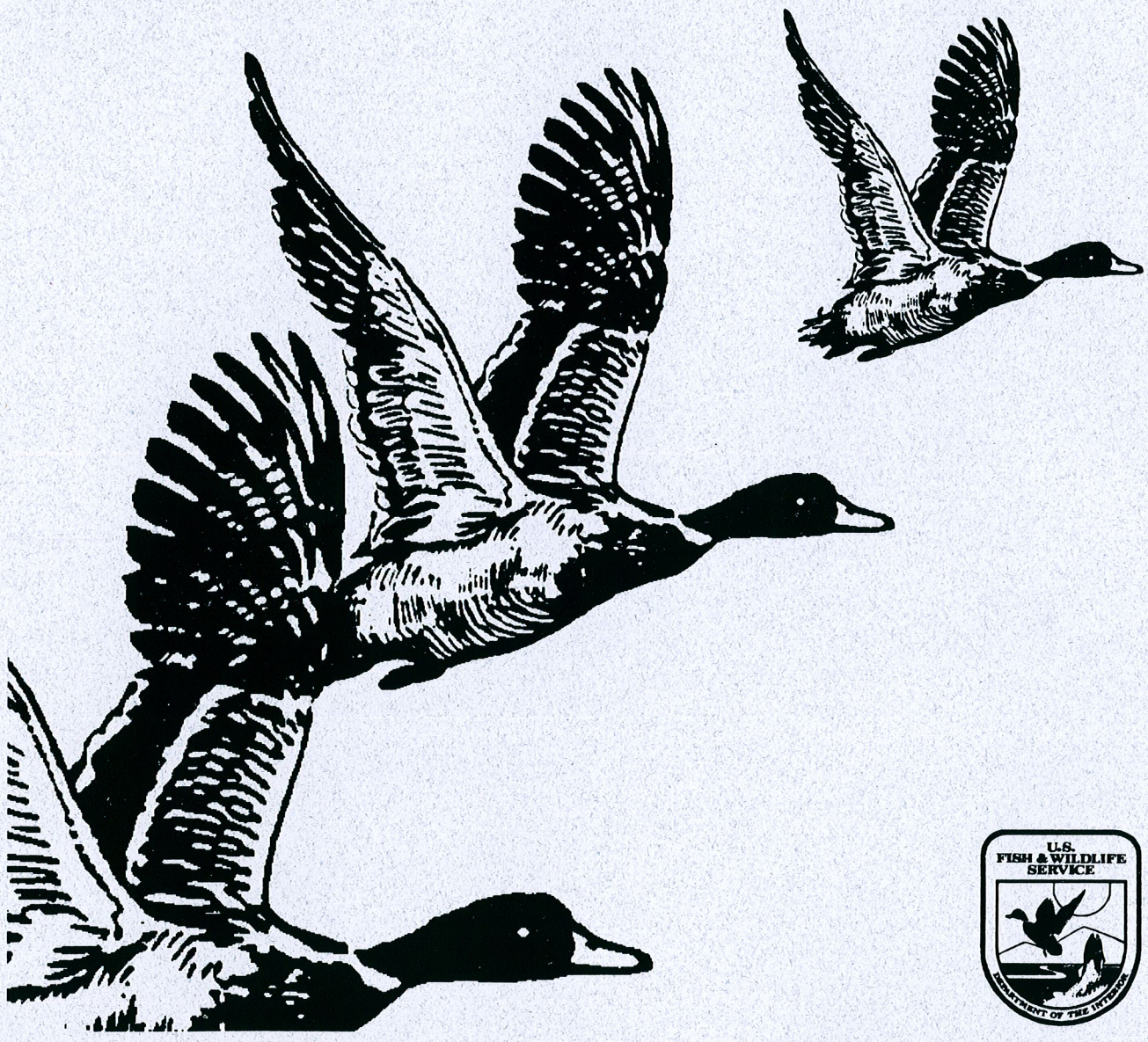
U.S. Fish & Wildlife Service

Final Environmental Assessment and Land Protection Plan

Proposed Establishment of Green River National Wildlife Refuge

Henderson County, Kentucky



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

To: Recipients of the Final Environmental Assessment and Land Protection Plan for the Proposed Establishment of Green River National Wildlife Refuge

The Fish and Wildlife Service is pleased to provide you with a copy of the Final Environmental Assessment and Land Protection Plan for the Proposed Establishment of Green River National Wildlife Refuge in Henderson County, Kentucky. The assessment outlines the actions proposed by the Service to protect and restore valuable bottomland hardwood and other wildlife habitats that are important to migratory waterfowl and a natural diversity of fish and wildlife.

