

LAND PROTECTION PLAN  
FOR THE EXPANSION OF  
**CACHE RIVER NATIONAL WILDLIFE REFUGE**

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Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties, Arkansas



*USFWS Photo*

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Southeast Region





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## *I. Introduction and Purpose*

### **PROJECT DESCRIPTION**

This Final Land Protection Plan (Final LPP) identifies and describes the expansion of the acquisition boundary for Cache River National Wildlife Refuge (NWR). In order to truly restore the ecological functions for fish and wildlife species in the Cache River Basin, fully implement strategic habitat conservation, and demonstrate that watershed restoration within the Mississippi Alluvial Valley (MAV) is achievable, the Fish and Wildlife Service (Service) and its partners believe that the land acquisition focus for the refuge must be extended beyond the scope of the current approved acquisition boundary. Approval and implementation of this expansion will: (1) Enable protection, restoration and enhancement of an additional 101,110 acres; (2) provide new connections with Bald Knob, Cache River, and White River National Wildlife Refuges, six Arkansas state wildlife management areas, two state natural areas, and numerous private lands conserved through federal, state, and non-governmental organization easements (Figures 1 and 2); (3) enhance conservation effectiveness; (4) help restore ecological functions; (5) increase water quality; (6) protect and restore natural hydrology and habitats for the benefit of numerous fish and wildlife trust species; (7) benefit willing sellers outside the current acquisition boundary; and (8) improve access and public use opportunities on a nationally renowned hunting and wildlife observation area.

Cache River NWR, in Monroe, Prairie, Woodruff, and Jackson Counties of east-central Arkansas, extends an areal distance of approximately 65 miles along the Cache River floodplain from Clarendon to Grubbs. Land acquisition has continued on a willing-seller basis, and the refuge now contains about 67,400 acres. This project will expand the current 185,574-acre acquisition boundary of Cache River NWR to include an additional 101,110 acres surrounding the Cache River NWR (Figure 2). When combined with the current Cache River NWR acquisition boundary, this project will protect, restore, and enhance a total of 286,684 acres both east and west of the Cache River and Bayou DeView. This project encompasses undeveloped areas in Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties. Towns located within or adjacent to the expansion include: Grubbs, Fisher, McCrory, Cotton Plant, Gregory, and Beulah.

Three expansion areas have been identified within the expansion project (Figure 3). A brief description of the expansion areas are as follows: Area 1 – Cache River/Bayou DeView Corridor (38,483 acres) to provide corridor habitat and connect the watersheds of Cache River and Bayou DeView; Area 2 – Bayou DeView Peripheral (32,630 acres) to strategically expand northward protection of the Bayou DeView floodplain, to provide a restoration area associated with the junction of channelized/non-channelized river courses, to further connect the watershed of Bayou DeView and Cache River, and to establish watershed buffers east of Bayou DeView; and Area 3 – Cache River Peripheral (29,997 acres) to conserve unique habitats west of Cache River, to facilitate future connection of the watersheds of the White and Cache Rivers, to expand northward protection of the Cache River floodplain, and to enhance riparian buffers along the Cache River. The areas and acreages above exclude state and municipal ownerships. These areas are encompassed by the recommended acquisition boundary in Alternative 2 of the Draft Environmental Assessment for the expansion of the refuge. The current configurations of the expansion areas total 101,110 acres. The purposes of this Final LPP are to:

- Provide landowners and the public with an outline of Service policies, priorities, and protection methods for land in the project area;

Figure 1. Location map

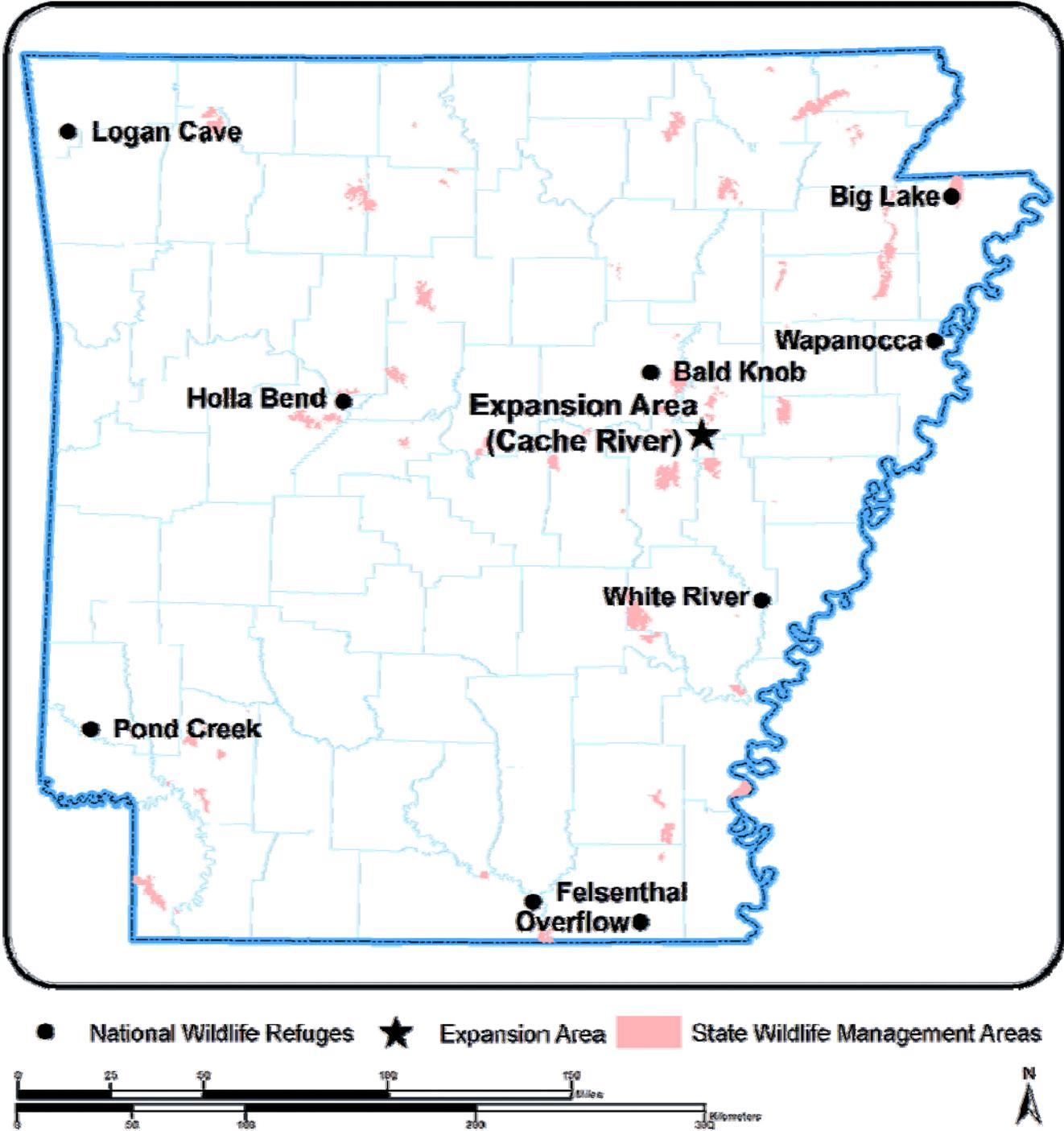


Figure 2. Related resources map

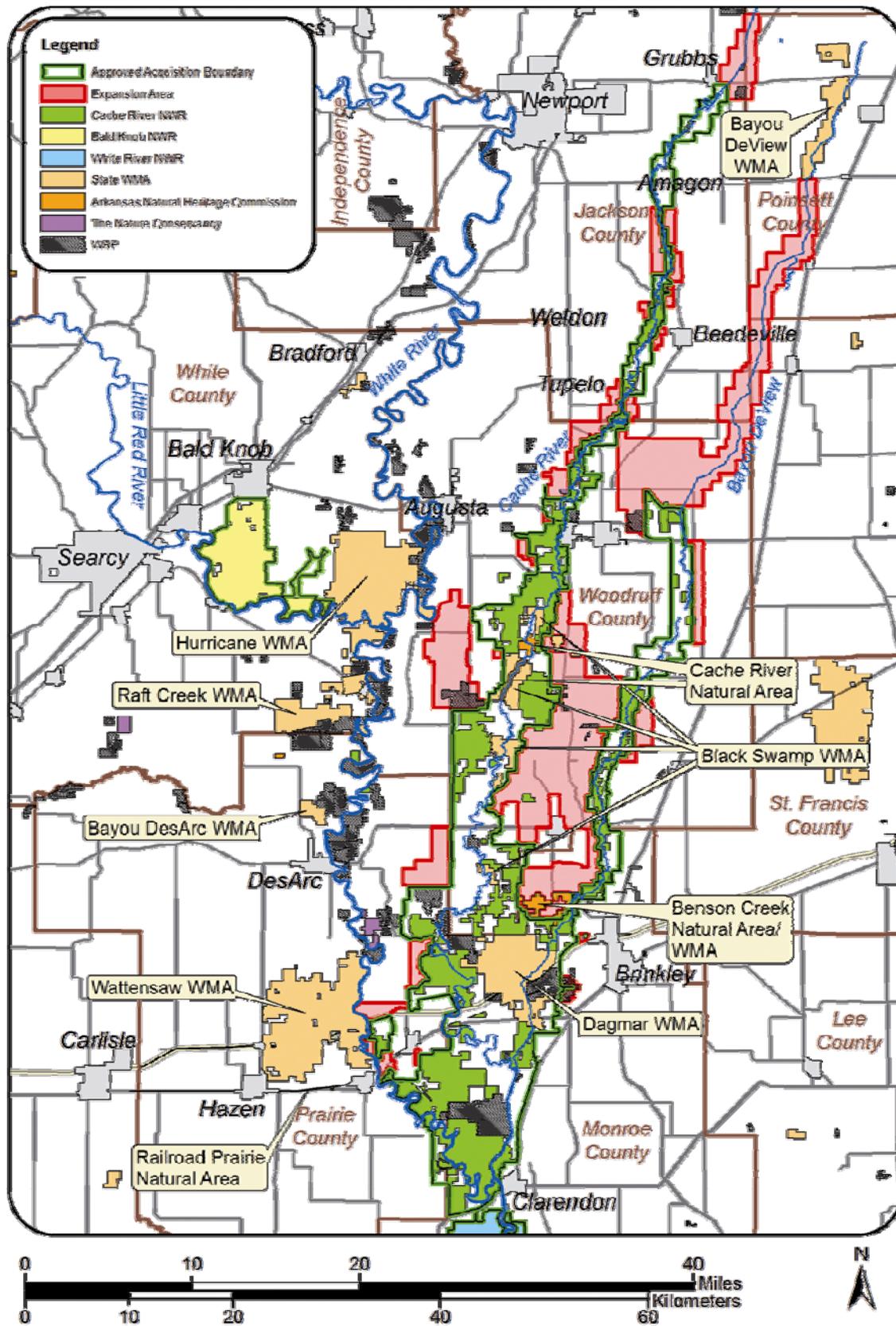
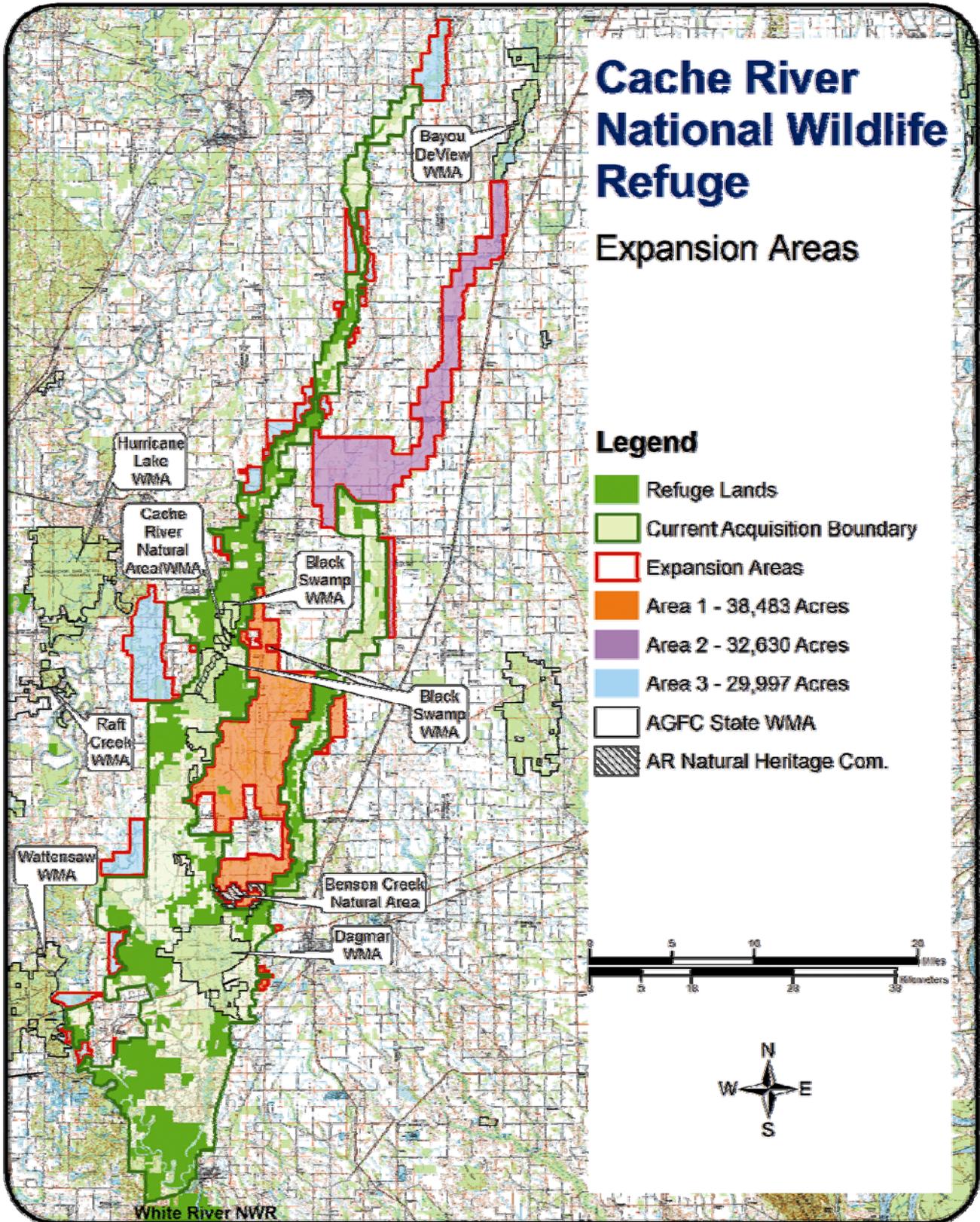


Figure 3. Project map



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- Assist landowners in determining whether their property lies within the acquisition boundary; and
  - Inform landowners about our long-standing policy of acquiring land only from willing sellers. (We will not buy any lands or easements if the owners are not interested in selling.)

This Final LPP presents the methods the Service, partners, and interested landowners can use to accomplish their objectives for wildlife habitat within the refuge boundary. Within approved acquisition boundaries, the Service will be able to enter into negotiations and/or partnerships for the protection, restoration, and enhancement of environmentally sensitive lands. The following list presents the most urgent needs for acquiring an interest in the lands encompassed by this project.

- Restore key ecological processes that drive and sustain the unique, but declining Cache River floodplain ecosystem, which is a Wetland of International Importance, and improve ecosystem services and associated public benefits.
- Strategically restore altered geophysical features and original connectivity of water flow within and between the Cache River and Bayou DeView floodplains.
- Improve hydrologic function of these streams and their floodplains and enhance wetland and aquatic ecosystems for the benefit of trust species.
- Incorporate protection and enhancement of a diversity of critical habitats on which trust species depend to better represent the full spectrum of habitats that was historically present.
- Restore forested habitat and other natural plant communities to improve overall watershed health and stability, promote carbon sequestration, bolster ecological integrity, and increase habitat patch size to accomplish goals set forth in refuge, state, Lower Mississippi River Joint Venture (LMRJV), regional, and national plans for migratory birds, forest breeding birds, endangered species, and resident wildlife and fish species.
- Protect, restore, and enhance fragmented and degraded floodplain forests and create large contiguous forest and riparian buffers adjacent to the Cache River and Bayou DeView to improve water quality, to provide fish and wildlife movement corridors, and to enlarge habitat patch sizes for trust wildlife species.
- Protect lands between Bald Knob, Cache River, and White River National Wildlife Refuges, state wildlife management areas, state natural areas, and private conservation lands to enlarge conservation benefits within the watershed of the Cache/White Rivers.
- Increase and facilitate access and wildlife-dependent recreation on public lands.

## **REFUGE PURPOSE(S)**

Cache River NWR was established on June 16, 1986, with the purchase of 1,395 acres within an approved acquisition boundary of 60,400 acres. On August 5, 1998, the Regional Director approved the Final Land Protection Plan and Final Environmental Assessment to expand the existing acquisition boundary an additional 114,900 acres. The approved expansion approximated the 10-year floodplain of the Lower and Middle Cache River Basin, including Bayou DeView, and increased the approved acquisition boundary to a total of 175,300 acres. The acquisition boundary was further expanded by 410 acres on June 22, 1999, and by 9,864 acres on February 4, 2005, by authority delegated to Regional Directors to approve any refuge expansion totaling 10 percent or less of the approved acquisition boundary for an established refuge. The current acquisition boundary encompasses 185,574 acres. The refuge now contains about 67,400 acres (in fee-title). Cache River NWR is one of four refuges

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administered by the Central Arkansas National Wildlife Refuge Complex (Complex) that also includes Bald Knob, Big Lake, and Wapanocca National Wildlife Refuges (Figure 1). In addition, Cache River NWR adjoins White River NWR to the south.

Cache River NWR's official purposes and enabling legislation are:

“...the conservation of the 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. 3901(b) (Emergency Wetlands Resources Act of 1986);

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” 16 U.S.C. 742f(a)(4) ...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude...” 16 U.S.C. 742f(b)(1) (Fish and Wildlife Act of 1956);

“...for use as an inviolate sanctuary, or for any other management purposes, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

The vision statement for Cache River NWR is:

*“Refuges within the Central Arkansas National Wildlife Refuge Complex will be conserved and managed as havens for migratory birds, especially waterfowl, in a region of the continent critically important for their survival. Working with partners, the Service will protect, restore, and enhance bottomland hardwood forest ecosystems, wintering waterfowl habitats, and other fish and wildlife habitats for the benefit of the American public. The Service will provide opportunities for the public to use and enjoy these refuges in a way that safeguards their values and promotes awareness of their importance” (USFWS 2009).*

In addition to its strategic habitat conservation program, the Complex will continue to serve the American people by expanding opportunities for compatible, wildlife-dependent recreation such as hunting, fishing, wildlife photography and observation, as well as environmental education and interpretation. In addition, the Complex will seek partnerships that promote environmental stewardship, foster research opportunities to enhance resource management and restoration efforts, and protect its historical and cultural resources.

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## II. Resources

### RESOURCES TO BE PROTECTED, RESTORED, AND ENHANCED

The Cache River Basin has been highly altered and degraded from numerous factors, principally conversion of bottomland hardwood forests to agricultural cropland, changed physical topography and water flow pathways, changed physical hydrodynamics of the Cache River and Bayou DeView, degraded water quality and quantity throughout the system, changed distribution and composition of remnant bottomland hardwood forests and aquatic communities, and discontinuity of bottomland hardwood tracts and nutrient/energy flow (M.E. Heitmeyer 2010). Attempts to restore and enhance functions, values, and resources in the Cache River Basin will require coordinated, multi-disciplinary approaches that address the entire landscape context of the watershed (M.E. Heitmeyer 2010).

Cache River NWR is highlighted as part of Secretary Salazar's America's Great Outdoors (AGO) Rivers Initiative, as an AGO state project, and also has been designated as a National Blueways System Pilot Project. The Cache River Basin is also encompassed within USDA-Natural Resources Conservation Service's Mississippi River Basin Healthy Watersheds Initiative, and is embedded within the Gulf Coastal Plain-Ozarks Landscape Conservation Cooperative. The project area is identified as a "Wetland of International Importance" (Ramsar Convention), and as the most important wintering area for mallard ducks in North America (North American Waterfowl Management Plan).

This Final LPP also will facilitate the refuge's efforts to meet objectives of the following national, regional, and local plans and initiatives: U.S. Shorebird Conservation Plan, North American Waterfowl Management Plan, Partners in Flight Bird Conservation Plan, American Woodcock Management Plan, Southeast U.S. Waterbird Conservation Plan, Mississippi Alluvial Valley Bird Conservation Plan, Northern Bobwhite Quail Initiative, Fisheries Vision for the Future, Southeast Aquatic Resources Partnership, Arkansas Comprehensive Wildlife Conservation Strategy, Big Woods of Arkansas (The Nature Conservancy), Cache/White Rivers'-Big Woods Collaborative Conservation Focus Area, Beyond the Boundaries (National Wildlife Refuge Association), and several Endangered Species Recovery Plans.

