be made available for compatible wildlife-dependent public recreation and opportunities. Purchases from willing sellers would be the preferred option to expand conservation efforts in the acquisition area. Other important options would include outreach and partnerships with adjacent landowners, hunt clubs, and the NRCS through conservation easements, cooperative agreements, and Federal programs such as the WRP. These alternatives would promote the linkage of bottomland hardwood forest tracts and contribute to overall natural resource conservation within the acquisition area.

MANAGEMENT COMMON TO ALL ALTERNATIVES

COMPATIBLE USES

The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, states that national wildlife refuges must be protected from incompatible or harmful human activities to ensure that Americans can enjoy Refuge System lands and waters. Before activities or uses are allowed on a national wildlife refuge, the uses must be found to be compatible. A compatible use "...will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the Refuge." "Wildlife-dependent recreational uses may be authorized on a Refuge when they are compatible and not inconsistent with public safety."

An interim compatibility determination is a document that assesses the compatibility of an activity from the time the Service first acquires a parcel of land to the time a formal, long-term management plan for that parcel is prepared and adopted. The Service has completed an interim compatibility determination for Lake Ophelia NWR for the six priority general public uses of the Refuge System, as listed in the National Wildlife Refuge System Improvement Act. These uses are hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

OTHER MANAGEMENT

All management activities that could affect natural resources, including subsurface mineral reservations, soil, water and air, and historical and archaeological resources, or that could affect utility lines and easements, would be managed to comply with all laws and regulations. The Service has a legal responsibility to consider the effects of its actions on cultural resources. Under all alternatives, the Service would manage these resources in accordance with public law and agency policy. Individual projects would require additional consultation with the Advisory Council on Historic Preservation and the State of Louisiana's Historic Preservation Office. Additional consultation, surveys, and clearance would be required where project development is conducted on the Refuge or when activities would affect properties that are listed or eligible for listing on the National Register of Historic Places.

LAND ACQUISITION

The acquisition and reforestation of marginal agricultural tracts adjacent to Service-owned lands within the Refuge acquisition boundary would be given the highest priority. All land acquisitions are subject to contaminant surveys.

Funding for land acquisition would come from the Land and Water Conservation Fund, the Migratory Bird Conservation Fund, or donations from conservation organizations. Conservation easements and leases can be used to obtain minimum interests necessary to satisfy Refuge objectives if the Refuge staff can adequately manage uses of the areas for the benefit of wildlife. The Service can negotiate manage-

ment agreements with local, State, and Federal agencies, and accept conservation easements. Some tracts within the proposed Refuge acquisition boundary may be owned by other public or private conservation organizations. The Service would work with interested organizations to identify additional areas needing protection and provide technical assistance if needed. The acquisition of private lands is entirely contingent on the landowners and their willingness to participate.

REFUGE REVENUE SHARING

Annual Refuge revenue-sharing payments to Avoyelles Parish would continue at similar rates under each alternative. If lands are acquired and added to the Refuge, the payments would increase accordingly.

EDUCATION AND VISITOR SERVICES

As the Refuge's visitor services program is developed, the staff would continue to assess the program and its potential impact on Refuge resources. Changes in the program would be implemented as needed to address any impacts identified and to respond to anticipated wildlife population increases. To ensure a quality wildlife-dependent recreation experience while achieving the "wildlife first" mandate, the number of users and conflicts among users may be limited by the following: (1) permitting uses, all year or at certain times of the year; and (2) designating roads, trails, and sites for specific kinds of wildlife-dependent recreational use

There are a number of situations where future Refuge closures or restrictions on access may be warranted. Examples of these situations include, but are not limited to, restrictions of activity to protect endangered species or nesting birds or bear den sites; to achieve specific wildlife population objectives; or to minimize conflicts with other Refuge management programs. Restrictions may also be necessitated by inadequate funds or staff to administer use.