The proposal was developed by the Service in coordination with the State of Kentucky, other Federal agencies, and private groups. In the assessment, three alternatives and their potential impacts on the environment are evaluated. The Service believes the proposed action to protect and manage the bottomland hardwood habitat is a positive step in protecting and enhancing the area's fish and wildlife.

Additional copies of the assessment can be obtained free of charge on request to: U.S. Fish and Wildlife Service, 1875 Century Boulevard, Suite 420, Atlanta, Georgia 30345, telephone 1-800-419-9582. The document is also available over the internet at **http:\\planning.se.fws.gov**. Your interest and support for preserving the area of the proposal are appreciated.

Sincerely yours,

H Dale Hall

for Sam D. Hamilton
Regional Director

Enclosure

FINDING OF NO SIGNIFICANT IMPACT

for the
Proposed Establishment of
Green River National Wildlife Refuge
Henderson County, Kentucky

The U.S. Fish and Wildlife Service proposes to protect and manage certain lands along the confluence of the Green River and Ohio River in Henderson County, Kentucky, through the establishment of Green River National Wildlife Refuge. The Service has analyzed the following alternatives to the proposal in an Environmental Assessment (copy attached):

Alternative 1:	No Action
Alternative 2:	Restoration and Management of up to 23,000 Acres by U.S. Fish and Wildlife Service (Preferred Alternative)
Alternative 3:	Restoration and Management of up to 15,630 Acres by the U.S. Fish and Wildlife Service

The preferred alternative was selected over the other alternatives because it offers full protection, restoration and management of the natural resource values of a valuable complex of wetland habitats. Establishment of the refuge, habitat restoration, and proper management would provide excellent migratory bird habitat and contribute to the habitat conservation goals of the North American Waterfowl Management Plan and the Lower Mississippi River Joint Venture.

Implementation of the agency's decision would be expected to result in the following environmental, social and economic effects:

See Environmental Assessment, pages 26-30.

Because the project does not have any adverse effects, measures to mitigate and/or minimize adverse effects have not been incorporated into the proposal.

The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 (EA, pages 29-30).

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

All affected landowners
Congressional representatives
State Clearinghouse
Kentucky Department of Fish and Wildlife Resources
Local community officials
Governor of Kentucky
Kentucky Historic Preservation Officer
Interested citizens and organizations

Copies of the Environmental Assessment are available by contacting:

Mr. Charles R. Danner
U.S. Fish and Wildlife Service
1875 Century Boulevard, Suite 420
Atlanta, Georgia 30345
1-800-419-9582

Therefore, it is my determination that the proposal does not constitute a major federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. This determination is based on the following factors (40 CFR 1508.27):

1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the human environment (EA, page 29).

2. The actions will not have a significant effect on public health and safety (EA, page 29).

3. The project will not significantly affect any unique characteristics of the geographic area (EA, page 30).

4. The effects on the quality of the human environment are not likely to be highly controversial (EA, page 30).

5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment (EA, pages 26-30).

6. The actions will not establish a precedent for future actions with significant effects nor does it represent a decision in principle about a future consideration (EA, page 30).

7. There will be no cumulatively significant impacts on the environment (EA, page 30).

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 (EA, page 30).

9. The actions are not likely to adversely affect endangered or threatened species, or their habitats (Section 7 Consultation).

10. The actions will not lead to a violation of federal, state, or local laws imposed for the protection of the environment (EA, page 30).