The current acquisition boundary for Cache River NWR, although effective in enabling land conservation actions within a core area of the Cache River Basin, falls well short of a watershed-scale conservation project. Through this project, the Service, working with partners and the public, will expand the acquisition boundary of Cache River NWR to encompass 101,110 acres, which will produce a total conservation footprint of 286,684 acres and protect approximately 229 main river channel miles within the Cache River and White River floodplains. The project will increase conservation effectiveness within the watershed by employing a strategic habitat conservation approach and providing new connections with Bald Knob, Cache River, and White River National Wildlife Refuges, six Arkansas state wildlife management areas, two state natural areas, and numerous private lands conserved through federal, state, and non-governmental organization easements. Implementation of this project will serve to: (1) Improve water quality and restore hydrologic function; (2) protect, restore, and enhance aquatic, wetland, and terrestrial habitats for waterfowl, other migratory birds, seven threatened/endangered species, and numerous other native wildlife and fish species; (3) reconnect historical riparian ecosystems and enlarge contiguous blocks of bottomland hardwood forest; (4) enhance ecological integrity of the Cache River/White River Basins, an area nationally and internationally renowned for ecological and wildlife conservation value; and (5) improve access and public use opportunities on Cache River NWR.

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Migratory and resident waterfowl, American woodcock, shorebirds, secretive marshbirds, colonial wading and water birds, and forest breeding and neotropical migratory birds are common throughout the Cache River Basin. Resident birds and mammals, such as eastern wild turkey, white-tailed deer, bats, numerous furbearers, and small mammals also are common. Additionally, there are numerous species of reptiles, amphibians, mussels, and fish that are common in rivers, bayous, lakes, sloughs, and other wetland areas.

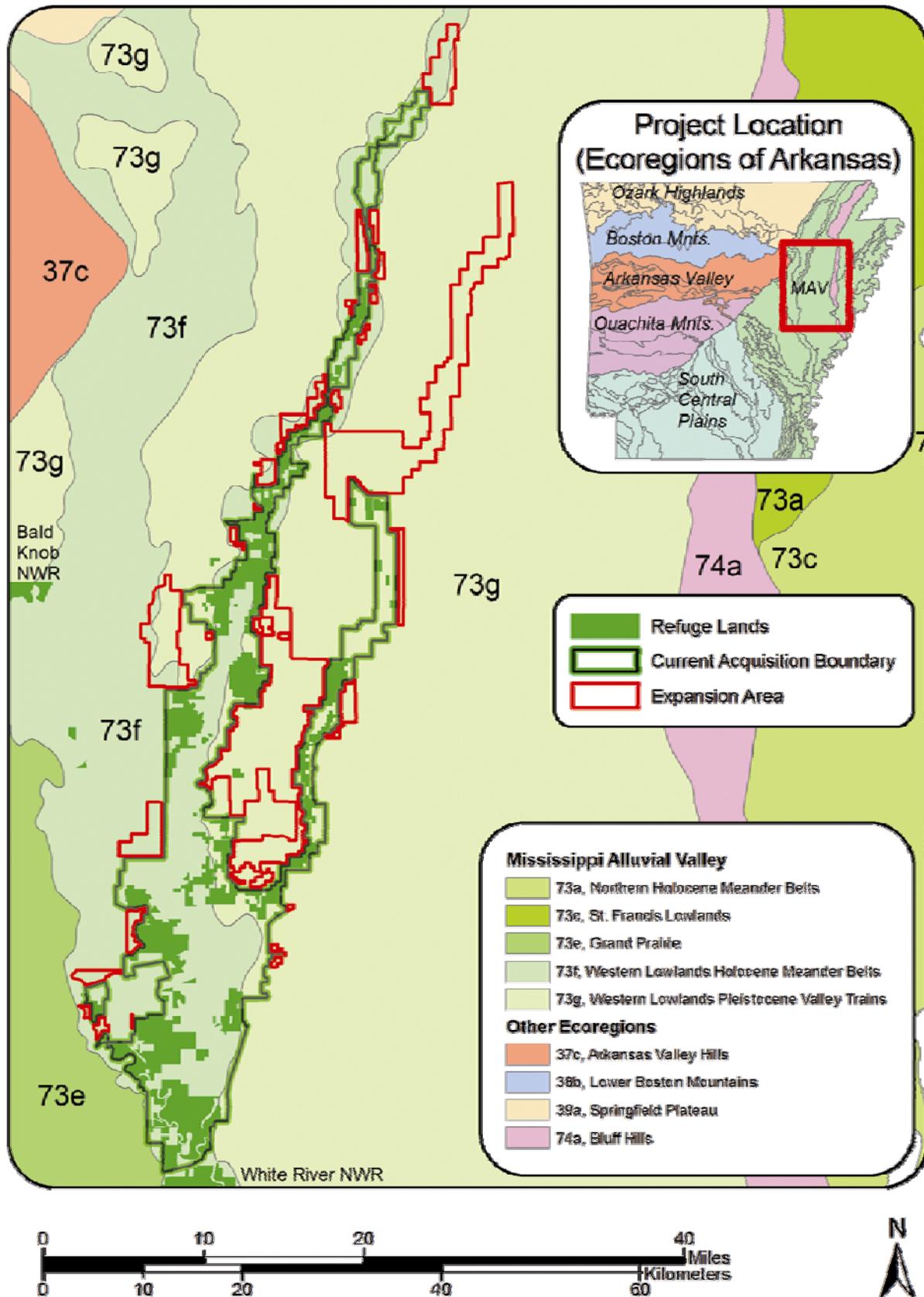
Ivory-billed woodpeckers; bald eagles; wood storks; southeastern myotis and Rafinesque's big-eared bats; pink mucket, fat pocketbook, and rabbitsfoot (Candidate) mussels; and pondberry and are some of the endangered species and species of special concern that are known to occur in the Cache River and White River Basins. Additionally, endangered least terns and piping plovers occur within the expansion area.

During pre-European settlement, the floodplain of the Cache River Basin was almost entirely covered by various bottomland hardwood forest community types. Edges of the floodplain were mostly forested, with some isolated, higher elevation terraces and dune areas containing relatively small areas of bottomland prairie and savanna. This bottomland hardwood-dominated ecosystem supported a high diversity of plant and animal species and was an important corridor of movement for water, nutrients, sediments, and animals within the MAV (U.S. Department of the Interior 1984). The location of the refuge and expansion area within the MAV and the ecoregions of Arkansas is depicted in Figure 4.

Today, the Cache River Basin's 100-year floodplain is nearly 75 percent cleared and used as agricultural land; much of this land was cleared in the 1960s and 1970s for soybean production. Despite the extensive deforestation and ecological alterations, the Cache River Basin remains as one of the most important bottomland hardwood ecosystems in North America, and is identified by many national and international conservation entities for its unique and valuable ecological significance and as a priority region for future protection and restoration (complete documentation in U.S. Fish and Wildlife Service 2009).

Land use within the current approved acquisition boundary is dominated by agriculture; the remaining forested habitats are characterized by riverine backwater communities comprised of overcup oak with Nuttall oak as a common associate, baldcypress and water tupelo predominant in swales and along internal drainages, and on slightly higher sites, willow oak/Nuttall oak with overcup oak in vernal pools. Also present are riverine overbank communities of sycamore, cottonwood, black willow, pecan, cedar elm, boxelder, sugarberry, and Nuttall, willow, and water oaks. Topography in these bottoms is relatively flat, with connected sloughs, oxbows, and depressions. Higher in the floodplain are found various hardwood flat communities of water oak, sugarberry, and sweetgum, with willow and Nuttall oaks in vernal pools - and further to the north - hardwood flats of water oak, swamp chestnut oak, and mockernut hickory with willow oak, Nuttall oak, and green ash in vernal pools (Klimas et al. 2009). Cache River NWR currently occupies 67,400 acres of which approximately 47,000 acres are in a hardwood forest complex and approximately 17,000 acres are in reforestation/restoration. Although the habitat communities within the current holdings and current acquisition boundary of Cache River NWR are diverse, they do not represent the full spectrum of the ecosystem that was historically present. Unique habitats exist very near the refuge on which trust wildlife resources - including those not found within the current boundary - are dependent, but are unavailable for protection, restoration, or enhancement, because they are outside the approved acquisition boundary. Furthermore, it is essential to protect, restore, and enhance ecological functions and plant and animal communities beyond the current acquisition boundary on a landscape scale in order to strategically and effectively accomplish the purposes for which Cache River NWR was established. Therefore, this preliminary step toward restoration of the functional watershed of the Cache and White Rivers will promote comprehensive fulfillment of refuge purposes.

Figure 4. Ecoregions map



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The current acquisition boundary could be viewed as an ecological core, and the expansion area could function not only as an insulation buffer, but also to provide the means to protect, restore, and enhance unique habitats for trust resources (endangered species, migratory birds, wetlands, and interjurisdictional fishes) that are underrepresented in this region.

A description of habitats for each expansion area follows:

### **Cache River/Bayou DeView Corridor – 38,483 acres**

Currently, only about 15 percent of this 38,483-acre area is forested; the remainder has been cleared for agriculture. The bulk of existing forest remains in partially connected Riverine Overbank Tributary areas (small drains) and contains willow oak, water oak, American elm, green ash, persimmon, and cherrybark oak, or in Post Oak Flats or Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory, with willow oak in vernal pools and minor drains. However, historically, the dominant habitat types were: Wet Phase Hardwood Flats of delta post oak, willow oak, Nuttall oak, and overcup oak (41 percent), then roughly equal parts of: Riverine Overbank areas (14 percent), and Post Oak Flats (14 percent), and Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory with willow oak in vernal pools and minor drains (13 percent). Also worthy of note are smaller components of significant habitat currently underrepresented on the refuge: Isolated Depressions (3 percent), Terrace Depressions (1 percent), and especially Upland Hardwoods (9 percent).

Acquisition of the this area will enable hydrologic and habitat restoration within this broad and critical gap between the two major prongs (Cache River and Bayou DeView) of the current acquisition boundary, and provide a unique opportunity to functionally reconnect these two watersheds and restore a comprehensive suite of habitat communities. Additionally, threats to the ecological health and integrity of the refuge could be significantly reduced by correcting the altered hydrologic regime resulting from agricultural conversions, curbing non-point source pollution, and reestablishing native plant communities. These improvements will support achievement of refuge purposes to an extent not possible without such expansion and the resultant increase in capacity and capability for conservation and management programs.

### **Bayou DeView Peripheral – 32,630 acres**

This area extends the zone of protection of the historic channel of Bayou DeView from the current acquisition boundary northward to connect to Bayou DeView State WMA holdings; the area also extends in strategic areas to the east and west to encompass desirable habitats and improve access and management capability. The main expansion northward will provide a critical riparian habitat buffer for Bayou DeView (which currently does not exist) and allow hydrologic restoration and water quality improvement both here and downstream. This area will enable future restoration efforts to restore more natural flows through the historic bayou channel and reestablishment of more normally functioning riparian corridor and floodplain. Significant benefits to the Bayou DeView system also will be derived from reducing erosion and sedimentation, surface water withdrawal, chemical and nutrient runoff, and stream zone disturbance.

Most of the area has been cleared for agriculture; only around 6 percent of the area remains as forest in scattered blocks. Historically, the area supported mostly Wet Phase Hardwood Flats of delta post oak, willow oak, Nuttall oak, and overcup oak (35 percent), and then roughly equal parts of Riverine Overbank Tributary Valleys of willow oak, water oak, American elm, green ash, persimmon, and cherrybark oak (14 percent); Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory with willow oak in vernal pools and minor drains (12 percent); and the final major components

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of Riverine Backwater Upper and Lower Zones (11 percent and 10 percent, respectively). Following these are components of significant habitat currently underrepresented on the refuge: Post Oak Flats (6 percent), and Upland Hardwoods (4 percent).

### **Cache River Peripheral – 29,997 acres**

The Cache River Peripheral area expands the current acquisition boundary 29,997 acres in several blocks strategically located along the western and northern sides of the Cache River watershed. Only about 15 percent of the area is currently forested; the remainder is agricultural land. Similar in function to Area 1, this expansion area will enable restoration and at least partial connection of the watersheds of the White and Cache Rivers. The largest concentrations of existing hardwoods are either: (1) Riverine Backwater Upper and Lower Zones; the Upper Zone containing willow oak and Nuttall oak, with overcup oak in vernal pools, and the Lower Zone containing overcup oak, with Nuttall oak as a common associate and baldcypress and water tupelo in swales and along internal drainages; or (2) Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory, with willow oak in vernal pools and minor drains.

Historically, the dominant habitat types were: (1) Riverine Backwater Upper and Lower Zones (17 percent and 15 percent, respectively); (2) dunes containing black oak, post oak, southern red oak, prairie grasses, prickly pear, and blackjack oak (13 percent). (Dunes are soils made up of wind-blown sands deflated from Late Wisconsin outwash channels and deposited on the adjacent, older valley train terraces. These dune fields are unique to the Arkansas Delta Region of the Lower Mississippi Valley, and scarcely represented in only a portion of two current refuge tracts); and (3) Holocene Point Bars and Backswamps containing Delta post oak, water oak, swamp chestnut oak, and mockernut hickory, with willow oak, Nuttall oak, and green ash in vernal pools (12 percent). Other substantial components found here that are very unique habitats to the Cache River watershed are Post Oak Flats (2 percent), and especially isolated Sand Ponds (1 percent in the Cache Bayou area) that historically supported shrub species of concern, such as corkwood (*Leitneria floridana*) (state listed as vulnerable), and the federally endangered pondberry (*Lindera melissifolia*).

## **THREATS TO THE RESOURCE**

### *AGRICULTURE*

The dominant land use within the expansion area is agriculture. Similarly, the vast majority of non-refuge tracts within the current approved acquisition boundary of 185,574 acres is converted agricultural lands that are situated within the approximate 10-year floodplain of the lower and middle Cache River Basin, including Bayou DeView. Bottomland hardwood forest was historically the predominant habitat type, but approximately 85 percent of the Cache River Basin has been cleared for agriculture. Most of the converted habitats were forested wetlands. Large, contiguous stands of bottomland hardwood forest are required to expand habitat capacity and capability for wintering waterfowl to meet NAWMP goals as stepped down through the LMVJV, and to support self-sustaining populations of forest breeding birds, especially forest interior and area sensitive species, such as the wood thrush, cerulean warbler, prothonotary warbler, and Swainson's warbler. There are some large forest blocks remaining within the refuge, or in combination with adjacent state management areas, but much of the existing forest habitat is severely fragmented. More than 17,000 acres of agricultural or fallow fields on Cache River NWR have been planted in hardwood seedlings in an effort to improve water quality, to connect fragmented forested tracts, to restore functional habitat corridors, and to create larger contiguous blocks of forested habitat for wildlife.

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The great majority of lands purchased as a result of implementing the expansion will be restored to a forested condition and will serve as important habitat linkages that will increase connectivity, as well as consolidate and enlarge forested blocks. Moreover, the project will connect and link similar habitat conservation and restoration efforts among partner agencies, non-governmental organizations, and private landowners adjacent to the refuge. Habitat loss and degradation, forest fragmentation, lack of habitat connectivity, and impaired hydrologic function are major obstacles to fulfillment of Cache River NWR purposes and the mission of the National Wildlife Refuge System. Furthermore, deterioration of water quality due to agricultural-based erosion and sedimentation, and contamination from pesticides, herbicides, and fertilizers continue to compromise the health and suitability of fish and wildlife habitats in the riparian systems and associated wetlands.

### *HYDROLOGIC ALTERATIONS*

A basic appreciation of the hydrology of the Cache River/Lower White River watershed, and recognition and acknowledgement of its importance as the driving force behind all other ecosystem processes and functions are fundamental to addressing long-term conservation. Without this explicit recognition by all partners, effective long-term management of public lands within the Cache River Basin is impossible, and efforts toward meaningful, sustainable restoration of ecosystem functions cannot be effective or adequately focused.

Hydrologic alterations, such as flood control and drainage practices that support intensive agricultural land conversion and use, threaten the biological integrity of the refuge and fish and wildlife resources of the Cache River/White River Basin overall. A relatively recent and continuing hydrologic alteration is the increasing withdrawal of surface water for agricultural irrigation from essentially all available streams. Portions of the Cache River, with a relatively low base flow, are frequently pumped dry for some periods during most summers. Similarly, the upper portion of Bayou DeView, designated as a "critical surface water area" by the State of Arkansas, usually has no base flow during some summer months and agricultural pumping has exacerbated this to the point that the stream has recorded no-flow conditions for 10 percent of the time over the last 37 years (ASWCC 1988). Additionally, the recent average stream flow of the White River at Clarendon has decreased slightly, and this is suspected to be the result of current withdrawals for irrigation. In contrast, as a direct result of the increased rate of drainage from the Cache River Basin during periods of high rainfalls at lower elevations and those areas nearest the Cache River, Bayou DeView, and White River now receive all water more rapidly and in quantities that more frequently exceed the capacity of the system to carry and discharge it into the Mississippi River. The lowest portions of the Cache and Lower White Rivers seem now to be subjected to more frequent flooding at greater depths and for longer duration than was the historic tendency. These conditions are further exacerbated by sudden and extensive releases of water from flooded rice fields adjacent to the refuge woodlands. In summary, the hydrologic regime has been altered to such a degree that the streams and associated wetlands now suffer from low water periods that are much drier with less water depth, and high water periods that are much wetter, with greater depths, rates, and duration of inundation. This major change in the hydroperiods has a high potential to change plant species and their distributions thus negatively effecting wildlife and fisheries communities.

Implementation of the expansion will facilitate hydrological restoration and mediation of altered water-flow patterns in much of the lands adjoining Cache River and Bayou DeView. Reforestation of agricultural lands, enabled by this project, will reduce erosion and sedimentation that compromise the health of wetland and riparian systems. Similarly, cessation of irrigation on restored agricultural lands will halt groundwater and surface withdrawals and improve water quantity. Likewise, reduction of commercial farming operations in the riparian zone will lead to reduced use of herbicides, pesticides, and fertilizers that now threaten water quality. Natural hydrology could also be restored by the removal of existing levees and drainage ditches.

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## *OIL AND GAS EXTRACTION*

Exploration for and development of oil and natural gas reserves have greatly intensified area wide in recent years. Water withdrawal activities associated with natural gas production, particularly when combined with agricultural groundwater withdrawal for irrigation increase the potential for depletion of the aquifer. Furthermore, increased potential exists for contamination of wetlands and waterways flowing through the Cache River NWR from runoff, overflow, or breach of containment reservoirs for drilling fluids and tailings at the well sites. Similarly, the construction and installation of associated pipelines, situated adjacent to the refuge and traversing the Cache River and Bayou DeView in the vicinity of the refuge, also have increased the potential for negative impacts to refuge resources.

## *GLOBAL CLIMATE CHANGE*

The challenging problems associated with the current threats to the refuge are expected to amplify with global climate change, which may give rise to other issues. Although the impacts of climate change on the Cache River and surrounding area are uncertain, changes are expected. As reported in "Global Climate Change Impacts in the United States," higher temperatures, less rainfall, increased storm frequency and intensity, and more drought will occur throughout the Southeast (Scott et al. 2008). It is forecasted that temperatures will increase by at least 4.5°F by 2080, and fire severity will increase 10 to 30 percent within the next 50 years. The resultant higher temperatures will induce changes to precipitation levels and the native plant and animal distributions within associated aquatic or upland ecosystems.

Such climate changes may induce new threats and problems in refuge management. However, the expansion will result in tens of thousands of acres of agricultural lands that will be reforested and provide for carbon sequestration, which will contribute to the Service's initiatives to address the impacts of accelerated climate change. Another benefit of the expansion will be restoration of hydrologic function and conservation of surface and underground aquatic systems, which may help buffer the effects caused by altered precipitation and flooding patterns. By increasing the lands strategically managed and influenced by the Service in the MAV, the methods and programs necessary to mitigate the impacts of climate change on trust resources in this region will be much more likely to be successfully implemented. Moreover, the expanded refuge will have much greater potential to serve as refugia for species that may be vulnerable to habitat losses due to sea level rise and storm damage, particularly waterfowl and shorebirds that have lost coastal wintering areas, and warm water species, such as alligators, that have the ability to move northward into the Cache River Basin as range extensions (shifts) are stimulated due to warming conditions and changing habitats.

## **RELATIONSHIP OF PROJECT TO LANDSCAPE CONSERVATION GOALS AND OBJECTIVES**

### *AMERICA'S GREAT OUTDOORS*

The Cache River is a Rivers Demonstration Project within the America's Great Outdoors Initiative (AGO). And, an inter-organizational working group has been established to identify and seek implementation of conservation goals for the Cache River/Lower White River watershed in order to fulfill a common vision for the future of this watershed. The vision conceived by this group is to: "Maintain and enhance the globally significant Cache River/White River bottomland hardwood ecosystem within a sustainable agriculture-based landscape to balance ecological, economic, and social interests."