REFUGE ADMINISTRATION

The maintenance and operation of the Refuge's administrative facilities would continue, regardless of the alternative selected. Periodic updating of facilities is necessary for safety and accessibility and to support staff and management needs. Funding needs have been identified for several projects, including providing additional facilities and equipment to support Refuge operation and maintenance.

COMPARISON OF ALTERNATIVES

Each alternative, if implemented, will accomplish the Refuge vision while addressing the issues and concerns identified by the planning and scoping teams and the general public. However, each does so in a different way (Table 3-1). These dissimilarities cause varying responses to the issues and concerns (Table 3-2).

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives.

Objective	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 1: Fish and Wildlife Populations				
Objective 1: Forest-dwelling migratory birds	The current level of limited wildlife monitoring/surveying will continue.	Extensive wildlife monitoring/surveying will occur: baseline occurrence, annual, productivity, etc.	Same as Alternative 2.	Same as Alternative 2.
Objective 2: Shorebirds	Shorebird objectives are not met during critical July 15 to October 15 time period due to inadequate water management capabilities and funding/staffing.	Will meet shorebird objectives consistently with improved water management capability and funding/staffing. Fifty acres of managed mudflat habitat will be provided to support 4,000 shorebird forage use-days from July 15 to October 15.	Will not meet shorebird and wading bird objectives consistently, due to loss of all but 240 acres of farm/moist-soil habitat.	Will meet shorebird and wading bird objectives consistently with improved water management capability and funding/staffing. Fifty acres of managed mudflat habitat will be provided to support 4,000 shorebird forage use-days from July 15 to October 15.
Objective 3: Waterfowl	The current level of limited wildlife monitoring/surveying will continue. Refuge will not contribute to State wood duck banding objectives. Fifty wood duck nest boxes will be maintained. Current habitat is capable of supporting 1.9 million waterfowl use days.	Extensive wildlife and monitoring/surveying, both ground and aerial, will occur. Refuge will contribute to State wood duck banding objectives. Seventy-five wood duck nest boxes will be maintained and monitored. Habitat will be capable of supporting 2.5 million waterfowl use days.	Same as Alternative 2, but habitat will be capable of supporting only 1.2 million waterfowl use days.	Same as Alternative 2, but habitat will be capable of supporting 3.8 million waterfowl use days.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 1: Fish and Wildlife Populations				
Objective 4: Woodcock	Current and future woodcock use will continue to be unknown.	Baseline and annual woodcock monitoring/surveying will occur. Scrub-shrub habitat management targeted at woodcock will be initiated.	Same as Alternative 2.	Same as Alternative 2.
Objective 5: Resident Species	The current level of limited resident wildlife species monitoring/surveying will continue.	Extensive wildlife monitoring/surveying will occur: baseline (occurrence), annual, productivity, etc. Key resident species population objectives will be integrated into habitat management plans.	Same as Alternative 2.	Same as Alternative 2.
Objective 6: Furbearers	The current level of limited furbearer monitoring/surveying will continue.	Extensive furbearer monitoring/surveying will occur; hunting and trapping harvest will be initiated as needed to ensure stable flora and fauna populations.	Same as Alternative 2.	Same as Alternative 2.
Objective 7: Invasive, Exotic, and Pest Plant and Animals	Current level of feral hog control will continue. An Integrated Pest Management Plan will not be developed.	An Integrated Pest Management Plan will be developed and implemented. Efforts will be initiated to eradicate or control all invasive nonnative plants and animals.	Same as Alternative 2.	Same as Alternative 2.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 1: Fish and Wildlife Populations				
Objective 8: Threatened and Endangered Species	The current level of limited wildlife monitoring/surveying will continue.	Extensive wildlife inventories will document the distribution and habitat use of all threatened and endangered species. Refuge will continue to serve as a Louisiana black bear repatriation site and provide technical support for reintroduction efforts and corridors. Refuge will also provide technical support for bald eagles, interior least tern, and pallid sturgeon recovery efforts in Refuge watershed.	Same as Alternative 2.	Same as Alternative 2.