References:

Final Environmental Assessment and Land Protection Plan for the Proposed Establishment of Green River National Wildlife Refuge, U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia, June 2001.

Acting H Dale Hall
Regional Director

6/12/01
Date

Final Environmental Assessment and Land Protection Plan

Proposed Establishment of Green River National Wildlife Refuge

Henderson County, Kentucky

U.S. Fish and Wildlife Service
Southeast Region
1875 Century Boulevard
Atlanta, GA 30345
404-679-7244

U.S. Fish and Wildlife Service
1-800-419-9582
http://planning.se.fws.gov

June 2001

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I. PURPOSE AND NEED FOR ACTION

A. *Introduction*

The U.S. Fish and Wildlife Service (Service), Southeast Region, proposes to protect and manage certain lands along the confluence of the Green River and Ohio River in Henderson County, Kentucky, through the establishment of the Green River National Wildlife Refuge. The purpose of the proposed refuge is to restore and manage a valuable complex of wetland habitats for the benefit of migratory birds. Establishment of the refuge, habitat restoration, and proper management would provide excellent migratory bird habitat and contribute to the habitat conservation goals of the North American Waterfowl Management Plan and the Lower Mississippi River Joint Venture.

The mission of the National Wildlife Refuge System is "... to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Improvement Act of 1997). National wildlife refuges provide important habitat for native plants and many species of mammals, birds, fish, insects, amphibians, and reptiles. They also play a vital role in preserving endangered and threatened species. Refuges offer a wide variety of wildlife-dependent recreational opportunities and many have visitor centers, wildlife trails, and environmental education programs. Nationwide, about 30 million visitors annually hunt, fish, observe and photograph wildlife, or participate in educational and interpretive activities on refuges.

The scope of this environmental assessment is limited to the proposed acquisition of lands for the establishment of a new national wildlife refuge. The environmental assessment is not intended to cover the development and/or implementation of detailed, specific programs for the administration and management of those lands. The enclosed conceptual management plan (Appendix A) and interim compatibility determination (Appendix B) give general outlines on how the new refuge would be managed. These appendices are provided as general information for the public in its review of the environmental assessment. If the proposed lands or interests in lands are acquired and the refuge is established, the Service will develop a detailed Comprehensive Conservation Plan to incorporate the new lands and resources under its control. At that time, this Comprehensive Conservation Plan will be made available for public review in accordance with the requirements of the National Environmental Policy Act.

B. Background

The lands for the proposed Green River National Wildlife Refuge are located in the Scuffletown Bottoms area along the Ohio River in Henderson County, Kentucky, between the cities of Evansville, Indiana and Henderson, Kentucky (Figure 1). Owensboro, Kentucky is about 15 miles to the east. The confluence of the Green River and Ohio River lies within the proposed refuge boundary. U.S. Highway 41 is the only major highway that crosses the area. The proposed refuge includes lands on the north and south sides of the Ohio River, all in Kentucky, and totals approximately 23,000 acres. Newburgh Locks and Dam, a popular fishing site on the Ohio River, is located adjacent to the proposed refuge.

The project area was first identified by the Service in 1958 as an acquisition priority for waterfowl. In 1978, the area was recognized as important to waterfowl in the Service's "Bottomland Hardwood Preservation Program" report. The area was again identified in 1989 as a high priority site for waterfowl in the New Madrid Wetlands project subsection of the North American Waterfowl Management Plan.

The area is located in the Shawnee Hills subdivision of the Interior Low Plateaus (ILP) Bird Conservation Plan (physiographic area #14). This forested wetland habitat has been mostly replaced by agriculture and is designated in the ILP Bird Conservation Plan as a priority habitat for restoration. The site is also located adjacent to the State of Kentucky's Green River State Forest and John James Audubon State Park. The proposed refuge, if it is established, would augment both of these state-managed protected areas.