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The group has developed the following goals:

- Improve ecological health of the Cache River and Lower White River system (habitat);
- Promote voluntary, sustainable agricultural and forestry practices that improve water quality and enhance wildlife habitat (agriculture);
- Effectively manage surface and groundwater resources to support all users (hydrology);
- Increase outdoor recreational opportunities and access (recreation); and
- Increase public awareness of the link between economic benefits and conservation goals (outreach).

The working group identified the acquisition boundary expansion for Cache River NWR among the highest priority objectives for completion, because of its relevance and importance to achieving the vision and goals for the watershed and fulfillment of the principal tenets of the AGO Initiative.

Other short-term (1 to 3 years) objectives set forth for the Cache River/Lower White River AGO project that relate to the implementation of this expansion project include:

- Acquire 5,000 acres of public land;
- Improve 20,000 acres to desired forest condition for wildlife habitat on public lands;
- Establish ecological flows for the Cache River and Bayou DeView;
- Establish a coordinated Cache River/White River water quality monitoring program to prioritize sub-watershed projects;
- Make 5,000 acres of acquisition available to the public; and
- Enhance 4,000 acres of public wetland habitat for recreational use.

Mid-term (3 to 7 years) objectives set forth for the Cache River/Lower White River AGO project that relate to the implementation of this expansion project include:

- Implement restoration of lower 5.7 miles of the Cache River restoration;
- Acquire and restore up to 40,000 acres through conservation easements or long-term agreements;
- Acquire and restore 35,000 acres of public land;
- Implement watershed management plan for upper Cache River (Grubbs);
- Implement 10 additional miles of stream restoration projects;
- Improve 50,000 acres to desired forest condition for wildlife habitat;
- Implement a coordinated Cache River/White River water quality monitoring program to prioritize sub-watershed projects;
- Remove 1 impaired sub-watershed from EPA list;
- Make 35,000 acres of acquisition available to the public; and
- Enhance additional 2,500 acres of public wetland habitat for recreational use.

### *NATIONAL BLUEWAYS SYSTEM*

On May 24, 2012, Interior Secretary Salazar established the National Blueways System through a Secretarial Order. Included in the purpose statement of the order was the following: *“This Order establishes a program to recognize river systems conserved through diverse stakeholder partnerships that use a comprehensive watershed approach to resource stewardship. River systems designated as a National Blueway shall collectively constitute a National Blueways System. The National Blueways System will provide a new national emphasis on the unique value and significance*

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*of a “headwaters to mouth” approach to river management and create a mechanism to encourage stakeholders to integrate their land and water stewardship efforts by adopting a watershed approach.” The order also characterized the intent of the National Blueways System as: “National Blueways will be nationally and regionally significant rivers and their watersheds that are highly valued recreational, social, economic, cultural, and ecological assets for the communities that depend on them. National Blueways encourage a landscape-scale approach to river conservation that involves a river from its headwaters to its mouth and across its watershed, rather than individual segments of the channel and riparian area alone. Establishment of a National Blueways System will help promote best practices, share information and resources, and encourage active and collaborative stewardship of rivers across the country.”*

The Cache River has been designated as a National Blueways Pilot Project and implementation of this expansion will directly facilitate the fulfillment of the purpose and goals of the Blueways System. Additionally, the conservation benefits derived from implementation of this project will significantly contribute to the health and stability of the watershed in direct agreement with the Blueway concept for integration of land and water stewardship efforts. Moreover, the AGO working group listed achievement of National Blueways designation for the Cache River/White River watershed as a high-priority, short-term objective

#### *INTERNATIONAL PRIORITY WETLAND AREAS*

The Cache and White Rivers Ecosystem was designated as a "**Wetland of International Importance**" in 1989 (and updated in 2011), under the auspices of the "Convention on Wetlands of International Importance Especially as Waterfowl Habitat," commonly referred to as the Ramsar Convention. The Convention criteria, under which these lands qualified as the eighth U.S. Wetlands of International Importance, were:

- Volume of use by migratory and resident waterfowl, especially mallards;
- Outstanding example of a wetland community characteristic of its bio-geographic region;
- Endangered species;
- Species diversity;
- Research value; and
- Practicality of conservation and management.

Implementation of this project will further promote the biological and ecological significance for which the Cache River/White River Basin was originally recognized, will directly facilitate the enhancement of the watershed in all areas of Ramsar criteria listed above, and further demonstrate the importance of this ecosystem.

#### *GULF COASTAL PLAINS AND OZARKS LANDSCAPE CONSERVATION COOPERATIVE*

To ensure that the Service is “putting science in the right places,” the Service Directorate determined in April 2009, that the agency needed a national, geographic framework for implementing landscape conservation. Just as migratory bird flyways have provided an effective spatial frame of reference to build capacity and partnerships for international, national, state, and local waterfowl conservation, this geographic framework will provide a continental platform upon which the Service could work with partners to connect site-specific efforts to larger biological goals and outcomes. In its meeting on August 4-6, 2009, the Directorate approved a geographic framework developed by a team of Service and U.S. Geological Survey experts from across the country. Geographic areas were defined that provide a spatial frame of reference for building and targeting science capacity that will support the Service and partners in planning and designing conservation strategies at landscape scales. It also

allows us to more precisely explain to partners, Congress, and the American public why, where, and how we target conservation resources and how our science-based efforts connect to a greater whole. Currently, Cache River NWR falls in the Gulf Coastal Plains and Ozarks (GCPO) Landscape Conservation Cooperative (LCC). Cache River NWR provides habitat for many of the priority species in the GCPO LCC (Table 1). Implementation of this boundary expansion will enable additional lands to be conserved, restored, and enhanced for the benefit of priority species.

**Table 1. Priority bottomland forest species of the Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative**

Priority Bottomland Forest Species	
Southeastern Myotis Bat	Swainson’s Warbler
Rafinesque’s Big-eared Bat	Hooded Warbler
Swallow-tailed Kite	Wood Thrush
Swamp Rabbit	Prothonotary Warbler
Mississippi Kite	American Woodcock
Bird-voiced Treefrog	Mole Salamander

*LOWER MISSISSIPPI RIVER ECOSYSTEM*

The Lower Mississippi River Ecosystem (LMRE) is the primary wintering habitat for mid-continent waterfowl populations, as well as breeding and migrating habitat for songbirds returning from Central and South America. Furthermore, it provides high-quality habitat for a myriad of resident wildlife species, including some that are rare and imperiled. Geographically, the refuge lies on the northwestern boundary of the LMRE. Members of the Cache River NWR staff are active participants of the Service’s LMRE team. The boundary expansion of the Cache River NWR will contribute significantly to the following priorities identified for the LMRE:

- Protect key habitats and manage populations of migratory birds and endangered species;
- Halt degradation of bottomland hardwood systems and their associated plant and animal communities; and
- Increase public awareness and interest in the values of trust fish and wildlife, their habitats, and the ecosystems they depend upon.

With the expansion, the refuge will further support the following goals of the LMRE:

- Conserve, enhance, protect, and monitor migratory bird populations and their habitats in the LMRE;
- Protect, restore, and manage the wetlands of the LMRE;
- Protect and/or restore imperiled habitats and viable populations of all threatened, endangered, and candidate species and species of concern in the LMRE;
- Protect, restore, and manage the fisheries and other aquatic resources historically associated with the wetlands and waters of the LMRE;
- Restore, manage, and protect national wildlife refuges and national fish hatcheries;

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- Increase public awareness and support for LMRE resources and their management;
  - Enforce natural resource laws; and
  - Protect, restore, and enhance water and air quality throughout the LMRE.

### *FISH AND WILDLIFE SERVICE*

The Service is the primary federal agency responsible for conserving, protecting, and enhancing the Nation's fish and wildlife resources and their habitats. The mission of the Service is "*working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.*" Objectives of this acquisition boundary are directly relevant to and will promote all of the conservation priorities of the Service:

- National Wildlife Refuge System;
- Landscape Conservation;
- Migratory Birds;
- Threatened and Endangered Species;
- Aquatic Species; and
- Connecting People with Nature.

### *NATIONAL WILDLIFE REFUGE SYSTEM*

This boundary expansion directly supports fulfillment of the mission of the National Wildlife Refuge System, which 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.*"

According to the Improvement Act, the Service is required to conserve the biological integrity, diversity, and environmental health of refuges, and consider the conservation of the ecosystems of the United States, while planning the growth of the Refuge System. The acquisition, protection, restoration, and management of areas within the current acquisition and this Final LPP should significantly improve the functionality, integrity, diversity, and health of the Cache River NWR and its ecosystem. In turn, these actions will strengthen the conservation impact of the Refuge System as a whole.

### *NORTH AMERICAN WATERFOWL MANAGEMENT PLAN*

Implementation of this expansion will contribute to habitat and population goals of the North American Waterfowl Management Plan (NAWMP), as stepped down through the LMVJV by providing additional critical habitats for wintering waterfowl in the Cache River Basin. Increased acres of managed habitats on the refuge will increase the Duck Energy Day (DED) output or capacity to successfully winter waterfowl. Additional restored forested and wetland habitats will enhance migratory and resident waterfowl feeding, roosting, and brooding habitats. Furthermore, this project will assist in meeting NAWMP Joint Venture Habitat Objectives of protecting/securing 407,000 acres and restoring/enhancing 2,046,000 acres of waterfowl habitat in the LMV.

### *PARTNERS IN FLIGHT BIRD CONSERVATION PLAN*

Similarly, the expansion will assist in meeting objectives for Forest Breeding Birds in the MAV by providing sufficient forest habitat to support forest breeding birds designated as high priority in the MAV (Bird Conservation Region 26) through forest restoration on new parcels and silvicultural management of existing forested tracts.

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In addition to the positive contributions of this project described above, this Final LPP will also assist the refuge in meeting land protection, habitat restoration and enhancement, population, and partnership goals/objectives of the following national, regional, and local plans and initiatives:

- U.S. Shorebird Conservation Plan
- American Woodcock Management Plan
- Southeast U.S Waterbird Conservation Plan
- Northern Bobwhite Quail Initiative
- American Woodcock Management Plan
- Fisheries Vision For The Future
- Southeast Aquatic Resource Partnership
- Mississippi River Basin Healthy Watershed Initiative
- Arkansas Comprehensive Wildlife Conservation Strategy
- Arkansas Wildlife Action Plan
- Arkansas Conservation Delivery Network Action Plan
- Cache/White Rivers – Arkansas Big Woods - Collaborative Conservation Focus Area
- Beyond the Boundaries Initiative
- Endangered Species Recovery Plans

#### *CENTRAL ARKANSAS NWR COMPLEX COMPREHENSIVE CONSERVATION PLAN*

The expansion directly contributes to the Resource Protection goal, objective, and strategies for Cache River NWR in the Central Arkansas National Wildlife Refuge Complex Comprehensive Conservation Plan (CCP), approved in 2009.

Cache River Goal 3 states:

*“Promote communication, cooperation, and partnerships between local, state, and federal agencies, land managers, and private citizens to minimize impacts from off-site environmental degradation and other threats to the functions and values of the refuge’s associated wetland ecosystems and watersheds.”*

Under this goal, Objective 3-4 (Land Acquisition) states:

*“Acquire lands from willing sellers within or adjacent to the approved acquisition boundary of the refuge to enhance conservation programs, achieve legislated purposes of the refuge, and fulfill the mission of the Refuge System.”*

Additionally, under this objective, the following strategies were developed as necessary to enhance the LMRE:

- *Over the long term (i.e., the 15-year span of this CCP and beyond), consider expansion of the refuge acquisition boundary in response to the need for additional conservation of important wildlife habitats by considering:*
- *Create a wildlife corridor from the Cache River to Bayou DeView at Howell, which would not only connect these two forest blocks, but would also secure a range of diverse habitats (upland to bottomland) and provide secure habitat for wildlife escaping winter flooding; several properties that would help achieve this purpose are available from willing sellers;*

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- *Extend the acquisition boundary from Amagon to Grubbs or possibly north of Grubbs;*
  - *Broaden the acquisition boundary to conserve unprotected lands along the White River, particularly adjacent to Wattensaw WMA and South of I-40;*

The expansion, when implemented, will enable the undertaking of these strategies to the fulfillment of refuge purposes, CCP Objectives, and the Refuge System mission. This Final LPP also will assist the refuge in meeting the following objectives from the CCP:

- *Cache River NWR CCP Objective 1-1: Migratory Waterfowl*
- *Cache River NWR CCP Objective 1-2: American Woodcock*
- *Cache River NWR CCP Objective 1-6: Forest Breeding Birds*
- *Cache River NWR CCP Objective 1-9: Eastern Wild Turkey*
- *Cache River NWR CCP Objective 1-10: White-tailed Deer*
- *Cache River NWR CCP Objective 1-11: Furbearers*
- *Cache River NWR CCP Objective 1-12: Small Game (Mammals)*
- *Cache River NWR CCP Objective 1-13: Black Bears*
- *Cache River NWR CCP Objective 1-14: Bats*
- *Cache River NWR CCP Objective 1-15: Reptiles and Amphibians*
- *Cache River NWR CCP Objective 1-16: Fisheries, Mussels, and Aquatic Habitat Management*
- *Cache River NWR CCP Objective 1-17: Endangered Species and Species of Concern*
- *Cache River NWR CCP Objective 1-18: Ivory-billed Woodpecker*

## **PARTNERSHIP EFFORTS/RELATED RESOURCES**

Multiple federal and state agencies, as well as non-governmental entities and private parties, sponsor, conduct, support, and promote natural resources conservation and habitat management programs throughout or near the expansion area. One of the primary purposes for the project is to link these various conservation areas and extend their overall conservation effectiveness. The expansion area will serve to connect a complex of federal, state, non-governmental, and private conservation lands and will provide additional habitat restoration, management, enhancement, and partnership opportunities.

Wildlife/habitat conservation areas managed or protected within or in the vicinity of the expansion area include (Figures 2 and 3):

- Bald Knob National Wildlife Refuge
- Cache River National Wildlife Refuge
- White River National Wildlife Refuge
- Earl Buss Bayou DeView Wildlife Management Area (WMA)
- Rex Hancock Black Swamp WMA
- Sheffield Nelson Dagmar WMA
- Henry Gray Hurricane Lake WMA
- Steve N. Wilson Raft Creek WMA
- Mike Freeze Wattensaw WMA
- Benson Creek Natural Area/WMA
- Cache River Natural Area

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Bayou Des Arc WMA, Railroad/Prairie Natural Area, and Downs Prairie Natural Area are not included within or adjacent to the expansion area, but are situated in the vicinity and could be connected within the scope of a potential future expansion that truly will attain landscape/watershed scale.

Cache River, White River, and Bald Knob NWRs are active participants of the Service's LMRE Team. The LMRE is the primary wintering habitat for mid-continent waterfowl populations, as well as breeding and migrating habitat for songbirds returning from Central and South America. Cache River, Bald Knob, and White River NWRs are contributors to many of the goals and objectives established for the protection and management of the LMRE.

The Nature Conservancy and its partners, including the Service, have protected more than 120,000 acres in the Big Woods of Arkansas, a 550,000-acre corridor of floodplain forest along the Mississippi River. A significant component of the corridor includes national wildlife refuge lands. In 2004, the ivory-billed woodpecker, thought to be extinct, was rediscovered within the corridor and floodplain of Bayou DeView (Fitzpatrick et al. 2005). Major conservation and restoration priorities for the Big Woods have been identified and the Nature Conservancy, the Service, the Arkansas Natural Heritage Commission, the Arkansas Game and Fish Commission, and others continue to focus efforts on these ecologically important lands. The Nature Conservancy has partnered with the refuge to enable the purchase of thousands of acres of land for Cache River NWR, has provided technical advice and assistance in habitat restoration and management programs, and continues to support the refuge's outreach programs.

The National Wildlife Refuge Association has selected Cache River NWR as one of its highest priority projects in the Refuge System for habitat and wildlife conservation, partnership engagement, and public benefit. The National Wildlife Refuge Association established the Beyond the Boundaries Initiative designed to promote and facilitate landscape-scale conservation initiatives centered on priority refuges. Additionally, it has facilitated recent land acquisition transactions on Cache River NWR, and has pledged to partner with the refuge to implement the expansion project.

The Conservation Fund also has been a land acquisition partner in the past and is expected to provide assistance in the future. The refuge is a participant in the AGO working group for Cache River, as previously described. The refuge also participates in the efforts of the Arkansas Conservation Delivery Network, a subgroup of the LMVJV that is a collaboration of many organizations involved in conservation and management of wildlife habitats and ecosystems in the Cache and White River Basins. Included in the network are the Service, NRCS, USDA Forest Service, AGFC, ANHC, TNC, DU, and Audubon-Arkansas.

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### III. Land Protection Strategy

#### **ACTION AND OBJECTIVES**

In determining how to achieve the fish and wildlife habitat protection goals for the project lands identified in this document, we considered and evaluated three alternatives. Alternative 2 is our alternative, because it better serves the outlined purpose and need, as well as the stated goals and objectives, and the vision and purposes of the refuge. This project will meet both present and future land conservation and resource protection needs for Cache River NWR. By protecting additional conservation lands critical to the management of refuge resources, this project is tied to many of the goals and objectives of the Central Arkansas NWR Complex Comprehensive Conservation Plan (USFWS 2009).

#### **LAND PROTECTION PRIORITIES**

The Service selected action (Alternative 2) will result in the acquisition of 101,110 acres of wildlife habitat as an expansion of Cache River NWR, through a combination of fee-title purchases from willing sellers and less-than-fee interests (e.g., conservation easements and cooperative agreements) from willing sellers. The Service believes these are the minimum interests necessary to conserve and protect the fish and wildlife resources in the area.

The private property within the expansion area 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.

There are approximately 101,110 acres in private holdings within the expansion area (Table 2). The overall average holding for a single private ownership is around 176 acres. Numerous tracts in the expansion areas are currently willing sellers, and local support of the refuge and its expansion is expected to be favorable. Many users of the refuge have expressed the desire for the refuge to increase in size. Frequent requests have been made by landowners outside the current approved acquisition boundary, but within the expansion area, for the refuge to purchase their properties. Many of these tracts actually border current refuge property, yet are still outside the approved boundary.

**Table 2. Acreage and ownership of expansion areas**

<b>Area Number</b>	<b>Area</b>	<b>Approximate Number of Landowners</b>	<b>Acres</b>
<b>1</b>	<b>Cache River/Bayou DeView Corridor</b>	167	38,483
<b>2</b>	<b>Bayou DeView Peripheral</b>	192	32,630
<b>3</b>	<b>Cache River Peripheral</b>	217	29,997
<b>Total</b>		<b>576</b>	<b>101,110</b>

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The preferred acquisition method is fee-title from willing sellers only. This may be accomplished in part through normal refuge acquisition funds as addressed in the Funding section. Additionally, conservation easements and memoranda of agreements also will be utilized to acquire interests in lands within the expansion area as necessary and feasible.

Three categories of land acquisition have been established, with the highest priority being the Priority I lands. A description of the lands within each of the three priority groups is provided below. Table 3 summarizes the Service's land protection priorities and methods of acquisition. Locations of the project areas and their respective priority groups are depicted in Figure 5. The majority of owners in the expansion areas is private landowners, including individuals, incorporated farms, and other private entities. Other ownership types are Arkansas Game and Fish Commission and Arkansas Natural Heritage Commission. Ownership type, as well as an acreage breakdown by area, is provided in Table 3. Parcel locations are depicted in Figures 6 through 12.