Objective 9: Amphibians and Reptiles	The current level of limited wildlife monitoring/surveying will continue.	Extensive wildlife inventories will document species occurrence and habitat utilization. An American alligator management plan will be developed and implemented.	Same as Alternative 2.	Same as Alternative 2.
Objective 10: Fisheries	The current level of limited fisheries monitoring/surveying will continue.	A Fisheries Management Plan will be developed and implemented. Plan will include facilities, monitoring, and Refuge-specific regulations.	Same as Alternative 2.	A Fisheries Management Plan will be developed and implemented. Plan will include facilities, monitoring, and -specific regulations.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 2: Habitats				
Objective 1: Contiguous Forest	Reforestation will occur on areas where past efforts have failed or on new acquisitions. Total existing forested area will remain at 11,678 acres. Current level of forest fragmentation will persist. No further contribution will be made to area 100,000-acre forested block goal.	Reforestation will occur on an additional 1,178 acres and areas where past efforts have failed or on new acquisitions. Total planned forest will be 12,856 acres. Forest fragmentation will be reduced. Area 100,000-acre forested block goal will be achieved. Through cooperative efforts with partners, reforestation should occur in priority areas. Acquisitions within the acquisition boundary will be reforested strategically to contribute to large forested block goals and habitat diversity.	Reforestation will occur on an additional 3,438 acres and in areas where past efforts have failed or on new acquisitions. Total planned forest will be 15,116 acres. Forest fragmentation will be reduced as much as possible. Area 100,000-acre forested block goal will be achieved. Expanded acquisition boundary acquisitions will be reforested to contribute to large forested block goals with little consideration of habitat diversity.	Reforestation will occur on areas where past efforts have failed. Total planned forested area will be reduced to 11,678 acres. Forest fragmentation will increase. No further contribution will be made to area 100,000-acre forested block goal.
Objective 2: Bottomland Hardwood Forest	The current level of limited forested habitat monitoring/surveying will continue. All forestland will be allowed to develop without active management.	Extensive forested habitat monitoring/surveying will occur. A Forest Management Plan will be developed and implemented to mimic and maintain a historic diversity of forest cover types, tree species composition, and tree age-class distributions. Refuge will provide seasonal flooding on 345 acres of forested wetlands.	Same as Alternative 2, but Refuge will provide seasonal flooding on 1,500 acres of forested wetlands.	Same as Alternative 2.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 2: Habitats				
Objective 3: Open Water Wetland	The current level of limited open water wetland habitat monitoring/surveying will continue. Open water wetland will be allowed to develop without active management.	Extensive open water wetland monitoring/ surveying will occur. Open water wetland will be actively managed to control exotic/invasive plants and animals. Best Management Practices will be used to reduce inflow of contaminants. Action will be taken to increase water depths. Lake Ophelia will be restored.	Same as Alternative 2.	Same as Alternative 2.
Objective 4: Water Management Units	The current level of limited cropland/moist-soil water management unit habitat monitoring/surveying will continue. Water management units will be managed with an aging water control infrastructure and outdated Water Management Plan. Refuge will provide seasonal flooding on the following habitat types: 300-550 acres moist soil, 605-855 acres unharvested crop and harvested crop, and 500 acres bottomland forest. Flooding will be largely rainfall dependent.	Extensive cropland/ moist-soil water management unit habitat monitoring/ surveying will occur. Water control infra-structure will be improved and a new Water Management Plan developed and implemented to provide flooded habitats that correspond to the migration chronologies of migratory species. Provide seasonally flooded habitat on 330 – 700 acres of moist soil, 405-775 acres of un-harvested and unharvested crop, and 345 acres of bottomland forest. Improved water management infra-structure and operation funding will ensure dependable flooding 100+ days/yr	Same as Alternative 2, but no water control facilities infrastructure improvements will be made and seasonal flooding will be provided on 140 acres of moist soil, 100 acres of unharvested crop and 1,500 acres of bottomland forest.	Same as Alternative 2, but seasonally flooded habitat will be provided on 300-550 acres of moist soil, 605-855 acres of unharvested and harvested crop, and 345 acres of bottomland forest.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 2: Habitats				