The U.S. Army Corps of Engineers, Louisville District, has prepared an Interim Feasibility Report for its Ohio River Ecosystem Restoration Projects (in Illinois, Indiana, Kentucky, Ohio, West Virginia, and Pennsylvania). One of the key objectives of this study is to restore the bottomland hardwoods of identified high priority areas in partnership with federal and state agencies, private landowners, and conservation groups. Each state in the Corps' study was asked to identify its top priority sites for restoration. The State of Kentucky identified the Scuffletown Bottoms as the number one priority site for Kentucky.

In addition, the Service's Ohio River Valley Ecosystem Team (ORVET) has reviewed and endorsed the Green River refuge proposal. The ORVET indicated that protection of the proposed lands and restoration of the wetland and riparian habitats on the proposed refuge would address several resource priorities identified in the team's ecosystem plan for the Ohio River Valley system.

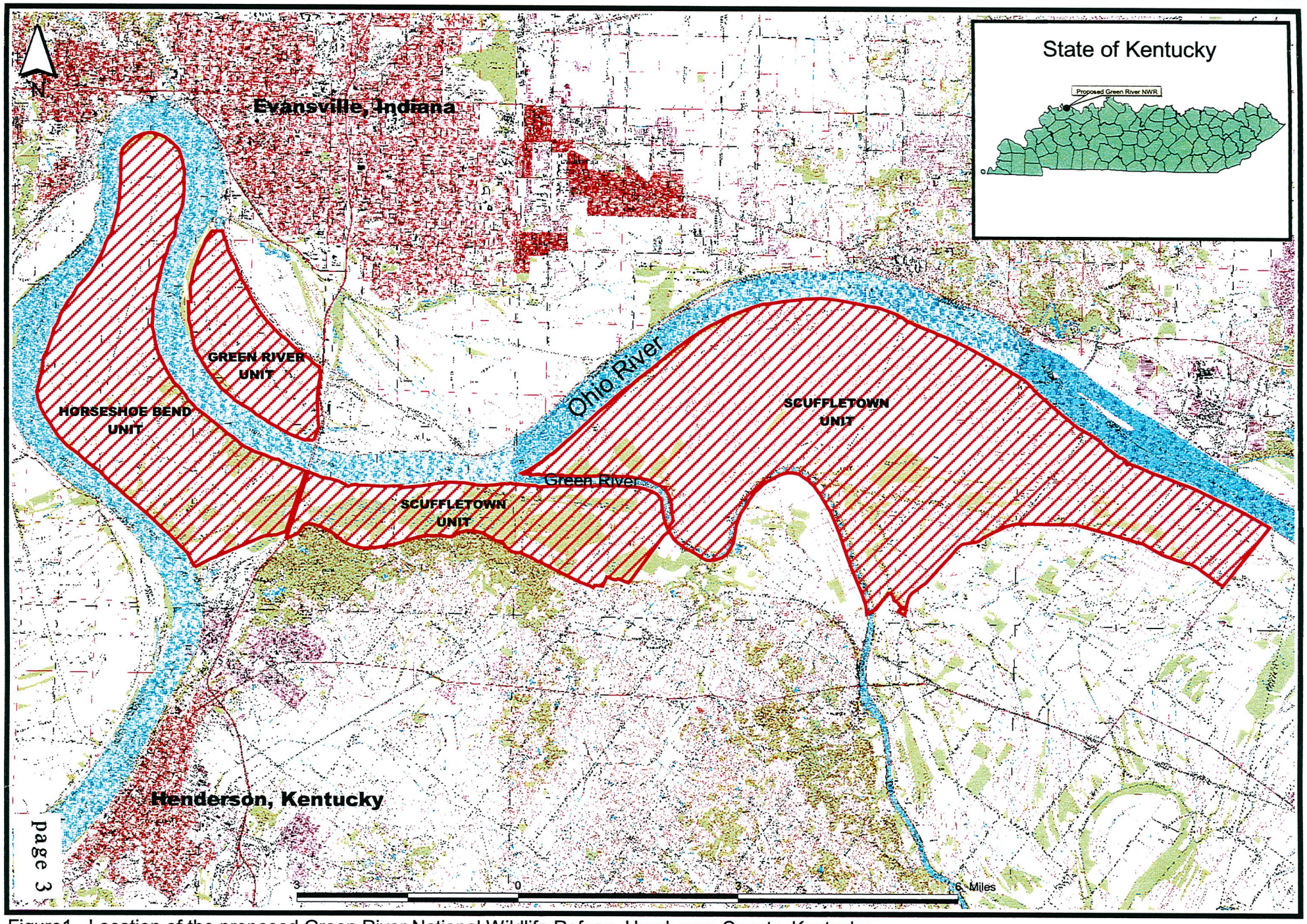

Figure1. Location of the proposed Green River National Wildlife Refuge, Henderson County, Kentucky

The proposed Green River National Wildlife Refuge would consist of three units with the majority of the lands on the south side of the river. The Scuffletown Unit (approximately 15,630 acres) and the Horseshoe Bend Unit (approximately 5,420 acres) lie along the south bank of the Ohio River and are separated by U.S. Highway 41. The Green River Island Unit (approximately 1,650 acres) is located west of Highway 41 along the north bank of the Ohio River.

Several county-maintained paved and gravel roads provide access to the proposed refuge area. The Scuffletown and Horseshoe Bend Units have interior gravel roads, and the Green River Island Unit is accessible from a paved county road that runs along its northeastern boundary (this road is actually located in and maintained by Vanderburgh County, Indiana). Some additional interior roads are dirt roads used for farming operations.

C. Proposed Action

The Service proposes to protect and manage the identified lands along the Green and Ohio Rivers by acquisition through fee title purchases from willing sellers and through leases, conservation easements, or cooperative agreements from willing landowners. All lands and waters acquired would be managed by the Service as a national wildlife refuge. The goals of the proposed refuge would be to provide (1) habitat for migrating and wintering waterfowl, (2) habitat for non-game land birds, (3) habitats for a natural diversity of fish and wildlife, (4) nesting habitat for wood ducks and other locally nesting migratory waterfowl, (5) quality hunting and sportfishing opportunities, and (6) opportunities for environmental education, interpretation, and wildlife-oriented recreation.