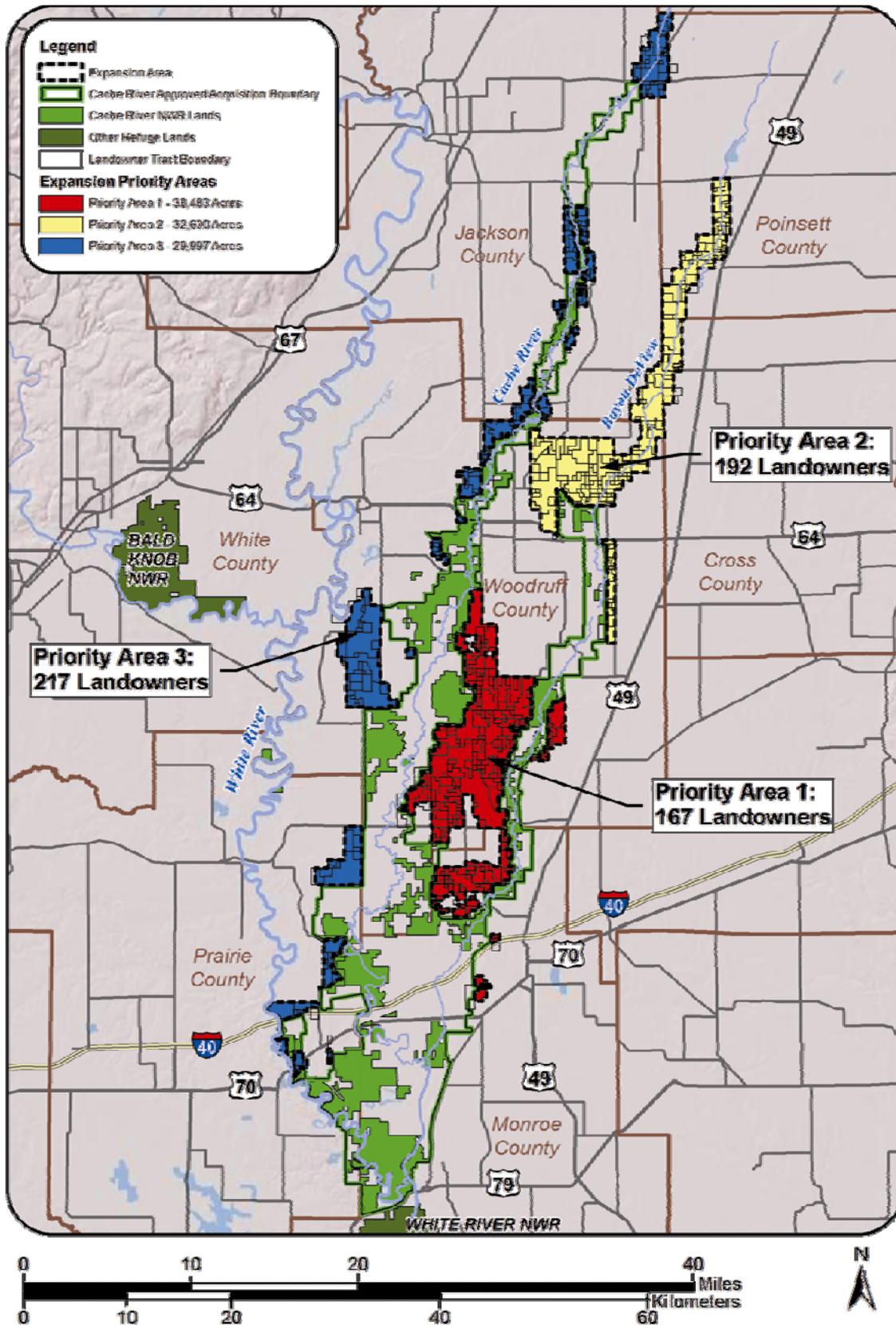
### **Priority Group I – Cache River/Bayou DeView Corridor – 38,483 acres**

Acquisition of this area (Figure 5) will enable hydrologic and habitat restoration within this broad and critical gap between the two major prongs (Cache River and Bayou DeView) of the current acquisition boundary, and provide a unique opportunity to restore a comprehensive suite of habitat communities and functionally reconnect these two watersheds. These improvements will support achievement of refuge purposes to an extent not possible without such expansion, and resulting connection, restoration, conservation, and management programs. Currently, only about 15 percent of this 38,483-acre area is forested; the remainder has been cleared for agriculture. Additionally, threats to the ecological health and integrity of the refuge could be significantly reduced by correcting the altered hydrologic regime resulting from agricultural conversions, curbing non-point source pollution, and reestablishing native plant communities. This area historically contained significant components of habitat now underrepresented in the landscape: Post Oak Flats and Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory, with willow oak in vernal pools and minor drains, and especially Upland Hardwoods of southern red oak and post oak woodland/savannah.

### **Priority Group II – Bayou DeView Peripheral – 32,630 acres**

This area (Figure 5) extends the zone of protection of the historic channel of Bayou DeView from the current acquisition boundary northward to connect to Bayou DeView State WMA holdings; the area also extends in strategic areas to the west and east to encompass desirable habitat and improve access and management capability. Most of the area has been cleared for agriculture, with only around 6 percent remaining as forest in scattered blocks. This area historically contained significant components of habitat now underrepresented in the landscape: Wet Phase Hardwood Flats of delta post oak; Post Oak Flats; and Dry Phase Hardwood Flats of post oak, southern red oak, and shagbark hickory; and Upland Hardwoods of southern red oak and post oak woodland/savannah. The main expansion northward will provide a critical riparian habitat buffer for Bayou DeView, and allow hydrologic restoration and water quality improvement both here and downstream. This area will enable future restoration efforts to restore more natural flows through the historic bayou channel and reestablishment of more normally functioning riparian corridor and floodplain. Moreover, a significant connection between the Cache River and Bayou DeView could be restored that will augment the connections established downstream as a result of restoration activities accomplished in Priority Group 1. Significant benefits to the Bayou DeView system also will be derived from reducing erosion and sedimentation, surface water withdrawal, chemical and nutrient runoff, and stream zone disturbance.

Figure 5. Land protection priority groups within the expansion areas



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### **Priority Group III – Cache River Peripheral – 29,997 acres**

The Cache River Peripheral area (Figure 5) expands the current acquisition boundary 29,997 acres in several blocks strategically located along the western and northern sides of the Cache River watershed. Similar in function to Area 1, this expansion area will enable restoration and at least partial connection of the watersheds of the White and Cache Rivers. Currently, only about 15 percent of the area is forested; the remainder is agricultural land.

Historically, this area contained broad expanses of Riverine Backwater, Holocene Point Bar, and Backswamp communities. This area also contained ecologically important habitat types now underrepresented in the landscape, such as dunes containing black oak, post oak, southern red oak, prairie grasses, prickly pear, and blackjack oak (dunes are soils made up of wind-blown sands; these dune fields are unique to the Arkansas Delta Region of the LMV, and scarcely represented on only a few acres of the refuge); post oak flats; and isolated sand ponds that historically supported shrub species of concern, such as corkwood (*Leitneria floridana*) [state listed as vulnerable], and the federally endangered pondberry (*Lindera melissifolia*).

Achievement of refuge purposes will be enhanced through this expansion, because unique habitats beneficial to trust species, but not encompassed in the current acquisition boundary, will be conserved. Furthermore, this expansion will enable the refuge to take preliminary steps to conserve and connect Cache River habitats to conserved habitats along the White River, which is the predominant hydrologic force in this area. This will ultimately result in significant benefits to waterfowl, other migratory birds, declining fish species, endangered mussels, and other native wildlife. Additionally, a major blockage in the Cache River exists at the junction of the channelized and non-channelized courses in the northernmost end of this expansion area. Acquisition within this area could potentially contribute to proper remediation of the blockage, improvement in hydrologic function for the Cache River, reduction in damaging flood events for area farmers and residents, and restoration of riparian habitat.

### **LAND PROTECTION OPTIONS**

The Service acquires lands 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-dependent public use for recreation and education purposes. These lands include national wildlife refuges, national fish hatcheries, research stations, and other areas.

We will use the following options to implement this Final LPP:

- Option 1: Fee-title acquisition by the Service
- Option 2: Less-than-fee-title acquisition by the Service
- Option 3: Management or land protection by others

When land is needed to achieve fish and wildlife conservation objectives, the Service seeks to acquire the minimum interest necessary to meet those objectives, and acquire it only from willing sellers. Our project includes a combination of Options 1, 2, and 3, as stated above. The Service believes this approach offers a cost-effective way of providing the minimal level of protection needed to accomplish refuge objectives, while also attempting to meet the needs of local landowners.

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### ***Option 1. Fee-title acquisition by the Service***

Under Option 1, the Service will acquire parcels in fee-title from willing sellers, thereby purchasing all rights of ownership. This option will provide us the most flexibility in managing priority lands, and ensuring the protection in perpetuity of nationally significant trust resources.

Generally, the lands the Service purchases require more intervention than passive management, and we employ methods such as reforestation, wetland restoration, silvicultural treatments, water level management, mowing, prescribed burning, invasive species control, cooperative farming, or administering and managing public access and wildlife-dependent recreation. We only propose fee-title acquisition when adequate land protection is not assured under other ownerships, specialized active land management is required, or when the current landowner will be unwilling to sell a partial interest, such as a conservation easement.

In some cases, it may become necessary to convert a previously acquired conservation easement to fee-title acquisition; for example, when an owner is interested in selling the remainder of interest in the land on which we have previously acquired an easement. We will evaluate that need on a case-by-case basis.

### ***Option 2. Less-than-fee-title acquisition by the Service***

Under Option 2, the Service will protect and manage land by purchasing only a partial interest, typically in the form of a conservation easement. This option leaves the parcel in private ownership, while allowing the Service control over the land use in a way that enables us to meet our goals for the parcel, or that provides adequate protection for important adjoining parcels and habitats. The structure of such easements will provide permanent protection of existing wildlife habitats, while also allowing habitat management or improvements and access to sensitive habitats, such as for endangered species or migratory birds. We will determine, on a case-by-case basis, and negotiate with each landowner, the extent of the rights the landowner will be willing to relinquish and those we will be interested in acquiring. Those may vary, depending on the configuration and location of the parcel, the current extent of development, the nature of wildlife activities in the immediate vicinity, the needs of the landowner, and other considerations.

In general, any less-than-fee-title acquisition will maintain the land in its current configuration with no further subdivision. Easements are a property right, and typically are perpetual. If a landowner later sells the property, the easement will continue as part of the title. Properties subject to easements generally remain on the tax rolls, although the change in market value may reduce the assessment. The Service does not pay refuge revenue sharing on easement rights. Where we identify conservation easements, we will be interested primarily in purchasing development and some wildlife management rights. Easements are best when: (1) Only minimal management of the resource is needed, but there is a desire to ensure the continuation of current undeveloped uses and to prevent fragmentation over the long-term, and in places where the management objective is to allow vegetative succession; (2) a landowner is interested in maintaining ownership of the land, does not want it to be further developed, and would like to realize the benefits of selling development rights; (3) current land use regulations limit the potential for adverse management practices; (4) the protection strategy calls for the creation and maintenance of a watershed protection area that can be accommodated with passive management; or (5) only a portion of the parcel contains lands of interest to the Service.

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The determination of value for purchasing a conservation easement involves an appraisal of the rights to be purchased, based on recent market conditions and structure in the area. The Land Protection Methods' section further describes the conditions and structure of easements.

### ***Option 3. Management or Land Protection by Others***

More than 50,000 acres of land adjacent to, and ecologically important to, the project is already owned by our partners or managed by our partners through conservation easements. It should also be emphasized that the protection of this area fits well into a landscape-scale wildlife and habitat corridor that is being pieced together in the area. This project will serve as an important keystone in this conservation effort. The following partners own, manage, or have restored property within or in the vicinity of the project area: AGFC, ANHC, NRCS, DU, TNC, and U.S. Army Corps of Engineers.

## **LAND PROTECTION METHODS**

The Service will use several methods of acquiring either a full or a partial interest in the parcels identified for land protection in this project: (1) Fee-title purchase; (2) easement purchase; (3) donation; (4) exchanges; and (5) leases and cooperative agreements.

### ***Purchase***

For most of the tracts in the boundary, the method is listed as *Fee* or *Easement*; however, the method the Service ultimately uses depends partly on the landowners' wishes. We will purchase land from willing sellers only.

#### *Fee-Title Purchase*

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

Fee-title purchase 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 (as the availability of funding allows).

#### *Easement Purchase*

Easement purchase refers to the purchase of limited rights (less-than-fee-title) from an interested landowner. The landowner will retain ownership of the land, but will sell certain rights identified and agreed upon by both parties. The objectives and conditions of our conservation easements will recognize lands for their importance to wildlife habitat or outdoor recreational activities, and any other qualities that recommend them for addition to the Refuge System. Land uses that are normally restricted under the terms of a conservation easement include: (1) Development rights (agricultural, residential, etc.); (2) alteration of the area's natural topography; (3) uses adversely affecting the area's floral and faunal communities; (4) private hunting and fishing leases; (5) excessive public access and use; and (5) alteration of the natural water regime.

### ***Donation***

We encourage donations in fee-title or conservation easement in the approved areas. We are not currently aware of any formal opportunities to accept donations of parcels within our land protection boundary.

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### ***Exchanges***

We have the authority to exchange land in Service ownership for other land that has greater habitat and wildlife value. However, inherent in this concept is the requirement that the exchange provide clear and compelling benefit to the refuge, Refuge System, and the public. Real estate value must be met dollar-for-dollar with, occasionally, an equalization payment. Resource, ecosystem, and public use values must be met or exceeded for land received compared to Service interest divested. Although exchanges do not require purchase funds (unless an equalization payment is required), they may be very labor-intensive, take a long time to complete, and require expenditure of acquisition funds for requirements, such as appraisals, surveys, and title work.

### ***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 permanent land protection can be negotiated.

## **SERVICE LAND ACQUISITION POLICY**

Once a land protection (refuge acquisition) boundary has been approved, the Service can contact neighboring landowners to determine whether any are interested in selling. More commonly, however, the landowner approaches the refuge manager to inquire whether the Service will be interested in purchasing his/her property for the refuge. If a landowner expresses an interest and gives the Service permission, a real estate appraiser will appraise the property to determine its current fair market value. Once an appraisal has been approved, we can present an offer for the landowner's consideration.

Appraisals conducted by Service or contract appraisers must meet federal, as well as professional, appraisal standards. In all fee-title acquisition cases, the Service is required by federal law to offer 100 percent of the property's appraised current fair market value, which is typically based on comparable sales of similar types of properties.

We based the land protection (refuge acquisition) boundary primarily on the biological/ecological importance and strategic conservation potential of key tracts. The establishment or expansion of this boundary will give the Service approval to negotiate with landowners that may be interested, or may become interested, in selling their land in the future. With this internal approval in place, the Service can react more quickly as important lands and funding become available. Our long-established policy is to work with willing sellers only and we continue to operate under that policy. Lands within this boundary do not become part of the refuge, unless their owners willingly sell or donate them to the Service.

## **FUNDING**

Funding for acquisition will likely come from the Migratory Bird Conservation Fund (MBCF), Land and Water Conservation Fund (LWCF), North America Wetlands Conservation Act Fund, and from non-governmental partners. The MBCF and LWCF are not derived from traditional tax revenues. The MBCF is collected from the sale of Federal Duck stamps, entrance fees from certain national wildlife refuges, and import duties on arms and ammunition. The LWCF is derived from royalties paid to the Federal Government by companies drilling offshore for oil and gas. Both the MBCF and LWCF are intended for land conservation and may be used to purchase the land and/or permanent conservation easements.



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## *IV. Coordination*

Throughout the planning process for the Cache River NWR Acquisition Boundary Expansion, the Service solicited and carefully considered public comments regarding Service land protection within the Cache River Basin. The Service worked with other federal partners, Native American tribes, State of Arkansas, county governments, various municipalities, local land trusts, local and national conservation organizations, landowners, farmers, area residents, and the general public in this endeavor. Several federal and state agencies serve as key partners in this landscape. Extensive, targeted internal and external government and non-governmental outreach and partnership scoping was conducted beginning in February 2012, which included the following: State and Federal Congressional Representatives; Arkansas Governor's office; Arkansas Game and Fish Commission; Arkansas Natural Heritage Commission; Arkansas Forestry Commission; Arkansas Parks and Tourism Department; Arkansas Department of Environmental Quality; Arkansas Natural Resources Commission; Arkansas Department of Agriculture; Natural Resources Conservation Service; National Park Service; USDA Farm Service Agency; U.S. Army Corps of Engineers; The Nature Conservancy; The Conservation Fund; National Wildlife Refuge Association; Ducks Unlimited; Audubon Arkansas; Arkansas Wildlife Federation; Tribal governments, local officials; affected landowners; and the public. These partners were keys to the development of this project.

### **PUBLIC SCOPING**

Public scoping assisted the Service in identifying issues and concerns, potential alternatives, and scientific information regarding the Study Area of this project. Preliminary scoping on February 3, 2012, with a coordination meeting with the Arkansas Game and Fish Commission, which was followed on February 8, 2012, by briefing of the State and Federal Congressional Representatives. This was followed by preliminary informational presentations to the Arkansas Governor's office; Arkansas Game and Fish Commission; Arkansas Natural Heritage Commission; Arkansas Forestry Commission; Arkansas Parks and Tourism Department; Arkansas Department of Environmental Quality; Arkansas Natural Resources Commission; Arkansas Department of Agriculture; Natural Resources Conservation Service; National Park Service; USDA Farm Service Agency; U.S. Army Corps of Engineers; The Nature Conservancy; The Conservation Fund; National Wildlife Refuge Association; Ducks Unlimited; Audubon Arkansas; Arkansas Farm Bureau; Farm Bureaus of Monroe, Prairie, and Woodruff Counties; and County Judges in the six counties involved in the expansion project.

A news release announcing the intent of the Service to develop a Land Protection Plan and associated NEPA documents for the proposed Cache River NWR acquisition boundary expansion was sent out to over ten local media outlets. Informational flyers were sent out to area partners identified above. Public scoping comments were requested to be received by June 10, 2012.

Extensive internal and external, governmental and non-governmental, partner, and public outreach and scoping were conducted during February through June 2012. The Cache River NWR boundary expansion project has overall support of local congressional staff, the Arkansas Governor's office, local officials, Arkansas Game and Fish Commission, Arkansas Natural Heritage Commission, Arkansas Forestry Commission, Arkansas Parks and Tourism Department, Arkansas Department of Environmental Quality, Arkansas Natural Resources Commission, Arkansas Department of Agriculture; Natural Resources Conservation Service, National Park Service, USDA Farm Service Agency, U.S. Army Corps of Engineers, The Nature Conservancy, The Conservation Fund, National Wildlife Refuge Association, Ducks Unlimited, Arkansas Audubon, Arkansas Wildlife Federation, and the public.

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Public scoping comments were submitted verbally and in writing at public scoping meetings and by mail and e-mail. Three public scoping meetings were conducted in and around the Study Area on the following dates: May 7, 2012, at Newport High School Cafeteria, with about 28 attendees; May 8, 2012, at Augusta Elementary School Cafeteria, with about 21 attendees; and May 10, 2012, at the Brinkley Convention Center, with about 18 attendees. Both verbal and written comments were submitted at the public scoping meetings. Further, over ten written comments were submitted to the Service during the public scoping period in person and by mail and e-mail. Initial public reaction to the refuge expansion generally was favorable, with no explicit opposition received. Some questions or concerns were raised by individuals regarding property taxes, acquisition funding sources, use of condemnation, potential restrictions on private lands, economic impacts, restrictions on public use, and problems associated with the Cache River blockage near Grubbs, Arkansas. Many comments indicated a desire to expand the refuge to include areas not initially delineated in the preliminary planning project. Numerous comments also received indicated that the project boundary should be expanded further to: (1) Restore marginal agricultural lands to forest or wetland habitats; (2) enlarge contiguous blocks of habitat for neotropical migratory birds, ivory-billed woodpeckers, wintering waterfowl, and other native wildlife; (3) serve as a partial connection of a complex of federal, state, non-governmental, and private conservation lands; (4) increase size and function of habitat corridors; (5) provide greater riparian buffers; and (6) increase public use opportunities. During the three public meetings, support for the expansion was expressed, and several landowners indicated that they will be willing sellers.

## **PUBLIC REVIEW AND COMMENT**

The Draft Land Protection Plan/Draft Environmental Assessment (Draft LPP/Draft EA) for the proposed expansion was made available to the public on October 1, 2012, for a 30-day comment period, which ended on October 31, 2012. With the release of the Draft LPP/Draft EA, the Service mailed letters and postcards to nearly 500 interested parties to announce the upcoming availability of the document for public review and to allow interested parties to request CD and/or paper copies of the document. A news release was sent out to Arkansas media outlets to announce the public review and comment period for the proposed expansion of Cache River NWR. Public notices were printed in *The Arkansas Democrat Gazette*, the *Brinkley Argus*, the *Woodruff County Monitor*, and the *Newport Independent*. Information was also posted on the project's website (<http://www.fws.gov/southeast/cacheriverexpansion>), notices were mailed and e-mailed to the mailing list, and articles were published in various media. Paper and/or CD copies of the Draft LPP/Draft EA were mailed to requesting parties and the mailing list of over 115 individuals and organizations. The documents were also posted on the project's website. During the comment period, the Service held a public meeting from 6 to 8 o'clock p.m. on October 9, 2012, at the Augusta High School Cafeteria, 1011 Main Street, Augusta, AR (with 36 attendees).

The Service received over 13 comments during the public review and comment period (see Appendix F for a summary of the substantive comments and the Service's responses). Following the public review and comment period, the Service reviewed all comments submitted to assist in developing this Final LPP (see Appendix J for the summary of public comments on the Draft LPP/Draft EA and the Service's responses).

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## V. *Strategic Habitat Conservation and Landscape Conservation Cooperatives*

Strategic habitat conservation (SHC) is a means of applying adaptive management across large landscapes. Landscape conservation cooperatives (LCCs) will facilitate SHC (USFWS 2008). This expansion will apply the SHC framework as outlined in the National Ecological Assessment Team report. SHC involves an ongoing cycle of biological planning, conservation design, conservation delivery, outcome-based monitoring, and assumption-based research. It is also the process by which the Service continues to develop and apply science focused on improving the ability to apply conservation delivery actions, which result in landscapes capable of supporting populations of priority species at desired levels. Additionally, SHC provides the framework by which the Service develops and applies science to inform and continually improve conservation delivery by addressing landscape-level population limiting factors in an adaptive manner.