Objective 5: Cooperative Farming	The current cooperative farming program will continue. Approximately 3,678 acres will be cooperatively farmed. Refuge provides 605-855 acres of flooded unharvested and harvested crop and 300-550 acres of moist-soil habitat through the cooperative farming program.	The current cooperative farming program will be reduced to 2500 acres (over the life of this plan). Approximately 330 – 700 acres will be maintained in moist soil production, 405 – 775 acres in flooded unharvested and harvested crop, and 50 acres of non-flooded corn.	Cooperative farming will be eliminated. Approximately 100 acres will be planted to agricultural crops and 140 acres maintained in moist soil production by Refuge staff. Refuge will provide 100 acres of flooded unharvested crop.	Same as Alternative 1. Increase cooperative farming where possible.
Goal 3: Environment				
Objective 1: Land Acquisition	Acquisition will occur within the existing acquisition boundary (38,000 acres).	Same as alternative 1.	Same as Alternative 2. Acquisition boundary will be expanded (77,000 acres) to facilitate habitat objectives for trust resource species and provide additional wildlife-dependent recreational opportunities.	Same as Alternative 1.
Objective 2: Private Lands Technical Assistance	Requests for technical assistance on private lands will be referred to appropriate Ecological Services Office.	Develop partnerships with and provide technical assistance to other agencies and the general public to promote wetland restoration and reforestation. Support objectives of Black Bear Repatriation Plan.	Same as Alternative 2.	Same as Alternative 2.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 3: Environment				
Objective 3: Cultural and Historic Resources	Refuge activities will comply with cultural and historic resource laws.	Refuge activities will comply with cultural and historic resource laws. A comprehensive cultural resources survey will be conducted. Efforts will be initiated to interpret local Native American natural history.	Same as Alternative 2.	Same as Alternative 2.
Goal 4: Education and Visitor Services				
Objective 1: Environmental Education	Continue current environmental education program.	Develop a community-based environmental education program in coordination with area schools that provides on- and off-site educational opportunities, curriculum and support materials, and support facilities (e.g., outdoor classroom). Develop and implement an Environmental Education Plan.	Same as Alternative 2.	Same as Alternative 2.
Objective 2: Fishing	Continue current fishing program.	Improve fishing program by providing all-weather, standard vehicle, universally accessible facilities (boat launch ramps, piers, bank fishing areas, etc.) at Lake Ophelia and Duck, Westcut, and Frasier-Whitehorse Lakes.	Same as Alternative 2.	Same as Alternative 2.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 4: Education and Visitor Services				
Objective 3: Hunting	Continue current hunting program.	Provide safe, high-quality hunting opportunities consistent with sound biological principles. Hunting opportunities will increase as more land is acquired within the current acquisition boundary. Also, hunting program will be improved by providing additional youth hunting opportunities and improving vehicle access routes. Improve disability hunting access.	Provide safe, high-quality hunting opportunities consistent with sound biological principles. Acquisition boundary expansion will increase potential hunting opportunities. Hunting program will be improved through additional youth hunting opportunities and improved vehicle access routes.	Same as Alternative 2.
Objective 4: Interpretation	Continue current interpretation program.	Develop a Refuge interpretation program that will increase awareness of habitat features, wildlife values, and management programs. Provides appropriate interpretation panels/signs at all observation sites (towers, trail heads, wildlife drive pull-offs).	Same as Alternative 2.	Same as Alternative 2.
Objective 5: Wildlife Observation and Photography	Continue current wildlife observation and photography program.	Improve wildlife observation and photography program by providing universally accessible facilities (boat launch ramps, observation towers, photo blinds, hiking trails, wildlife drive, etc.) throughout Refuge.	Same as Alternative 2.	Same as Alternative 2.