Funding for land acquisition under this proposal would be sought through the Migratory Bird Conservation Fund (MBCF) and the Land and Water Conservation Fund (LWCF). The MBCF includes monies collected from the sale of duck stamps, entrance fees from certain national wildlife refuges, and import duties on arms and ammunition. The authority for the use of these funds for land acquisition is the Migratory Bird Conservation Act. The LWCF includes monies collected from the sale of offshore oil leases. The authority for the use of these funds is the Emergency Wetlands Resources Act of 1977.

In acquiring these lands, the Service will coordinate with the State of Kentucky to seek concurrent law enforcement jurisdiction over the area.

D. *Coordination and Consultation*

A series of public scoping meetings were held in Henderson and the surrounding communities to discuss and seek input for formulation of the refuge proposal. The Service and the Kentucky Department of Fish and Wildlife Resources met with the following groups: Henderson County Judge Executive; Ducks Unlimited; Quail Unlimited; National Wild Turkey Federation; University of Kentucky Extension Office; Aluminum Company of America (Alcoa); League of Kentucky Sportsmen; major landowners from the Scuffletown Unit; Senator Mitch McConnell's local aide; Henderson County Tourism Director; Audubon State Park Director; the county agents for the Natural Resources Conservation Service in Henderson County and Union County; the Louisville District Office of the U.S. Army Corps of Engineers; Kentucky Division of Forestry; and local elected officials. Interviews regarding the refuge proposal were given to local television stations, newspapers, and a radio station. Press coverage has been very favorable.

The Service has closely coordinated the development of this proposal with the Kentucky Department of Fish and Wildlife Resources (KDFWR), which strongly supports the establishment of the proposed refuge. Initial public reaction to the proposed refuge has been favorable. Other refuges and wildlife management areas in Kentucky are popular with sportsmen, and most conservation groups support the Service's acquisition program. Support for the project has also been expressed by local, state, and congressional elected officials.