The Service will use LCCs as a means of implementing SHC. LCCs are formal science and management partnerships between the Service, U.S. Geological Survey, other federal agencies, states, tribes, non-governmental organizations, universities, and others to increase applied conservation science capacity in support of fish and wildlife management within specific landscapes. The tools developed by the LCCs allow Service offices, and our many partners, to implement on-the-ground actions in the most effective locations to meet their goals. Cache River NWR is located in the Gulf Coastal Plains and Ozarks LCC.

Eventually, fully unifying these expansion areas and their associated resource conservation efforts will magnify resource conservation benefits landscape-wide, and are in accordance with the Service Director's mandate for SHC.

**Table 3. Protection priorities for the expansion and recommended methods of acquisition**

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
<b>Cache River / Bayou DeView Corridor</b>				
1	1	Private	122	Fee Title
1	2	Private	1,269	Fee Title
1	3	Private	40	Fee Title
1	4	Private	9	Conservation Easement
1	5	Private	138	Fee Title
1	6	Private	77	Fee Title
1	7	Private	1,556	Fee Title
1	8	Private	741	Fee Title
1	9	Private	81	Fee Title
1	10	Private	165	Fee Title
1	11	Private	292	Fee Title
1	12	Private	54	Fee Title
1	13	Private	125	Fee Title
1	14	Private	42	Fee Title
1	15	Private	354	Fee Title
1	16	Private	39	Fee Title
1	17	Private	240	Fee Title
1	18	Private	158	Fee Title
1	19	Private	16	Fee Title
1	20	Private	498	Fee Title
1	21	Federal	289	Fee Title
1	22	Private	38	Fee Title
1	23	Private	218	Fee Title
1	24	Private	545	Fee Title
1	25	Private	508	Fee Title
1	26	Private	41	Fee Title
1	27	Private	406	Fee Title
1	28	Private	1,742	Fee Title
1	29	Private	259	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
1	30	Private	222	Fee Title
1	31	Private	83	Fee Title
1	32	Private	126	Fee Title
1	33	Private	534	Fee Title
1	34	Private	383	Fee Title
1	35	Private	39	Fee Title
1	36	Private	81	Fee Title
1	37	Private	120	Fee Title
1	38	Private	41	Fee Title
1	39	Private	362	Fee Title
1	40	Private	61	Fee Title
1	41	Private	1,121	Fee Title
1	42	Private	527	Fee Title
1	43	Private	259	Fee Title
1	44	Private	11	Fee Title
1	45	Private	38	Fee Title
1	46	Private	197	Fee Title
1	47	Private	162	Fee Title
1	48	Private	42	Fee Title
1	49	Private	1,908	Fee Title
1	50	Private	61	Fee Title
1	51	Private	42	Fee Title
1	52	Private	79	Fee Title
1	53	Private	80	Fee Title
1	54	Private	159	Fee Title
1	55	Private	612	Fee Title
1	56	Private	1,394	Fee Title
1	57	Private	35	Fee Title
1	58	Private	338	Fee Title
1	59	Private	41	Fee Title
1	60	Private	42	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
1	61	Private	47	Fee Title
1	62	Private	557	Fee Title
1	63	Private	24	Fee Title
1	64	Private	16	Fee Title
1	65	Private	238	Fee Title
1	66	Private	86	Fee Title
1	67	Private	77	Fee Title
1	68	Private	128	Fee Title
1	69	Private	138	Fee Title
1	70	Private	1,061	Fee Title
1	71	Private	19	Fee Title
1	72	Private	57	Fee Title
1	73	Private	309	Fee Title
1	74	Private	42	Fee Title
1	75	Private	48	Fee Title
1	76	Private	35	Fee Title
1	77	Private	59	Fee Title
1	78	Private	58	Fee Title
1	79	Private	81	Fee Title
1	80	Private	47	Fee Title
1	81	Private	25	Fee Title
1	82	Private	169	Fee Title
1	83	Private	988	Fee Title
1	84	Private	1,157	Fee Title
1	85	Private	161	Fee Title
1	86	Private	200	Fee Title
1	87	Private	86	Fee Title
1	88	Private	51	Fee Title
1	89	Private	14	Fee Title
1	90	Private	199	Fee Title
1	91	Private	96	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
1	93	Private	161	Fee Title
1	94	Private	19	Fee Title
1	95	Private	988	Fee Title
1	96	Private	624	Fee Title
1	97	Private	425	Fee Title
1	100	Private	50	Fee Title
1	101	Private	134	Fee Title
1	102	NGO	99	Fee Title
1	103	Private	163	Fee Title
1	104	Private	283	Fee Title
1	105	Private	122	Fee Title
1	106	Private	87	Fee Title
1	107	Private	13	Fee Title
1	108	Private	85	Fee Title
1	109	Private	121	Fee Title
1	110	Private	142	Fee Title
1	114	Private	28	Fee Title
1	115	Private	15	Fee Title
1	116	Private	10	Fee Title
1	117	Private	23	Fee Title
1	118	Private	80	Fee Title
1	119	Private	521	Fee Title
1	120	Private	461	Fee Title
1	121	Private	62	Fee Title
1	127	Private	39	Fee Title
1	129	Private	1,540	Fee Title
1	130	Private	541	Fee Title
1	132	County	31	No Interest
1	133	Private	67	Fee Title
1	134	Private	153	Fee Title
1	240	Private	9	Conservation Easement

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
1	241	Private	41	Fee Title
1	428	Private	1,132	Fee Title
1	429	Private	157	Fee Title
1	430	Private	58	Fee Title
1	431	Private	42	Fee Title
1	432	Private	42	Fee Title
1	433	Private	77	Fee Title
1	434	Private	411	Fee Title
1	435	Private	38	Fee Title
1	436	Private	77	Fee Title
1	437	Private	38	Fee Title
1	438	Private	78	Fee Title
1	439	Private	205	Fee Title
1	440	Private	701	Fee Title
1	441	NGO	814	Fee Title
1	442	Private	478	Fee Title
1	443	Private	37	Fee Title
1	444	Private	228	Fee Title
1	445	Private	76	Fee Title
1	446	Private	37	Fee Title
1	447	Private	19	Fee Title
1	448	Private	19	Fee Title
1	449	Private	51	Fee Title
1	450	Private	36	Fee Title
1	451	Private	246	Fee Title
1	452	Private	52	Fee Title
1	453	Private	24	Fee Title
1	454	Private	268	Fee Title
1	455	Private	77	Fee Title
1	456	Private	40	Fee Title
1	457	Private	78	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
1	458	Private	186	Fee Title
1	459	Private	40	Fee Title
1	460	Private	113	Fee Title
1	461	Private	534	Fee Title
1	462	Private	544	Fee Title
1	463	Private	227	Fee Title
1	464	Private	57	Fee Title
1	519	Private	1,843	Fee Title
1	520	Private	102	Fee Title
1	538	Private	45	Fee Title
1	539	Private	18	Fee Title
1	540	Private	21	Fee Title
1	541	Private	27	Fee Title
1	542	Private	38	Fee Title
<b>Bayou DeView Peripheral</b>				
2	135	Private	649	Fee Title
2	138	Private	35	Fee Title
2	140	Private	41	Fee Title
2	141	Private	169	Fee Title
2	143	Private	195	Fee Title
2	144	Private	20	Fee Title
2	145	Private	26	Fee Title
2	146	Private	37	Fee Title
2	147	Private	77	Fee Title
2	148	Private	878	Fee Title
2	151	Private	150	Fee Title
2	153	Private	186	Fee Title
2	155	Private	80	Fee Title
2	156	Private	829	Fee Title
2	158	Private	20	Fee Title
2	159	Private	21	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	160	Private	42	Fee Title
2	161	Private	82	Fee Title
2	162	Federal	41	Fee Title
2	163	Private	214	Fee Title
2	164	Private	80	Fee Title
2	165	Private	205	Fee Title
2	166	Private	282	Fee Title
2	167	Private	21	Fee Title
2	168	Private	569	Fee Title
2	169	Private	20	Fee Title
2	170	Private	160	Fee Title
2	171	Private	289	Fee Title
2	172	Private	40	Fee Title
2	173	Private	41	Fee Title
2	174	Private	315	Fee Title
2	176	Private	809	Fee Title
2	177	Private	43	Fee Title
2	179	Private	20	Fee Title
2	180	Private	45	Fee Title
2	181	Private	120	Fee Title
2	182	Private	65	Fee Title
2	184	Private	96	Fee Title
2	185	Private	42	Fee Title
2	186	Private	124	Fee Title
2	187	Private	78	Fee Title
2	189	Private	83	Fee Title
2	191	Private	39	Fee Title
2	192	Private	82	Fee Title
2	193	Private	84	Fee Title
2	194	Private	304	Fee Title
2	197	Private	228	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	198	Private	155	Fee Title
2	199	Private	41	Fee Title
2	200	Private	37	Fee Title
2	201	Private	122	Fee Title
2	202	Private	38	Fee Title
2	203	Private	84	Fee Title
2	206	Private	1,898	Fee Title
2	207	Private	324	Fee Title
2	208	Private	212	Fee Title
2	209	Private	128	Fee Title
2	210	Private	41	Fee Title
2	211	Private	370	Fee Title
2	212	Private	40	Fee Title
2	215	Private	634	Fee Title
2	216	Private	457	Fee Title
2	217	Private	233	Fee Title
2	218	Private	209	Fee Title
2	219	Private	990	Fee Title
2	220	Private	372	Fee Title
2	221	Private	1,385	Fee Title
2	223	Private	44	Fee Title
2	224	Private	69	Fee Title
2	225	Private	15	Fee Title
2	226	Private	87	Fee Title
2	227	Private	108	Fee Title
2	228	Private	86	Fee Title
2	229	Private	116	Fee Title
2	230	Private	639	Fee Title
2	231	Private	15	Fee Title
2	232	Private	239	Fee Title
2	233	Private	307	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	236	Private	266	Fee Title
2	237	Private	169	Fee Title
2	243	Private	40	Fee Title
2	244	Private	82	Fee Title
2	245	Private	99	Fee Title
2	246	Private	598	Fee Title
2	247	Private	685	Fee Title
2	248	Private	164	Fee Title
2	249	Private	32	Fee Title
2	250	Private	36	Fee Title
2	251	Private	512	Fee Title
2	252	Private	42	Fee Title
2	253	Private	78	Fee Title
2	254	Private	2	No Interest
2	255	Private	2	No Interest
2	256	Private	2	No Interest
2	257	Private	25	Fee Title
2	258	Private	32	Fee Title
2	259	Private	5	Conservation Easement
2	260	Private	215	Fee Title
2	261	Private	256	Fee Title
2	262	State	6	No Interest
2	263	Private	98	Fee Title
2	264	Private	214	Fee Title
2	265	Private	368	Fee Title
2	266	Private	261	Fee Title
2	267	Private	68	Fee Title
2	268	Private	1	No Interest
2	269	Private	1	No Interest
2	270	Private	944	Fee Title
2	332	Private	160	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	333	Private	620	Fee Title
2	334	Private	46	Fee Title
2	335	Private	1,256	Fee Title
2	336	Private	7	Conservation Easement
2	337	Private	32	Fee Title
2	338	Private	43	Fee Title
2	339	Private	< 1	No Interest
2	365	Private	5	Conservation Easement
2	366	Private	3	No Interest
2	367	Private	71	Fee Title
2	368	Private	< 1	No Interest
2	369	Private	120	Fee Title
2	370	Private	168	Fee Title
2	371	Private	44	Fee Title
2	372	Private	190	Fee Title
2	373	Private	1	No Interest
2	374	Private	1	No Interest
2	375	Private	3	No Interest
2	376	Private	39	Fee Title
2	377	Private	99	Fee Title
2	378	Private	169	Fee Title
2	379	Private	412	Fee Title
2	380	Private	214	Fee Title
2	381	Private	81	Fee Title
2	387	Private	9	Conservation Easement
2	388	Private	4	No Interest
2	389	Private	1	No Interest
2	390	Private	5	Conservation Easement
2	391	Private	6	Conservation Easement
2	392	Private	1	No Interest
2	393	Private	< 1	No Interest

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	394	Private	115	Fee Title
2	395	Private	1,527	Fee Title
2	396	Private	1	No Interest
2	397	Private	< 1	No Interest
2	398	Private	< 1	No Interest
2	399	Private	< 1	No Interest
2	400	Private	< 1	No Interest
2	401	Private	< 1	No Interest
2	402	Private	83	Fee Title
2	403	Private	392	Fee Title
2	404	Private	87	Fee Title
2	405	Private	177	Fee Title
2	406	Private	8	Conservation Easement
2	407	Private	319	Fee Title
2	408	Private	86	Fee Title
2	409	Private	81	Fee Title
2	410	Private	78	Fee Title
2	411	Private	166	Fee Title
2	412	Private	243	Fee Title
2	413	Private	307	Fee Title
2	414	Private	116	Fee Title
2	415	Private	109	Fee Title
2	416	Private	162	Fee Title
2	417	Private	398	Fee Title
2	418	Private	47	Fee Title
2	419	Private	358	Fee Title
2	420	Private	293	Fee Title
2	421	Private	2	No Interest
2	422	Private	590	Fee Title
2	423	Private	377	Fee Title
2	425	Private	464	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
2	426	Private	122	Fee Title
2	427	Private	< 1	No Interest
2	500	Private	< 1	No Interest
2	513	Private	120	Fee Title
2	514	Private	52	Fee Title
2	515	Private	2	No Interest
2	516	Private	2	No Interest
2	517	Private	46	Fee Title
2	518	Private	39	Fee Title
2	527	Private	26	Fee Title
2	528	Private	16	Fee Title
2	529	Private	11	Fee Title
2	530	Private	64	Fee Title
2	531	Private	20	Fee Title
2	533	Private	33	Fee Title
2	534	Private	13	Fee Title
2	535	Private	99	Fee Title
2	536	Private	46	Fee Title
2	537	Private	76	Fee Title
2	575	Unknown	311	Fee Title
2	576	Unknown	15	Fee Title
<b>Cache River Peripheral</b>				
3	92	Private	311	Fee Title
3	98	Private	1,386	Fee Title
3	99	Private	201	Fee Title
3	111	Private	3,206	Fee Title
3	112	Private	407	Fee Title
3	113	Private	241	Fee Title
3	122	Private	174	Fee Title
3	123	Private	82	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	124	Private	1,176	Fee Title
3	125	Private	46	Fee Title
3	126	Private	40	Fee Title
3	128	Private	159	Fee Title
3	131	Private	169	Fee Title
3	136	Private	271	Fee Title
3	137	Private	106	Fee Title
3	139	Private	1,183	Fee Title
3	142	Private	338	Fee Title
3	149	Private	109	Fee Title
3	150	Private	88	Fee Title
3	152	Private	84	Fee Title
3	154	Private	80	Fee Title
3	157	Private	244	Fee Title
3	175	Private	38	Fee Title
3	178	Private	67	Fee Title
3	183	Private	364	Fee Title
3	188	Private	74	Fee Title
3	190	Private	325	Fee Title
3	195	Private	157	Fee Title
3	196	Private	128	Fee Title
3	204	Private	78	Fee Title
3	205	Private	29	Fee Title
3	213	Private	40	Fee Title
3	214	Private	50	Fee Title
3	222	Private	49	Fee Title
3	234	Private	638	Fee Title
3	235	Private	12	Fee Title
3	238	Private	102	Fee Title
3	239	Private	705	Fee Title
3	242	Private	15	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	271	Private	133	Fee Title
3	272	Private	123	Fee Title
3	273	Private	2	No Interest
3	274	Private	4	No Interest
3	275	Private	251	Fee Title
3	276	Private	22	Fee Title
3	277	Private	2	No Interest
3	278	Private	1	No Interest
3	279	Private	6	Conservation Easement
3	280	Private	3	No Interest
3	281	Private	4	No Interest
3	282	Private	7	Conservation Easement
3	283	Private	20	Fee Title
3	284	Private	39	Fee Title
3	285	Private	82	Fee Title
3	286	Private	20	Fee Title
3	287	Private	33	Fee Title
3	288	Private	31	Fee Title
3	289	Private	125	Fee Title
3	290	Private	170	Fee Title
3	291	Private	398	Fee Title
3	292	Private	2	No Interest
3	293	Private	3	No Interest
3	294	Private	5	Conservation Easement
3	295	Private	45	Fee Title
3	296	Private	< 1	No Interest
3	297	Private	124	Fee Title
3	298	Private	398	Fee Title
3	299	Private	119	Fee Title
3	300	Private	39	Fee Title
3	301	Private	294	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	302	Private	41	Fee Title
3	303	Private	41	Fee Title
3	304	Private	42	Fee Title
3	305	Local Govt.	12	No Interest
3	306	Private	158	Fee Title
3	307	Private	161	Fee Title
3	308	Private	2	No Interest
3	309	Private	468	Fee Title
3	310	Private	20	Fee Title
3	311	Private	733	Fee Title
3	312	Private	119	Fee Title
3	313	Private	96	Fee Title
3	314	Private	146	Fee Title
3	315	Private	205	Fee Title
3	316	Private	363	Fee Title
3	317	Private	39	Fee Title
3	318	Private	197	Fee Title
3	319	Private	219	Fee Title
3	320	Private	286	Fee Title
3	321	Federal	59	No Interest
3	322	Private	15	Fee Title
3	323	Private	84	Fee Title
3	324	Private	17	Fee Title
3	325	Private	426	Fee Title
3	326	Private	327	Fee Title
3	327	Private	174	Fee Title
3	328	Private	602	Fee Title
3	329	Private	80	Fee Title
3	330	Private	178	Fee Title
3	331	Private	713	Fee Title
3	340	Private	37	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	341	Private	1	No Interest
3	342	Private	1	No Interest
3	343	Private	1	No Interest
3	344	Private	4	No Interest
3	345	Private	2	No Interest
3	346	Private	2	No Interest
3	347	Private	1	No Interest
3	348	Private	< 1	No Interest
3	349	Private	484	Fee Title
3	350	Private	37	Fee Title
3	351	Private	< 1	No Interest
3	352	Private	2	No Interest
3	353	Private	< 1	No Interest
3	354	Private	1	No Interest
3	355	Private	4	No Interest
3	356	Private	1	No Interest
3	357	Private	268	Fee Title
3	358	Private	120	Fee Title
3	359	Private	1	No Interest
3	360	Private	470	Fee Title
3	361	Private	34	Fee Title
3	362	Private	47	Fee Title
3	363	Private	107	Fee Title
3	364	Private	66	Fee Title
3	382	Private	1	No Interest
3	383	Private	52	Fee Title
3	384	Private	< 1	No Interest
3	385	Private	< 1	No Interest
3	386	Private	< 1	No Interest
3	424	Private	1	No Interest
3	465	Private	12	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	466	Private	60	Fee Title
3	467	Private	77	Fee Title
3	468	Private	223	Fee Title
3	469	Private	258	Fee Title
3	470	Private	1,051	Fee Title
3	471	State	58	No Interest
3	472	Local Govt.	95	No Interest
3	473	Federal	1,130	Fee Title
3	474	Private	269	Fee Title
3	475	Private	314	Fee Title
3	476	Private	314	Fee Title
3	477	Private	167	Fee Title
3	478	Private	555	Fee Title
3	479	Private	35	Fee Title
3	480	Private	23	Fee Title
3	481	Private	74	Fee Title
3	482	Private	16	Fee Title
3	483	Private	41	Fee Title
3	484	Private	65	Fee Title
3	485	Private	807	Fee Title
3	486	Private	888	Fee Title
3	487	Private	344	Fee Title
3	488	Private	482	Fee Title
3	489	Private	10	Conservation Easement
3	490	Private	394	Fee Title
3	491	Private	487	Fee Title
3	492	Private	122	Fee Title
3	493	Private	160	Fee Title
3	494	Private	84	Fee Title
3	495	Private	244	Fee Title
3	496	Private	406	Fee Title

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	497	Private	241	Fee Title
3	498	Private	41	Fee Title
3	499	Private	< 1	No Interest
3	501	Private	432	Fee Title
3	502	Unknown	256	Fee Title
3	503	Private	85	Fee Title
3	504	Private	50	Fee Title
3	505	Private	84	Fee Title
3	506	Private	40	Fee Title
3	507	Private	5	Conservation Easement
3	508	Private	52	Fee Title
3	509	Private	21	Fee Title
3	510	Private	3	No Interest
3	511	Private	189	Fee Title
3	512	Private	35	Fee Title
3	521	Private	35	Fee Title
3	522	Private	103	Fee Title
3	523	Private	144	Fee Title
3	524	Private	19	Fee Title
3	525	Private	15	Fee Title
3	526	Private	65	Fee Title
3	532	Private	37	Fee Title
3	543	Private	18	Fee Title
3	544	Private	11	Fee Title
3	545	Private	3	Fee Title
3	546	Private	42	Fee Title
3	547	Private	14	Fee Title
3	548	Private	1	No Interest
3	549	Private	5	Conservation Easement
3	550	Private	3	No Interest
3	551	Private	4	No Interest