Table 3-1: A comparison of how each of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives will address management objectives. ***(Continued)***

Objective	Alternative 1(No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Goal 4: Education and Visitor Services				
Objective 6: Visitor Facilities and Support Programs	Maintain current visitor support facilities and programs.	Develop and implement a Visitor Services Management Plan. Construct and maintain observation tower, access, all-weather vehicle access, and restroom facilities. Establish a Refuge cooperating association.	Same as Alternative 2.	Same as Alternative 2.
Goal 5: Refuge Administration				
Objective 1: Refuge Complex Staffing	Maintain current staffing level at 10 positions.	Increase staffing to minimum necessary to implement Comprehensive Conservation Plan. Add 9 positions.	Same as Alternative 2. Add 7 positions.	Same as Alternative 2. Add 7 positions.
Objective 2: Law Enforcement	Enforce all applicable Federal, State, and local laws.	Establish a preventive law enforcement education program and enforce all applicable Federal, State, and local laws.	Same as Alternative 2.	Same as Alternative 2.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Bottomland Hardwood Restoration	No new areas will be reforested. The only planting will be replanting failed sites. Some 4,588 acres reforested to date. Total forest = 11,678.	Reforestation will occur on an additional 1178 acres and in areas where past efforts have failed in a phased approach. The first phase will be to evaluate and re-plant the existing 4,588 acres. In Phase 2, 500-700 acres of agricultural land will be reforested. In Phase 3 478-678 acres of farmland will be reforested (Total land reforested would be 4,588, 5,088, then 5,766 acres). Sites selected will be located strategically to maximize forest interior habitat creation while maintaining farmland (3,678, 3,178, then 2,500 acres) sufficient to accomplish waterfowl goals. Total forest = 11,678, 12,178, then 12,856 acres.	Reforestation will occur on an additional 3,438 acres and in areas where past efforts have failed or on new acquisitions. Total planned forest will be 15,116 acres. Forest fragmentation will be reduced as much as possible. As new lands are acquired within the new boundary expansion area, reforestation will also occur.	Same as Alternative 1.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Hunting	No new hunting opportunities will be offered within current Refuge boundary. At present, 12,665 acres are hunted seasonally. Additional hunting opportunities could be offered on any of the 20,500 acres remaining to be acquired in existing acquisition boundary.	Compatible hunting opportunities will be expanded to the greatest extent possible within the current acquisition boundary.	Compatible hunting opportunities will be expanded to the greatest extent possible on any of the 59,500 acres within current and expanded acquisition boundary.	Same as Alternative 2.
Fishing	No new fishing opportunities will be offered within current Refuge boundary. Currently, 500 acres are available for fishing. Additional fishing opportunities could be offered on any of the 20,500 acres remaining to be acquired in existing acquisition boundary.	Compatible fishing (bank and boat) opportunities will be expanded to the greatest extent possible. Seek funding to provide all-weather access to fishing areas. Additional fishing opportunities could be offered on any of the 20,500 acres remaining to be acquired in existing acquisition boundary.	Compatible fishing (bank and boat) opportunities will be expanded to the greatest extent possible. Seek funding to provide all-weather access to fishing areas. Land acquired within the current and expanded acquisition boundary (59,500 acres) offers additional fishing opportunities.	Same as Alternative 2