This project has also been closely coordinated with the Service's Ohio River Valley Ecosystem Team, whose stated mission is to "Work cooperatively with other government agencies and the private sector for the conservation of the Ohio River Valley Ecosystem's native animal and plant diversity through perpetuation of a dynamic, healthy ecosystem."

E. *U.S. Fish and Wildlife Service Land Acquisition Policy*

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 recreational and educational purposes. These lands include national wildlife refuges, national fish hatcheries, research stations, and other areas.

The Service's policy is to acquire land from willing sellers, and only when other protective means, such as local zoning restrictions or regulations, are not appropriate, available, or effective. When land is needed to achieve fish and

wildlife conservation objectives, the Service seeks to acquire the minimum interest necessary to reach those objectives. If fee title is required, the Service gives full consideration to extended use reservations, exchanges, or other alternatives that will lessen the impact to the owner and the community. Donations of desired lands or interests are encouraged.

The Service, like all federal agencies, has the power of eminent domain, which allows the use of condemnation to acquire lands and interest in lands for the public good. This power, however, requires Congressional approval and is seldom used. Nationwide, over the past ten years less than one percent of the lands in the National Wildlife Refuge System have been acquired through eminent domain. The Service usually acquires lands from willing sellers. In all fee title cases, the Service is required by law to offer 100 percent of the property's appraised market value, as set out in an approved appraisal that meets professional standards and federal requirements.

F. Public Participation

The public was notified of the proposed refuge and the availability of the draft environmental assessment and land protection plan through a news release distributed on January 25, 2001. A notice of availability was also published in the *Federal Register* on January 18, 2001. The news release and the *Federal Register* notice summarized the proposal, invited comments from the public, and gave pertinent dates and other information necessary for public review and comment. Copies of the draft document were provided to representatives of federal, state, and county governments, other federal and state agencies, interest groups, affected landowners, and the general public. Comments from the public were received until the close of the public review period on March 9, 2001.

A total of 61 written responses (letters and e-mails) and three telephone calls were received. Of these, all telephone calls and 49 of the written responses (81%) supported the establishment of the proposed refuge. Of the remaining 12 responses, five were from citizens who opposed the refuge proposal; five were from landowners who opposed the refuge and were not willing to sell; one was from a landowner who questioned whether he would get a reasonable offer for his property and whether he would still be able to access his property through a road that runs through the proposed refuge; and one was from another landowner who was neutral about the proposed refuge but indicated that he was not willing to sell all or a portion of his properties.

The primary concerns that were expressed by the respondents included (1) the use of taxpayer monies to purchase the project lands; (2) loss of land from the county's

real estate tax rolls; (3) loss of valuable farmland to developers and other uses; (4) the use of eminent domain (condemnation) to force landowners off their lands; (5) the fear of restrictions or controls on private property rights for those landowners who are not willing to sell and for other landowners who own land near or adjacent to the proposed refuge boundary; (6) the fear of loss or restriction of access provided by Green River Road No. 2 and other roads to privately owned lands within the proposed refuge boundary; and (7) the fear that a reasonable offer would not be made for the acquisition of lands within the proposed refuge.

The Service's responses to these specific concerns are as follows:

Use of taxpayer monies to purchase the project lands - No federal income tax monies will be used to purchase refuge land. As stated in the Draft Environmental Assessment, funding for land acquisition under this proposal would be provided through the Migratory Bird Conservation Fund and the Land and Water Conservation Fund.

The Migratory Bird Conservation Fund is a special federal account established by Congress for migratory bird conservation purposes. It collects money from the sale of duck stamps, entrance fees from certain national wildlife refuges, and import duties on arms and ammunition. The Migratory Bird Conservation Act (16 U.S.C. 715-715d) provides the authority for the use of these funds for land acquisition.

The Land and Water Conservation Fund (16 U.S.C. 4601-4601-11, Public Law 88-578) is another special federal account created by Congress to acquire lands for conservation and recreation by federal and state agencies. Certain federal revenues, including proceeds from the sale of surplus federal property, the federal motorboat fuels tax, and oil and gas leases from the Outer Continental Shelf, are credited to the Land and Water Conservation Fund for this purpose. The authority for the use of these funds for land acquisition is provided by the Emergency Wetlands Resources Act (16 U.S.C. 3901-3931).