Priority Group	Parcel ID #	Type of Landowners	Approximate Acreage*	Methods of Acquisition (minimum interest)**
3	552	Private	4	No Interest
3	553	Private	7	Conservation Easement
3	554	Private	1	No Interest
3	555	Private	6	Conservation Easement
3	556	Private	5	Conservation Easement
3	557	Private	1	No Interest
3	558	Private	1	No Interest
3	559	Private	1	No Interest
3	560	Private	45	Fee Title
3	561	Private	6	Conservation Easement
3	562	Private	7	Conservation Easement
3	563	Private	5	Conservation Easement
3	564	Private	2	No Interest
3	565	Private	2	No Interest
3	566	Private	1	No Interest
3	567	Private	2	No Interest
3	568	Private	4	No Interest
3	569	Private	10	Conservation Easement
3	570	Private	3	No Interest
3	571	Private	10	Conservation Easement
3	572	Private	4	No Interest
3	573	Private	3	No Interest
3	574	Private	3	No Interest

*\*Total approximate acreage is different from the expansion acreage listed in this LPP due to the inclusion of parcels that are owned by the same entities but located outside of the expansion area.*

*\*\*Generally, the Service will not seek to acquire any property interest in dwellings or commercial buildings situated on any parcels regardless of acreage—any consideration of such acquisition will solely be on a case-by-case basis.*