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Visitor Services and Education	No public use/education staff or visitor facilities. Limit public recognition and use of the Refuge.	New recreation & education opportunities will be offered (e.g., on- & off-site environmental education, observation facilities, visitor center annex).	Same as Alternative 2.	Same as Alternative 2.
Funding/ Staffing	Funding shortfall will continue to negatively affect all Refuge programs. Staffing level = 10 FTEs (who also have work responsibilities on Grand Cote and Cat Island NWRs).	Seek funding sufficient to meet all Refuge goals and objectives. Staffing level = 19 FTEs (Sixteen FTEs also have work responsibilities on Grand Cote and Cat Island NWRs).	Seek funding sufficient to meet all Refuge goals and objectives. Staffing level = 17 FTEs (Fifteen FTEs also have work responsibilities on Grand Cote and Cat Island NWRs).	Seek funding sufficient to meet all Refuge goals and objectives. Staffing level = 17 FTEs (Fifteen FTEs also have work responsibilities on Grand Cote and Cat Island NWRs).
Roads and Trails, Exterior and Interior	Poor quality roads will continue to hamper management access & reduce opportunities for public use. There are approximately 4.1 miles of dirt and gravel parish road leading to Refuge and 38 miles of leveed dirt roads/trails on .	Refuge will seek Federal, State, and local assistance to improve parish access road. Approximately 12 miles of Refuge road will be improved and 9 miles of ATV trail will be converted to permit all-weather vehicle travel for management and compatible public use. Eight miles of ATV trails will be maintained and the hiking trail system will be expanded to six miles (will include foot bridges and boardwalk).	Same as Alternative 2.	Same as Alternative 2.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
FSA Fee Title Tract Access	Poor quality roads & lack of rights of way will continue to impede management & protection & to bar public use of FSA fee title tracts.	Access to FSA fee title tracts will be acquired & improved to allow management, protection, & compatible public use.	Same as Alternative 2.	Same as Alternative 2.
Land Acquisition	Acquisition will occur within the existing acquisition boundary (38,000 acres).	Same as alternative 1.	Acquisition boundary will be expanded (to 77,000 acres) to help meet Louisiana migratory bird objectives for interior forest habitat, to provide Louisiana black bear habitat, and to allow increased compatible public use opportunities.	Same as Alternative 1.
Forest Fragmentation	Current level of forest fragmentation will be maintained.	Areas scheduled for reforestation will be strategically located to reduce forest fragmentation while consistently meeting waterfowl objectives.	All open areas (except 240 acres) will be reforested, maximizing reduction of forest fragmentation. Waterfowl objectives will not be met consistently.	Forest fragmentation will increase as failed reforestation sites are reclaimed for moist-soil management. Waterfowl objectives will be consistently met.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Agriculture	Current cooperative farming/moist-soil management program will continue. Farm/moist-soil acres = 3,678. Waterfowl/shorebird habitat objectives will only be met occasionally, due to funding and staffing shortfall.	Water management facilities and moist-soil management capabilities will be improved, and cooperative farming will be phased out (as Refuge resources become available) to achieve waterfowl/shorebird habitat objectives with reduced acreage. Phase 1 farm/moist-soil acres = 3,678. Phase 2 farm/moist-soil acres = 3,178. Phase 3 farm/moist-soil acres = 2,500. Waterfowl/shorebird habitat objectives will be met consistently.	Cooperative farming program will be eliminated. Refuge will conduct 240-acre farm/moist-soil management program. Waterfowl/shorebird habitat objectives will not be met consistently.	Water management facilities and moist-soil management capabilities will be improved. Cooperative farming/moist-soil management program will be expanded as much as possible. Waterfowl/shorebird habitat objectives will be met consistently.
Cultural Resources	Refuge activities will comply with State, local, and national cultural and historical resources laws.	Refuge activities will comply with State, local, and national cultural and historical resources laws. Partnerships will be developed to promote the Refuge's natural, cultural, and historic resources.	Same as Alternative 2.	Same as Alternative 2.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Waterfowl	Refuge will not contribute to State wood duck banding objectives. Fifty wood duck nest boxes will be maintained. Current staffing/funding and water management capabilities allow Refuge to opportunistically provide habitat capable of supporting 1.9 million waterfowl use days.	Extensive waterfowl monitoring/surveys will occur: ground and aerial. Refuge will contribute to State wood duck banding objectives. Minimum of 75 wood duck nest boxes will be maintained. Increased staffing/funding and water management capabilities will allow Refuge to consistently provide habitat capable of supporting 2.5 million waterfowl use days. Will meet waterfowl habitat objectives consistently.	Extensive waterfowl monitoring/surveys will occur: ground and aerial. Refuge will contribute to State wood duck banding objectives. Minimum of 100 wood duck nest boxes will be maintained. Increased staffing/funding and water management capabilities will allow Refuge to consistently provide habitat capable of supporting 1.3 million waterfowl use days. Will not meet waterfowl habitat objectives.	Extensive waterfowl monitoring/surveys will occur: ground and aerial. Refuge will contribute to State wood duck banding objectives. Minimum of 100 wood duck nest boxes will be maintained. Increased staffing/funding and water management capabilities will allow Refuge to consistently provide habitat capable of supporting 3.8 million waterfowl use days. Will meet waterfowl habitat objectives consistently.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Threatened and Endangered Species	Provide existing planned forested Louisiana black bear (LABB) habitat on 11,678 acres. Non-Refuge lands inside the current acquisition boundary could add 20,500 acres of forest to the Refuge. Currently, 18,435 acres of these lands are forest or recent reforestation. An additional 2,065 acres will need to be reforested. The Refuge will attempt to purchase (and reforest, if necessary) the 20,500 acres within the current acquisition boundary. Refuge will serve as a LABB reintroduction site.	Forested LABB habitat will be increased by reforesting 1,178 acres of Refuge cropland (12,856 acres total forest). The Refuge will continue efforts to acquire, protect, and restore 20,500 acres of inholdings within the current acquisition boundary. Refuge will assume major responsibilities for LABB recovery efforts in central Louisiana (i.e., serve as core LABB reintroduction site & public contact). The Refuge will also work closely with Federal, State, and Private Partners within the Three Rivers SPOA to protect, restore, and reforest priority lands (corridor habitat) of conservation concern.	Forested LABB habitat will be increased by reforesting 3,438 acres of Refuge cropland (15,116 acres total forest). The Refuge will continue efforts to acquire, protect, and restore 20,500 acres of inholdings in the current acquisition boundary. Conservation efforts will be expanded in a surrounding 39,000-boundary expansion area, where Refuge will facilitate the restoration and protection of up to 13,000 acres of non-forest land and 26,000 acres of forest land through acquisition, easements, and partnerships. Refuge will assume major responsibilities for LABB recovery efforts in central LA (i.e., serve as core LABB reintroduction site & public contact).	Same as Alternative 1.