Figure 6. Landowner parcels - Priority Area 1 Map 1

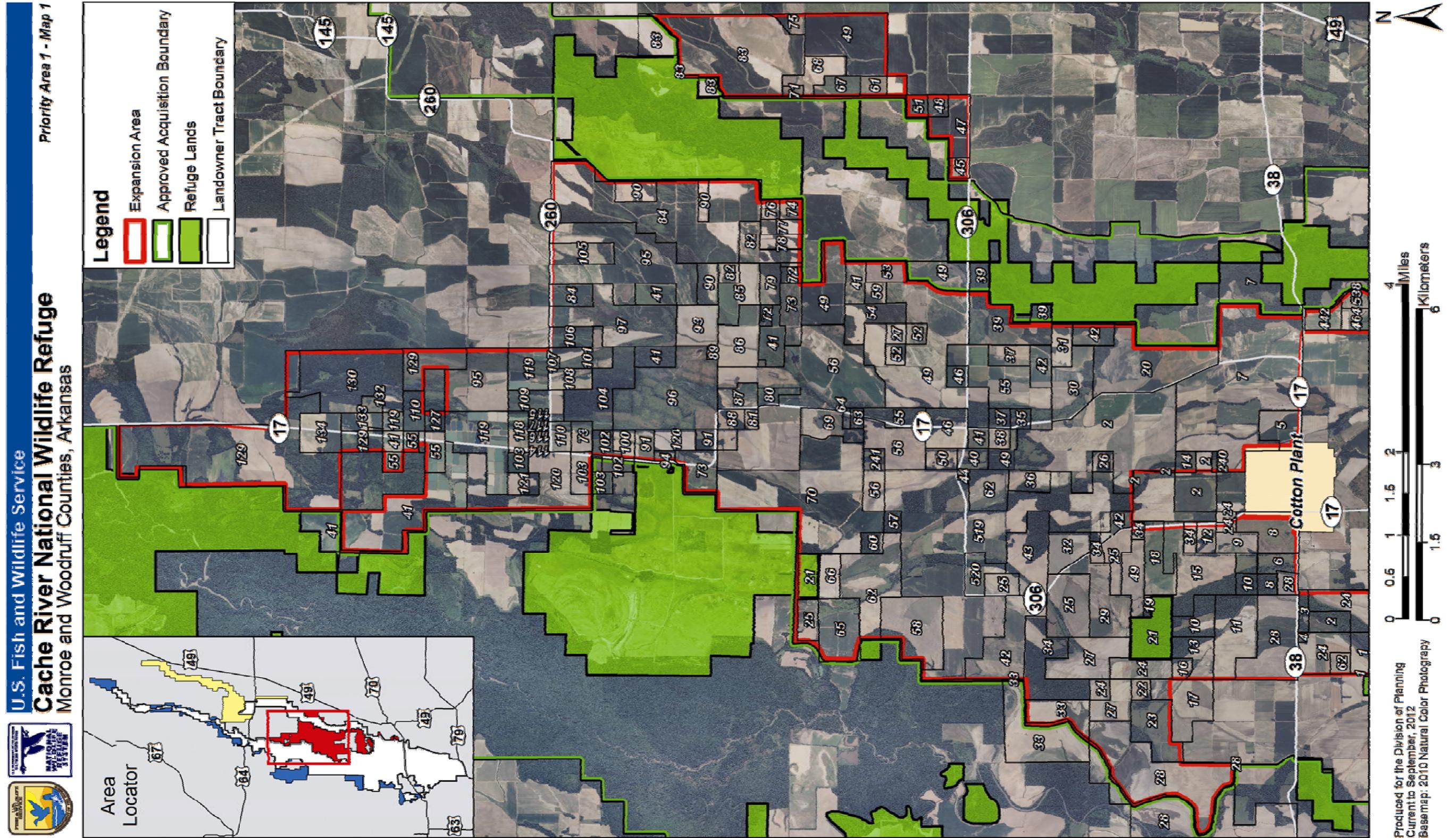




Figure 7. Landowner parcels - Priority Area 1 Map 2

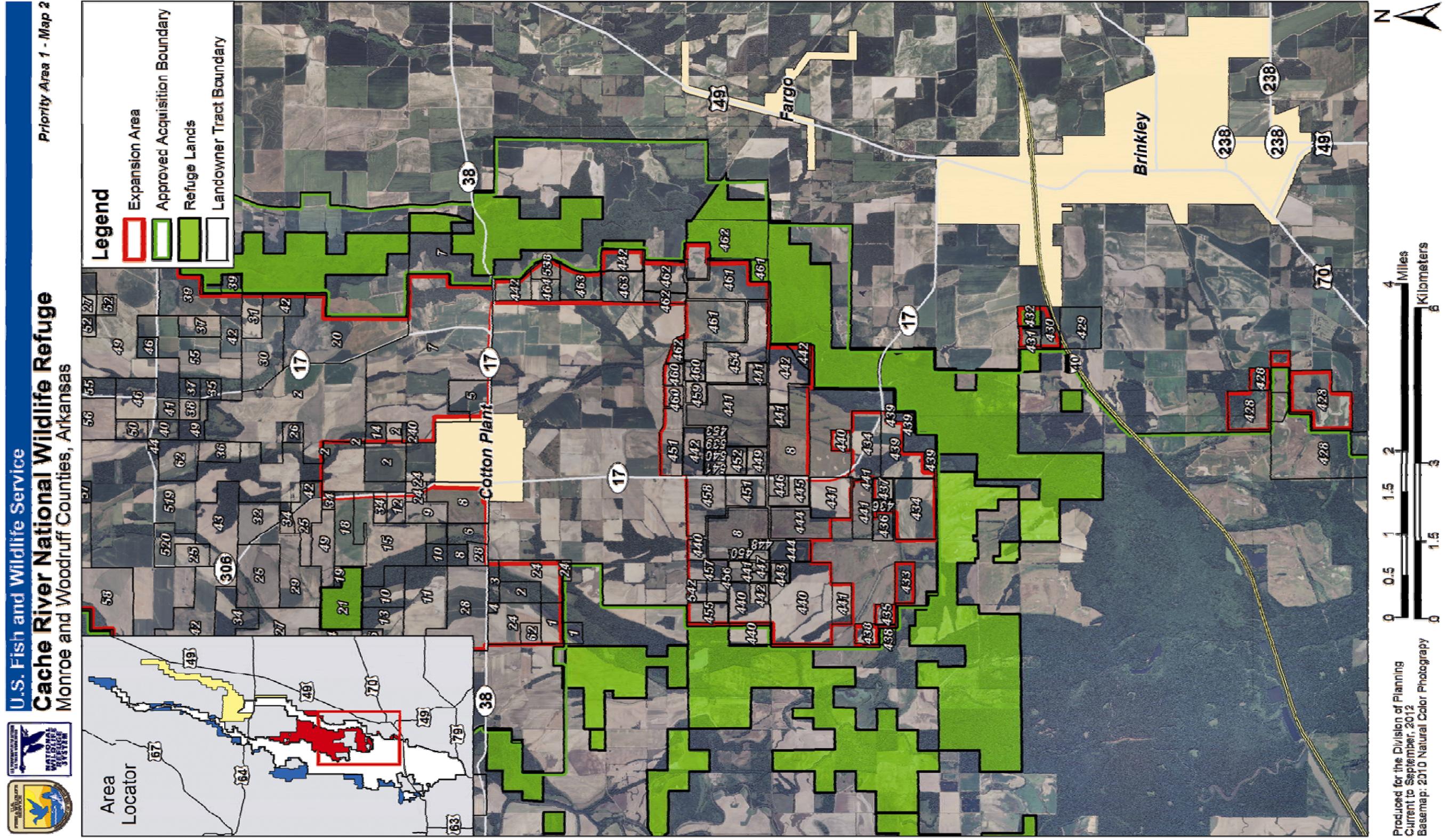








Figure 9. Landowner parcels - Priority Area 2 Map 2

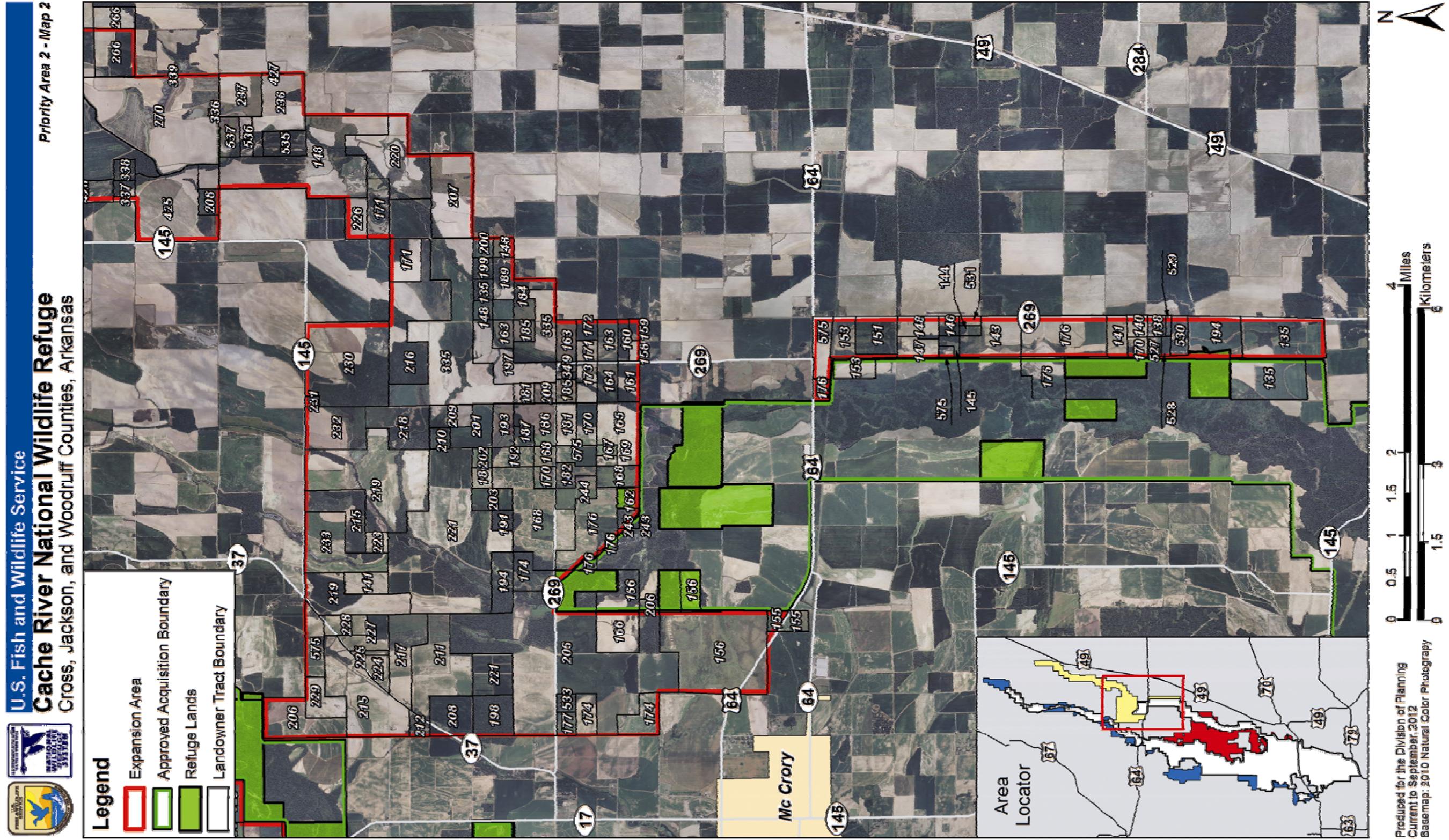




Figure 10. Landowner parcels - Priority Area 3 Maps 1 and 2

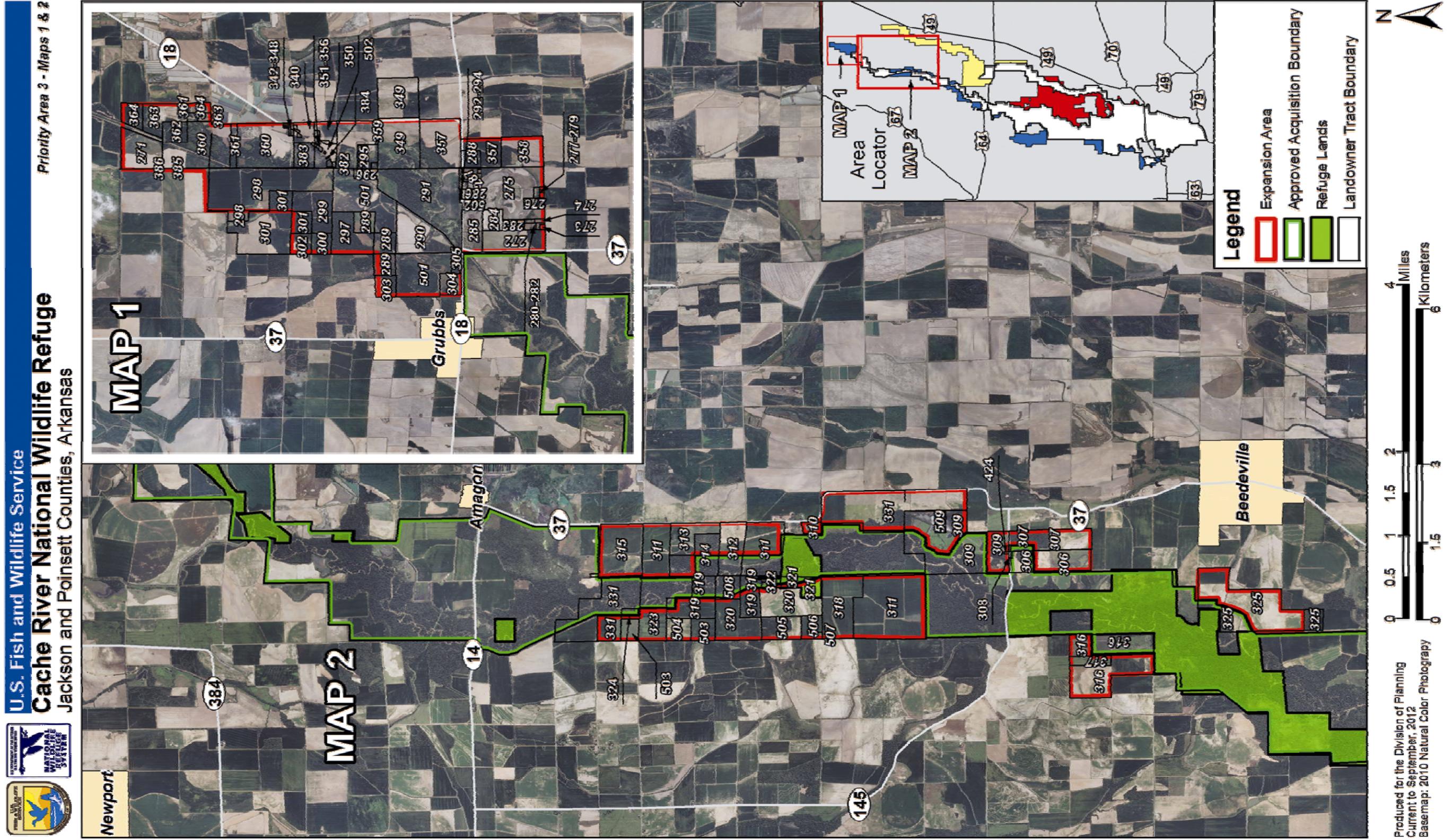




Figure 11. Landowner parcels - Priority Area 3 Maps 3 and 4

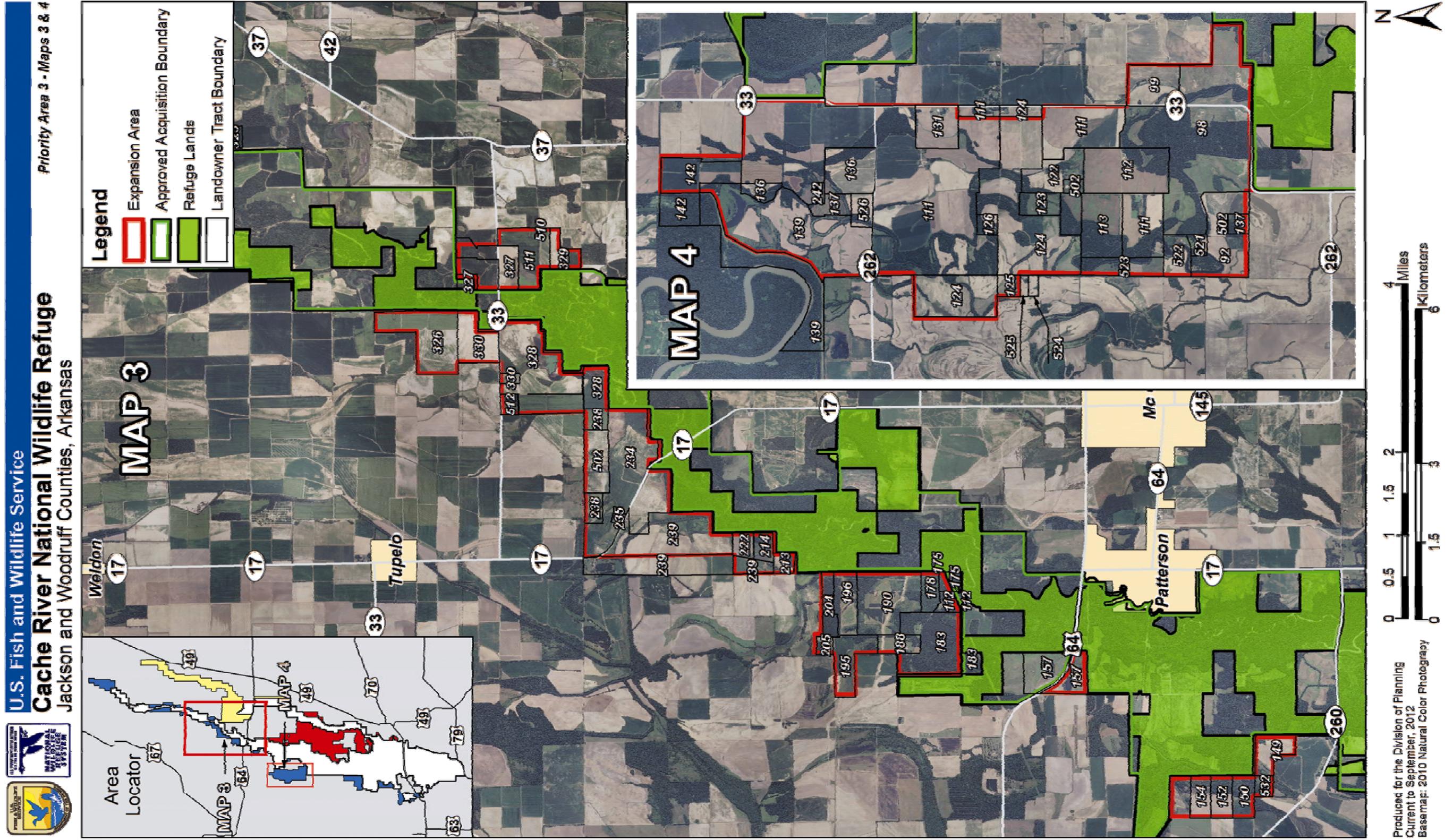
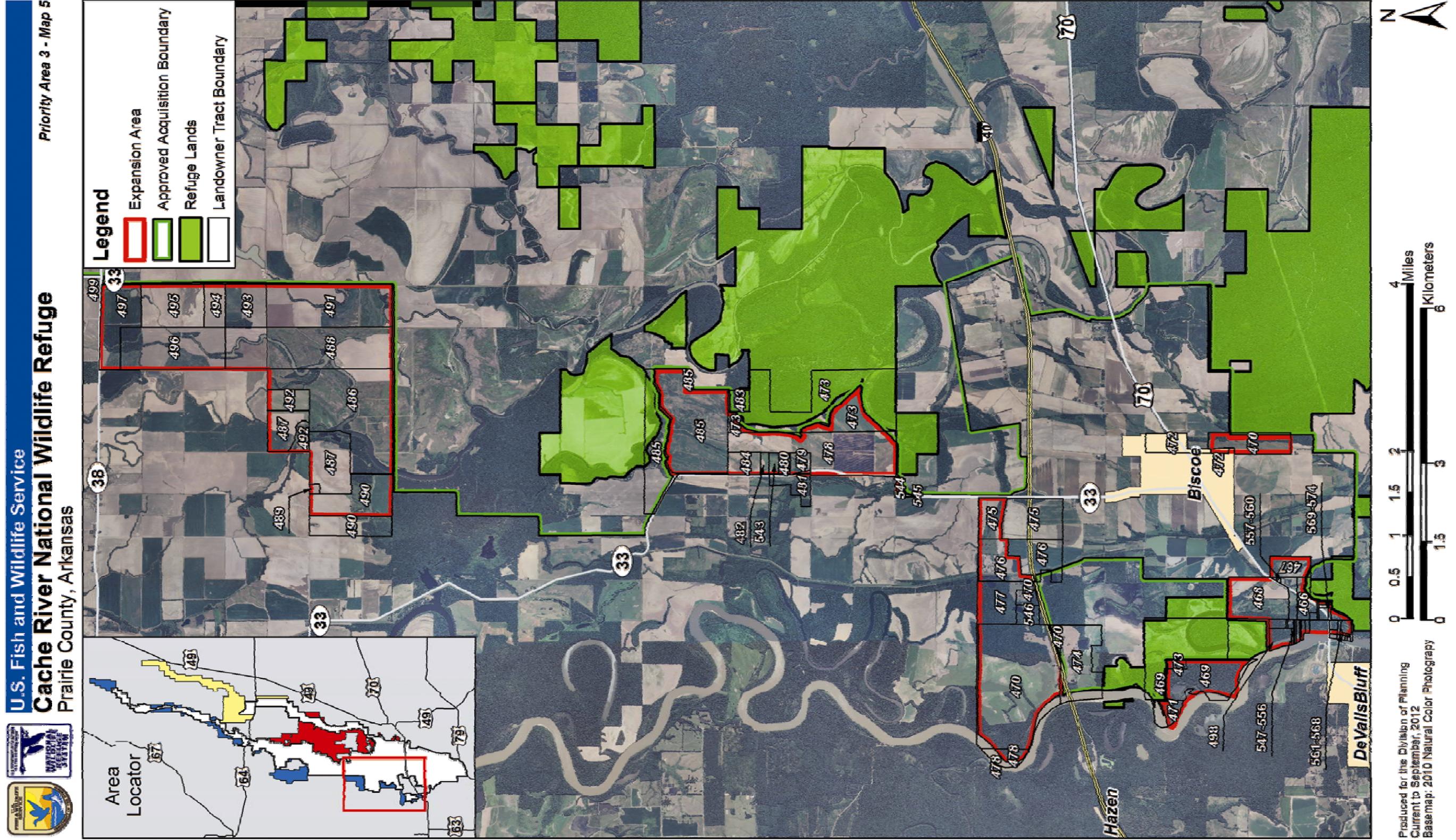




Figure 12. Landowner parcels - Priority Area 3 Map 5





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## APPENDICES

### *Appendix A. Compatibility Determination*

The Comprehensive Conservation Plan for the Central Arkansas NWR Complex (USFWS 2009) was completed along with compatibility determinations in 2009. The additional lands covered under this Final LPP will be brought into the Refuge System, and will be managed as current lands are managed on Cache River NWR. Lands purchased to expand Cache River NWR have the following uses already determined to be compatible: Hunting, Fishing, Wildlife Observation, Wildlife Photography, Environmental Education and Interpretation, Research and Monitoring, Forest Products Harvesting, Commercial Guiding for Wildlife Observation/Photography, Commercial Video and Photography, Nuisance Animal Control, Cooperative Farming, Furbearer Trapping, and Commercial Fishing (USFWS 2009).



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## *Appendix B. Interim Recreation Act Funding*

Station Name: Cache River National Wildlife Refuge

Date Refuge Established: 1986

Cache River NWR's official purposes are:

"...the conservation of the 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. 3901(b) (Emergency Wetlands Resources Act of 1986).

"...for the development, advancement, management, conservation, and protection of fish and wildlife resources..." 16 U.S.C. 742f (a)(4) ...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude..." 16 U.S.C. 742f (b)(1) (Fish and Wildlife Act of 1956).

"...for use as an inviolate sanctuary, or for any other management purposes, for migratory birds." 16 U.S.C. 715d (Migratory Bird Conservation Act).

Public Use(s) Evaluated for the proposed expansion of Cache River NWR:

Hunting  
Fishing  
Wildlife Observation and Photography  
Environmental Education and Interpretation  
Research and Monitoring  
Forest Products Harvesting  
Commercial Guiding for Wildlife Observation/Photography  
Commercial Video and Photography  
Nuisance Animal Control  
Cooperative Farming  
Furbearer Trapping  
Commercial Fishing

The funding required to administer and manage the recreational uses include:

Minimal funding in the amount of \$100,000 will be made available to implement initial expansion, protection, hunt implementation, data collection, and non-consumptive uses.

Based on a review of the refuge budget allocated for recreational use management, I certify that funding is adequate to ensure compatibility and to administer and manage the recreational uses.

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Project Leader: **Signed** 10-31-12  
(Signature/Date)

Refuge Supervisor: **Signed** 11/8/12  
(Signature/Date)

*on* Regional Chief, National Wildlife Refuge System, Southeast Region: **Signed** 11-8-12  
(Signature/Date)

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## *Appendix C. Information On Preparers*

This document was prepared by the staff at Cache River NWR, with guidance and assistance from Tina Chouinard, Regional Planner, and the Land Protection Expansion Team.

### **LAND PROTECTION PLAN EXPANSION TEAM**

Keith Weaver, Project Leader, Cache River NWR, FWS  
Jonathan Windley, Deputy Project Leader, Cache River NWR, FWS  
Eric Johnson, Forester, Cache River NWR, FWS  
Richard Crossett, Wildlife Biologist, Cache River NWR, FWS  
Tina Chouinard, Natural Resource Planner, Southeast Region, FWS  
Kimberly Eldridge, Land Protection Planner, Southeast Region, FWS  
Richard Kanaski, Regional Archaeologist, Southeast Region, FWS  
Jennifer Strickland, External Affairs, Southeast Region, FWS  
Sheila Ford, Realty Specialist, Southeast Region, FWS  
Evelyn Nelson, Technical Writer/Editor, Southeast Region, FWS  
Betty Jarous, Land Acquisition Branch Chief, Southeast Region, FWS  
Sue Cielinski, Planning Chief, Southeast Region, FWS  
Chuck Hunter, Resource Management Chief, Southeast Region, FWS  
Ricky Ingram, Refuge Supervisor, Area 1, Southeast Region, FWS  
Richard Warner, NEPA Coordinator, Southeast Region, FWS



*Appendix D. Intra-Service Section 7 Biological Evaluation Form*

Originating Person: Keith Weaver  
 Telephone Number: 870-347-2074  
 E-Mail: keith\_weaver@fws.gov  
 Date: August 9, 2012

**PROJECT NAME: FINAL LAND PROTECTION PLAN FOR THE EXPANSION OF CACHE RIVER NATIONAL WILDLIFE REFUGE**

- 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
  - Refuges/Wildlife

II. State/Agency: Arkansas/USFWS

III. Station Name: Cache River NWR

IV. Description of Action: The U.S. Fish and Wildlife Service (Service) will protect and manage additional habitat in Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties, Arkansas, through the expansion of the current 185,574 acres of Cache River National Wildlife Refuge (NWR) acquisition boundary by 101,110 acres. The refuge now contains about 67,400 acres (in fee-title), and this project will bring the total potential conservation footprint to 286,684 acres.

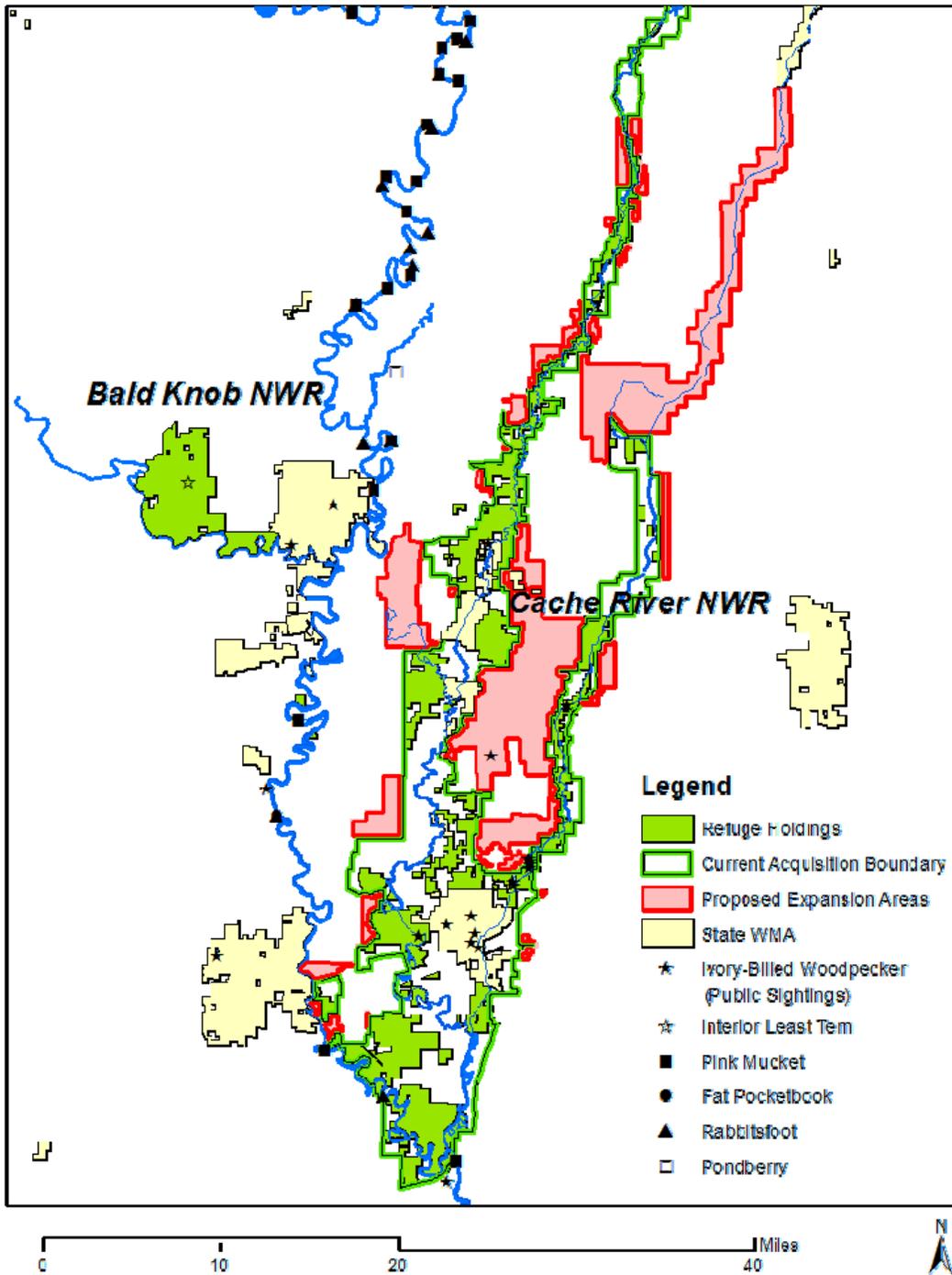
V. Pertinent Species and Habitat:

A. Include species/habitat occurrence map: See VI  
 Complete the following table:

SPECIES/CRITICAL HABITAT	STATUS1
Ivory-billed Woodpecker ( <i>Campephilus principalis</i> )	E
Interior Least Tern ( <i>Sterna antillarum</i> )	E
Piping Plover ( <i>Charadrius melodus</i> )	E
Pink Mucket Mussel ( <i>Lamslilis abrupt</i> )	E
Fat Pocketbook Mussel ( <i>Potamilus capax</i> )	E
Rabbitsfoot Mussel ( <i>Quadrula cylindrica</i> )	C
Pondberry ( <i>Lindera melissifolia</i> )	E

1STATUS: E=endangered, T=threatened, PE=proposed endangered, PT=proposed threatened, CH=critical habitat, PCH=proposed critical habitat, C=candidate species, S/A=Similar Appearance

## VI. Location



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A. Ecoregion Number and Name: West Gulf Coastal Plain; Lower Mississippi River Ecosystem 27

County and State: This project encompasses undeveloped areas in Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties, Arkansas.

Section, township, and range (or latitude and longitude):

Northern Extent; 35° 42' 30," Southern Extent; 34° 40' 7," Western Extent; -91° 28' 9," Eastern Extent; -90° 57' 56," NAD 1983 projection

Distance (miles) and direction to nearest town: Major towns immediately adjacent to the area: Cotton Plant, Patterson, McCrory, Biscoe, Gregory, Brinkley, Amagon, Beedeville.

Species/habitat occurrence: Ivory-billed Woodpecker (IBWO) – The IBWO was once an inhabitant of forested habitat throughout the southeastern United States and Cuba. Although little specific population data are available, it is likely that European settlement and clearing of the forest caused the species to decline in the latter half of the 19th century. By the mid-20th Century, the IBWO was reduced to a very small population. The last widely accepted sightings were made in the Tensas River area in 1944. Since that time, there have been numerous unconfirmed sightings throughout the historic range of the species. Many of these sightings seemed highly credible, but lacked hard evidence.

In February 2004, Cornell Laboratory of Ornithology biologists became aware of credible sight reports of the IBWO in a portion of Bayou DeView, which is located on Cache River NWR. Subsequently, Cornell biologists and their partners documented the presence of at least one IBWO (Fitzpatrick et al. 2005) in that area.

This stretch of the Bayou De View is currently providing some or all of the life cycle requirements for this species. The sixteen sightings of the IBWO were documented within the cypress-tupelo swamp of Bayou De View. Searchers deployed recording units within this area to capture the double taps and kent calls by this species. These vocalizations are the communication tools that the IBWO uses throughout the day. Much of this information from the recording units is still being analyzed.

Interior Least Tern – Interior least terns have been observed foraging intermittently in shore bird areas on Bald Knob NWR and the Raft Creek Bottoms along the White River.

Piping Plover – The piping plover is an occasionally documented migratory bird in the Cache River/Lower White River floodplain that does not winter or breed in Arkansas. It has not yet been reported on the refuge, but likely uses areas in the expansion area.

Fat Pocketbook Mussel – The fat pocketbook mussel inhabits the White River and has been found in other streams, but has not been found in the Cache River on any recent surveys.

Pink Mucket Mussel – The pink mucket mussel inhabits the White River and its major tributaries; one specimen was tentatively identified in the Cache River.

Rabbitsfoot Mussel – The rabbitsfoot mussel inhabits the White River and has been found in other streams, but is believed extirpated from the Little Red River and Cache River circa 1970s and 1980s, respectively.

Pondberry – Pondberry is limited in occurrence in Poinsett County (St. Francis Sunken Lands WMA), and is believed to occur in Woodruff and Jackson Counties in isolated sand pond depressions.

VII. Determination of Effects:

Explanation of effects of the action on species and critical habitats in item V. B:

SPECIES/ CRITICAL HABITAT	IMPACTS TO SPECIES/CRITICAL HABITAT
<b>Ivory-billed Woodpecker</b>	Extent of occurrence on Cache River NWR is unknown. Management activities, such as reforestation, land acquisition, and hydrologic restoration, will connect and create large forest blocks and improve the ecosystem. Improvement cuts to forest habitat will be short-term disturbances, but will improve forest structure, composition, productivity, and sustainability of habitat over the long term. Public use, research, and other activities are considered low volume and low impact.
<b>Interior Least Tern</b>	Limited occurrence on project area. Management activities will improve habitat overall; foraging areas and potential nesting sites will not likely be impacted by the action.
<b>Piping Plover</b>	Occasionally, this documented migratory bird is likely to occur on the refuge and in the expansion area associated with shallow mudflats, such as wet agricultural fields, drying oxbow lakes, or managed moist-soil units. Management activities will improve habitat overall; foraging areas and rest sites will not likely be impacted by the action.
<b>Fat Pocketbook Mussel</b>	Limited occurrence in White River and not recently found in the Cache River. Management activities will improve water quality through forest management, reforestation, and hydrologic restoration; public use, research, and other project activities will likely have no impact to the aquatic habitat.
<b>Pink Mucket Mussel</b>	Limited occurrence in White River and possibly found in the Cache River. Management activities will improve water quality through forest management, reforestation, and hydrologic restoration; public use, research, and other activities will likely have no impact on the aquatic habitat.
<b>Rabbitsfoot Mussel</b>	Limited occurrence in White River. Management activities will improve water quality through forest management, reforestation, and hydrologic restoration; public use, research, and other activities will likely have no impact on the aquatic habitat.
<b>Pondberry</b>	Limited occurrence in Poinsett County (St. Francis Sunken Lands WMA) and believed to occur in Woodruff and Jackson Counties in isolated sand pond depressions. Management activities will improve critical habitat through restoration of geophysical features and hydrology; public use, research, and other project activities are considered low volume and low impact.

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

<b>SPECIES/ CRITICAL HABITAT</b>	<b>ACTIONS TO MITIGATE/MINIMIZE IMPACTS</b>
<b>Ivory-billed Woodpecker</b>	Surveys to determine potential use of an area by this species are conducted prior to any habitat manipulation. Close coordination with Ecological Services and the Regional Office continues to ensure protection and proper management for this species.
<b>Interior Least Tern</b>	Refuge ownership and law enforcement are key elements to protection of this species and its habitat.
<b>Piping Plover</b>	Refuge ownership and law enforcement are key elements to protection of this species and its habitat.
<b>Fat Pocketbook Mussel</b>	Refuge ownership and therefore management and law enforcement will ensure protection of this species and its habitats.
<b>Pink Mucket Mussel</b>	Refuge ownership and therefore management and law enforcement will ensure protection of this species and its habitats.
<b>Rabbitsfoot Mussel</b>	Refuge ownership and therefore management and law enforcement will ensure protection of this species and its habitats.
<b>Pondberry</b>	Refuge ownership and therefore management and law enforcement will ensure protection and potential restoration of this species and its habitats.

VIII. Effect Determination and Response Requested:

SPECIES/CRITICAL HABITAT	DETERMINATION <sup>1</sup>			REQUESTED
	NE	NA	AA	
Ivory-billed Woodpecker ( <i>Campephilus principalis</i> )		x		Concurrence
Interior Least Tern ( <i>Sterna antillarum</i> )		x		Concurrence
Piping Plover ( <i>Charadrius melodus</i> )		X		
Pink Mucket Mussel ( <i>Lamsilis abrupt</i> )		x		Concurrence
Fat Pocketbook Mussel ( <i>Potamilus</i> )		x		Concurrence
Rabbitsfoot Mussel ( <i>Quadrula cylindrica</i> )		x		Concurrence
Pondberry ( <i>Lindera melissifolia</i> )		x		Concurrence

<sup>1</sup>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 and candidate species is "Conference".

 **Signed**

Signature (originating station)



Date

**Keith M. Weaver,**  
Project Leader



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## Attachment A: Reviewing Ecological Services Office Concurrence Justification

The action described by Cache River NWR involves implementing a Land Protection Plan (LPP) that will increase the approved acquisition boundary by up to 102,000 acres. As indicated in Section IX of the Intra-Service Section 7 Biological Evaluation Form, the Arkansas Field Office (Ecological Services) concurs with the "not likely to adversely affect" determination for the seven federally listed and candidate species detailed. Specifically, for each species our justifications for concurrence are:

- Ivory-billed Woodpecker: We agree that future acquisitions by the refuge, and any subsequent restoration and management actions, are unlikely to adversely affect this species. Forest blocks will be enlarged and connected and the existing forest will be managed to improve habitat. Any significant management actions (forest management prescriptions, forest management plans, etc.) on newly acquired lands, will require individual consultations under Section 7 to ensure consideration of this species. The refuge will follow the most current Ecological Services recommendations regarding pre-project surveys for this species.
- Interior Least Tern: We agree that future acquisitions by the refuge are unlikely to adversely affect this species. It occurs only sporadically on the refuge and is not known to nest within the area addressed by the Final LPP. If any future nesting habitat or important foraging habitat is identified on new acquired tracts, refuge ownership, management, and law enforcement will be beneficial.
- Piping Plover: We agree that future acquisitions by the refuge are unlikely to adversely affect this species. This species is a very rare migratory bird in the area, and neither nests nor winters in the area addressed by the Final LPP. If future management opportunities arise for this species, refuge ownership, management, and law enforcement will be beneficial.
- Fat Pocketbook, Pink Mucket, Rabbitsfoot Mussels: We agree that future acquisitions by the refuge are unlikely to adversely affect these species. All of these freshwater mussel species occur in the White River, which forms the boundary or dissects portions of the refuge. Ownership of new properties in the expanded acquisition zone and subsequent restoration work (reforestation of cultivated land) will improve water quality in the entire watershed, including the White River.
- Pondberry: This species may occur or suitable habitat for reintroduction may be present in several counties within the area addressed by the Final LPP. Ownership and management of lands by the refuge may bring about opportunities to protect and manage existing populations or restore populations at extirpated sites. Any significant refuge management activities (forest management prescriptions, moist-soil unit construction, etc.) on existing or newly acquired lands will require individual consultations under Section 7, to ensure consideration of this species.

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## Appendix E. References

- Arkansas Game and Fish Commission. 1989. A proposal for designation of protected areas within the Cache/Lower White Rivers Joint Venture Project as "Wetlands of International Importance". AGFC unpublished report. Little Rock, AR.
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## *Appendix F. Public Involvement, Consultation, Coordination, and Comments*

This appendix summarizes the efforts taken to solicit public comments, the results of the public consultation process, the public comments (both oral and written) that were received on the Draft LPP/Draft EA), and the Service responses to the public comments.

### **SUMMARY OF PUBLIC SCOPING IN THE PLANNING PROCESS**

#### **Public Scoping**

A news release of the proposed Cache River NWR acquisition boundary expansion was sent out to newspapers within Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties, Arkansas. The refuge held three public scoping meetings to solicit input and to identify concerns or issues on the Draft LPP/Draft EA on May 7, 8, and 10, 2012. Nineteen, eleven, and eleven members of the public attended each meeting, respectively. The Service received a number of comments concerning issues, such as water quality, sedimentation, land acquisition policy, habitat management, hunting, fishing, wildlife observation and wildlife photography, in the Draft LPP/Draft EA. Some questions or concerns were raised by individuals regarding property taxes, acquisition funding sources, use of condemnation, potential restrictions on private lands, economic impacts, restrictions on public use, and problems associated with the Cache River blockage near Grubbs, Arkansas. Many comments indicated a desire to expand the refuge to include areas not initially delineated in the preliminary planning project. Numerous comments received indicated that the project boundary should be expanded.

### **SUMMARY OF PUBLIC DRAFT LPP COMMENTS**

Comments on the Draft LPP/Draft EA were submitted in a variety of ways (e.g., at the public meeting and by mail, fax, and e-mail). A total of 36 people attended the public meeting on October 16, 2012, at the Augusta High School Cafeteria in Augusta, Arkansas. The deadline for submitting comments was October 31, 2012. About 15 respondents submitted comments.

Under NEPA, the Service must respond to substantive comments. For purposes of this Final LPP, a substantive comment was one that was submitted during the public review and comment period, which was within the scope of the proposed action (and the other alternatives outlined in the Draft EA), was specific to the proposed action, had a direct relationship to the proposed action, and included reasons that the Service should consider it in the decision-making process. The comments submitted during the public review and comment period were evaluated and summarized. Comments on like topics were grouped together. The Service's responses to the comments are provided. The page numbers referenced relate to the original page numbers in the Draft LPP/Draft EA that was released for public review and comment (USFWS 2012).

#### **Comments**

*Comment:* Multiple respondents, including the AGFC, have expressed overwhelming support for the expansion of Cache River NWR and believe implementation of the project will sustain public trust species, enhance water quality, and restore valuable hydrologic functions on natural waterways, enhance wildlife-dependant recreational opportunities, and maintain a self-perpetuating agricultural system vital to the delta economy.

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*Service:* Comments noted.

*Comment:* The AGFC further supports Alternative 2, because it includes the entire spectrum of unique and critical habitats within the historical ecosystem and those habitats are lacking from Alternative 3 in the Draft EA.

*Service:* Comment noted.

*Comment:* Where does the money come from in order to purchase land?

*Service Response:* The main funding sources the Service can draw from for land acquisition are the Migratory Bird Conservation Fund and the Land and Water Conservation Fund (LWCF). Cache River NWR is most likely to draw funds through the LWCF, which is mainly derived from the sale of offshore oil leases and is intended for land conservation. Other sources of funding also are possible, including donations. From time to time, Congress also chooses to directly fund land acquisition. If those funds were not used to buy land here in Arkansas, they would be used for the same purpose somewhere else.

*Comment:* Are the refuge annual operating costs tax based?

*Service Response:* The annual operating costs to maintain the refuge are tax based and budgeted within the federal budget annually. However, refuge lands demand very little in the way of expensive services or infrastructure from local government and they generate tourism dollars.

*Comment:* If the government buys more land, how will the counties be compensated for the loss in tax revenue? Does the Cache River NWR currently pay property taxes? The respondents noted that the hotel and local economy would benefit from visitors and that a lot of money is put into local economy from hunting and fishing. One respondent noted that the funding mechanism for the loss of revenue has not kept up with the demands of these payments.

*Service Response:* The Federal Government does not pay property tax on land it owns, but two factors help offset this potential hardship to communities. First, refuge lands demand very little in the way of expensive services or infrastructure from local governments and they generate tourism dollars. Second, under the provisions of the Refuge Revenue Sharing Act (Public Law 95-469), the Service annually reimburses counties to compensate for revenue lost as a result of acquisition of private property. Through the Refuge Revenue Sharing Act, counties and local governments may be compensated for lost revenues from the 101,110 acres that may be acquired in fee-title by the Service. The Refuge Revenue Sharing Act (16 U.S.C. 715s), as amended, allows the Service to offset the tax losses by annually paying the counties or other local units of government an amount that often equals or exceeds that which would have been collected from taxes if in private ownership. The source of funds for refuge revenue sharing payments are derived from the net receipts collected from the sale of various products or privileges from all refuge lands, such as grazing leases or timber sales, plus additional appropriated funds. The Refuge Revenue Sharing Act provides a formula to share economic use receipts to offset the loss of land within the counties' or local governments' tax bases. Specifically, the law requires that the revenue sharing payments to counties or local governments for our purchased lands will be based on the greatest of: (a) 3/4 of 1 percent of the market value; (b) 25 percent of the net receipts; or (c) 75 cents per acre. Fair market value is based on appraisals that are to be updated every 5 years. All lands administered solely or primarily by the Service – not just refuges – qualify for revenue sharing payments.

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The revenue sharing appraisal is based upon current fair market values of the various land types in the county or counties where each refuge is located. This appraisal values the refuge land by comparing it to the same, or similar, sales of land in the local area. As a result, refuge land is valued at its highest economic potential based on the surrounding real estate market. That means refuge land is valued on a variety of potential uses, including commercial property, timberland, and farmland. The revenue sharing appraisal compiles all the values found on each refuge to produce an overall per-acre-value for that refuge.

*Comment:* Will the Service use eminent domain and condemn land in order to acquire properties in the expansion area?

*Service Response:* Land interests are acquired from willing sellers only. Any landowner that is within an approved acquisition boundary, even though the surrounding parcels may have been purchased by the Service, retains all the rights, privileges, and responsibilities of private land ownership. This includes, but is not limited to, the right to access, hunting, vehicle use, control of trespass; the right to sell the property to any other party; and the responsibility to pay local real estate or property taxes. It is the Service's policy to work with willing sellers to acquire fee-title interest or less-than-fee-title interest in property.

*Comment:* Do you have an average acquisition price per acre for forested habitat and do you pay more for forested land versus agricultural land?

*Service Response:* Each tract offered for sale is appraised to determine its Current Fair Market Value (CFMV); there is no set price per acre. Generally, irrigated, productive, cropland may be valued higher than forested land; however, recreational value is also a significant component in the determination of CFMV.

*Comment:* How often do you get an appraisal and the person sells it for more money to someone else?

*Service Response:* This does happen occasionally. The Service offer is based on CFMV, and we have no ability to negotiate price.

*Comment:* Of the willing sellers, do folks first harvest their timber and then sell to the Federal Government? How much reforestation would there be on lands that the Service buys? Can the Service buy WRP lands? How much forest management/timber cutting do we do on the refuge?

*Service Response:* Some willing sellers harvest timber prior to sale to the refuge; this removal of merchantable timber is reflected in the appraised value. Most of the lands purchased for the refuge are in agricultural production. The Service anticipates reforesting the vast majority of lands purchased that are in agricultural production. If land has a WRP easement, the refuge can still purchase it. Currently, the Service harvests about 500-1,000 acres a year on Cache River NWR, but this is likely to increase in the future.

*Comment:* Multiple respondents would like the Service to expand the acquisition boundary to include: the Taylor Bay Area in Woodruff County; north of the Cache River; north of Grubbs and the previously channelized portion of the Cache River, and into the Raft Creek Basin area.

*Service Response:* We acknowledge that these areas have conservation potential but they are located quite a distance from the current and proposed acquisition boundary and west of the White River; it would not be possible to have a contiguous expansion area that would include these areas under this protection plan given the approved acreage limit of up to 102,000 acres. We have nearly

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met this expansion limit by using the SHC criteria to prioritize lands currently proposed for inclusion in this protection plan. Fortunately, AGFC is conserving and managing resources in the Raft Creek bottoms and NRCS is active in WRP enrollments in the Taylor Bay area, so conservation actions are being realized in this area.

*Comment:* Multiple respondents indicated they were interested in selling land only if the price meets their expectations.

*Service Response:* The Service pays CFMV for lands offered for sale and we do not have the ability to negotiate purchase price. The landowner is under no obligation to sell if the price is unacceptable to them.

*Comment:* The additional acreage proposed under Alternative 2 will allow acquisition of critically needed lands along the Cache River and Bayou DeView, as well as connections between these two and between Cache River and White River. However, with more acreage within the acquisition boundary, there may be a tendency to scatter acquisitions and fragment ownership by the Service even more than today. I encourage the refuge to set tactical acquisition priorities where possible that lead to increased contiguity of landholdings. Such tactical priorities can also include areas with specific geomorphology, hydrology, vegetation, habitat, public use, and/or other key values.

*Service Response:* We indeed strategically prioritize tracts when considering them for purchase from willing sellers; tracts that are inholdings would connect disjunct refuge parcels, enlarge existing blocks of forested habitat, and contain intact priority wildlife habitats that are highly desirable for acquisition, as are those that offer high restoration potential.

*Comment:* One respondent has some concerns about the priorities placed on groups of tracts in the plan. Specifically, the respondent would place highest priority on acquisition of tracts in the riparian corridors along Cache River and Bayou DeView (including courses, channels and bottomlands that have been isolated by levees or ditches but could be reconnected). This would also maintain priority on acquisition within the 10-year floodplain, which has been the traditional emphasis for the refuge. The respondent would then place priority 2 on special habitats, such as dune woodlands, ponds, and restorable flatwoods. Third priority would be upland areas that serve primarily to connect the corridors along the rivers. Finally, although the respondent recognizes that the refuge must consider willing sellers as it sets priorities, they should of course be secondary to ecological, access, and other primary criteria.

*Service Response:* For the purposes of this Final LPP, we did prioritize areas for acquisition using an SHC approach, and the area that in our opinion offered the greatest strategic conservation value in light of building upon existing refuge ownerships and implementing watershed conservation measures was that area with potential to create habitat connections between Cache River and Bayou DeView drainages (Area 1); these were ranked highest. However, this ranking in no way diminishes the concurrent great need for conserving 10-year floodplain areas on these systems and affording protection to riparian corridors where none currently exist or are very narrow, such as the case on Bayou DeView between the current boundary and south end of the Bayou DeView WMA (Area 2) and along the middle Cache River (Area 3). While special habitats are important from an ecological standpoint, and we do desire to conserve such habitats, unless they are contiguous across multiple ownerships or comprise the majority of any one parcel, it is often not feasible to configure land purchases around a certain special habitat type, because ownership patterns typically do not conform to habitat occurrence.

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## *Appendix G. Finding of No Significant Impact*

### **INTRODUCTION**

The U.S. Fish and Wildlife Service will protect and manage certain fish and wildlife resources in Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties, Arkansas, through the expansion of the Cache River NWR. An Environmental Assessment (EA) was prepared to inform the public of the possible environmental consequences of implementing this Final LPP for the expansion of the Cache River NWR. 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 this Final LPP for the expansion of Cache River NWR, as outlined in the Draft LPP/Draft EA (2012).

### **ALTERNATIVES**

In developing this Final LPP for the Cache River NWR Acquisition Boundary Expansion, the Service evaluated three alternatives with different approaches to conservation within the Cache River Basin landscape.

Alternative 1 – No Boundary Expansion (No Action Alternative)

Alternative 2 – Protection and Management of 101,110 Acres by the Fish and Wildlife Service (Preferred Alternative)

Alternative 3 – Protection and Management of up to 86,164 Acres by the Fish and Wildlife Service

The Service adopted Alternative 2, the Preferred Alternative, as detailed in this Final LPP and supporting documents, to guide expansion, acquisition, and management of the Cache River NWR. Management of the Cache River NWR would continue under the Central Arkansas NWR Complex Comprehensive Conservation Plan and accompanying compatibility determinations and/or step-down management plans (e.g., Hunt Plan) for the refuge. The overriding goals for the expansion of the refuge are: a functional conservation landscape; habitat for wildlife and management; enhanced water quality, quantity, and storage; and increased opportunities for wildlife-dependent recreation and education.

#### *ALTERNATIVE 1: NO ACTION*

This is the "status quo" alternative. Under this alternative, the Service would not acquire any of the project lands for the expansion of the refuge. The project lands would remain in private ownership and current land uses would continue. Protection of the fish and wildlife habitats and natural resource values of these lands would be contingent upon the enforcement of existing federal, state, and local environmental regulations (the Clean Water Act, state water quality and pollution laws, etc.), and the discretion of the private landowners.

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*ALTERNATIVE 2: PROTECTION AND MANAGEMENT OF 101,110 ACRES BY THE FISH AND WILDLIFE SERVICE (PREFERRED ALTERNATIVE)*

Under this preferred alternative, the Service will acquire 101,110 acres in the Cache River/Bayou DeView/White River landscape to restore watershed function, enhance ecosystem integrity, and manage for fish and wildlife habitats in the face of landscape-scale environmental threats. Cache River NWR, in Monroe, Prairie, Woodruff, and Jackson Counties of east-central Arkansas, extends an areal distance of approximately 65 miles along the Cache River floodplain from Clarendon to Grubbs. Land acquisition has continued on a willing-seller basis, and the refuge now contains about 67,400 acres. This alternative will expand the current 185,574-acre acquisition boundary of Cache River NWR to include an additional 101,110 acres surrounding the Cache River NWR. When combined with the current Cache River NWR acquisition boundary, this project seeks to protect a total of 286,684 acres, both east and west of the Cache River.

This alternative incorporates significant portions of unprotected areas of the lower watersheds of Bayou DeView and Cache River. Significant opportunities exist for restoration of habitats critical to trust wildlife species, and to facilitate comprehensive conservation of these riparian systems through reduction in erosion, sedimentation, unnatural hydrologic periods, contaminants, surface and groundwater withdrawals, and adverse habitat alterations. Additionally, this alternative will encompass the full range of aquatic and terrestrial communities (and associated plant and animal populations) within these watersheds that include upland and bottomland hardwood forests, swamps and marshes, riparian and lacustrine zones, grasslands, and prairies.

*ALTERNATIVE 3: PROTECTION AND MANAGEMENT OF UP TO 86,164 ACRES BY THE FISH AND WILDLIFE SERVICE*

Under this alternative, the Service would acquire up to 86,164 acres of habitats for protection and management as part of Cache River NWR. The Service would acquire sufficient interest in the identified lands to prevent conflicting land uses and to manage the areas for their wildlife values.

**SELECTION RATIONALE**

Alternative 2 is the preferred alternative for implementation, because it directs the development of programs in coordination and consultation with our partners and the public to best achieve the vision, purposes, and goals, which are outlined in this Final LPP. 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 and coordination across the landscape to achieve desired long-term conditions in the Cache River Basin.

Under this alternative, all lands under the management and direction of the refuge will be protected, maintained, and enhanced to best achieve national, ecosystem, and refuge-specific goals and objectives within anticipated funding and staffing levels. In addition, the action positively addresses priority issues and concerns expressed by the public.

*ENVIRONMENTAL EFFECTS*

Through the expansion of the Cache River NWR, as described in the preferred alternative, the Service will be able to: (1) Restore key ecological processes that drive and sustain the unique, but declining Cache River floodplain ecosystem, which is a Wetland of International Importance; (2) improve ecosystem services and associated public benefits; (3) strategically restore altered geophysical features and original connectivity of water flow within and between the Cache River

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and Bayou DeView floodplains; (4) improve hydrologic function of these streams and their floodplains and enhance wetland and aquatic ecosystems for the benefit of trust species; (5) incorporate protection and enhancement of a diversity of critical habitats on which trust species depend, to better represent the full spectrum of habitats that was historically present; (6) restore forested habitat and other natural plant communities to improve overall watershed health and stability, promote carbon sequestration, bolster ecological integrity, and increase habitat patch size to accomplish goals set forth in refuge, state, LMVJV, regional and national plans for migratory birds, forest breeding birds, endangered species, and resident wildlife and fish species; (7) protect, restore, and enhance fragmented and degraded floodplain forests and create large contiguous forest and riparian buffers adjacent to the Cache River and Bayou DeView to improve water quality, provide fish and wildlife movement corridors, and enlarge habitat patch sizes for trust wildlife species; (8) protect lands between Bald Knob, Cache River, and White River National Wildlife Refuges, state wildlife management areas, state natural areas, and private conservation lands, to enlarge conservation benefits within the Cache/White Rivers' watershed; (9) increase and facilitate access and wildlife-dependent recreation on public lands; and (10) any cultural resources found within the refuge will be afforded protection by the Service. Although the anticipated environmental effects of implementation of the preferred alternative are beneficial, there may be minor negative impacts to soils, water quality, air quality, cultural resources, and habitats due to necessary refuge operations and public use activities. However, these negative impacts are anticipated to be minor, discrete in location and/or time, and not significant.

## **COORDINATION**

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

- All landowners within the Expansion Area
- Congressional representatives
- Arkansas' Governor's office
- Arkansas Game and Fish Commission
- Arkansas Natural Heritage Commission
- Arkansas Forestry Commission
- Arkansas Parks and Tourism Department
- Arkansas Department of Environmental Quality
- Arkansas Natural Resources Commission
- Arkansas Department of Agriculture
- Arkansas Farm Bureau
- Natural Resources Conservation Service
- National Park Service
- USDA Farm Service Agency
- U.S. Army Corps of Engineers
- Farm Bureaus for Monroe, Prairie, and Woodruff Counties
- The Nature Conservancy
- The Conservation Fund
- National Wildlife Refuge Association
- Ducks Unlimited
- Audubon Arkansas
- Arkansas Wildlife Federation
- County Judges in Monroe, Prairie, Woodruff, Jackson, Cross, and Poinsett Counties
- Chitimacha Tribe of Louisiana
- Tunica-Biloxi Indian Tribe of Louisiana

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Coushatta Tribe of Louisiana  
Jena Band of Choctaw Indians  
Mississippi Band of Choctaw Indians  
Area farmers and landowners  
Interested citizens and local businesses  
Conservation organizations  
Statewide media

## **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 listed factors (40 CFR 1508.27), as addressed in this Final LPP for the expansion of Cache River NWR:

1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the human environment (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
2. The actions will not have a significant effect on public health and safety (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
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 (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
4. The effects on the quality of the human environment are not likely to be highly controversial (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
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 (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
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 (Draft Environmental Assessment, Chapter IV, Environmental Consequences, Cumulative Effects).
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 (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
9. The actions are not likely to adversely affect threatened or endangered species, or their habitats (Draft Environmental Assessment, Chapter IV, Environmental Consequences).
10. The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment (Draft Environmental Assessment, Chapter IV, Environmental Consequences.)







**LAND PROTECTION PLAN  
FOR THE EXPANSION OF  
CACHE RIVER NATIONAL WILDLIFE REFUGE**

**CACHE RIVER NATIONAL WILDLIFE REFUGE**

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**December 2012**