Table 3-2: The responses of the four Lake Ophelia National Wildlife Refuge Environmental Assessment alternatives to the issues and concerns identified by the planning and scoping teams and the general public *(Continued)*

Issue/concern	Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4
Neotropical Migratory Birds(NMB)	Provide existing planned forested NMB habitat, 11,678 acres. Non-Refuge lands inside the current acquisition boundary could add 20,500 acres of forest to the Refuge. Currently, 18,435 acres of these lands are forest or recent reforestation. An additional 2,065 acres will need to be reforested. The Refuge will attempt to purchase (and reforest, if necessary) the 20,500 acres within the current acquisition boundary. Refuge will contribute to reduction of forest fragmentation and 100,000-acre forested block creation. Can serve as a NMB research site.	Forested NMB habitat will be increased by reforesting 1,178 acres of Refuge cropland (12,856 acres total forest). The Refuge will continue efforts to acquire, protect, and restore 20,500 acres of inholdings in the current acquisition boundary. Areas scheduled for reforestation will be strategically located to reduce forest fragmentation & contribute to 100,000-acre forested block creation. The Refuge will also work closely with Federal, State, and Private Partners within the Three Rivers SPOA to protect, restore, and reforest priority lands (corridor habitat) of conservation concern. Can serve as a NMB research site.	Forested NMB habitat increased by reforesting 3,436 acres of Refuge cropland (15,116 acres total forest). The Refuge will continue efforts to acquire, protect, and restore 20,500 acres of inholdings in the current acquisition boundary. Conservation efforts will be expanded in a surrounding 39,000-boundary expansion area, where Refuge will facilitate the restoration and protection of up to 13,000 acres of non-forest land and 26,000 acres of forest land through acquisition, easements, and partnerships. Refuge will maximize reduction of forest fragmentation & contribution to 100,000-acre forested block creation. Forested NMB habitat can serve as a NMB research site.	Same as Alternative 1.