Loss of land from the county's real estate tax rolls - All tracts of land acquired by the Service would be removed from local real estate tax rolls because federal government agencies are not required to pay state or local taxes. However, as stated in the Draft Environmental Assessment, the Service makes annual payments to local governments in lieu of real estate taxes as required by the Refuge Revenue Sharing Act (Public Law 95-469). Payment for acquired land is computed on whichever of the following formulas is greatest: (1) three-fourths of 1% of the fair market value of the lands acquired in fee title; (2) 25% of the net refuge receipts collected; or (3) 75 cents per acre of the lands acquired in fee title within the county. The estimated annual revenue-sharing payments

that would be made to Henderson County, Kentucky, would be $187,500 at full entitlement.

Loss of valuable farmland to developers and other uses - Through willing sellers, any farmlands acquired by the Service for the establishment of the proposed refuge will be managed for their fish and wildlife resource values, and therefore will be permanently protected from commercial and residential development. Currently, corn and soybeans are the most commonly grown crops. The majority of these crops have been heavily impacted by annual flooding from the Ohio and Green Rivers. During the late 1990s, most crops were heavily damaged due to overbank flooding during the months of May and June. As stated in the Draft Environmental Assessment, the Service's first priority for acquisition is the Scuffletown Unit. These lands offer the best opportunities for high quality waterfowl habitat enhancement and restoration. Some landowners in this area have already expressed an interest in entering into leases, easements, or cooperative agreements with the Service.

The second priority is the Horseshoe Bend Unit, which covers about 5,420 acres. This area includes some croplands that have been made marginal from the effects of annual flooding. These lands offer good potential for reforestation through the seeding of bottomland hardwood species. Some landowners within this area have expressed a willingness to sell.

The third priority is the 1,650-acre Green River Unit on the north side of the Ohio River. This area contains productive croplands and offers potential for the reestablishment of a forested riparian corridor along the banks of the river, with good possibilities for a cooperative farming program on the higher elevated lands.

Finally, in all three units as described above for the proposed refuge, the restoration of bottomland hardwood habitat will be a priority management objective and therefore some of the agricultural lands acquired by the Service will be taken out of production. This could adversely affect some tenant farmers if they were unable to find replacement lands. However, some of the acquired farmlands will continue to be farmed under a cooperative agreement with the Service. On these lands, the current farmer will be given the first option to continue farming under a cooperative agreement where 25% of the crops will remain in the fields for wildlife. Currently, there are about 185,994 tillable acres in Henderson County. Therefore, if the proposed refuge is established, the anticipated land use changes on a portion of the 23,000 acres proposed for the refuge are not expected to cause any significant economic or sociocultural impacts to the local community. These lands will retain their traditional rural character and will not be developed for commercial and residential use under Service management.

Use of eminent domain (condemnation) to force landowners off their lands - As stated in the Draft Environmental Assessment, the Service's policy is to acquire land only from willing sellers. The power of eminent domain (condemnation) will not be used to acquire any of the lands proposed for the establishment of Green River National Wildlife Refuge. When land is needed to achieve fish and wildlife conservation objectives, the Service seeks to acquire the minimum interest necessary to reach those objectives. This minimum interest may include a conservation easement, lease, or cooperative agreement in which a landowner chooses to retain ownership of his or her land but is willing to allow the Service to manage it, or a portion of it, for fish and wildlife conservation purposes. If a fee title purchase is required, the Service gives full consideration to extended use reservations, exchanges, or other alternatives that will lessen the impact to the landowner and the community. Donations of desired lands or interests in lands are encouraged. In all fee title cases with willing sellers, the Service is required by law to offer 100 percent of the property's appraised market value, as set out in an approved appraisal that meets professional standards and federal requirements.

Fear of restrictions or controls on private property rights for those landowners who are not willing to sell and for other landowners who own land near or adjacent to the proposed refuge boundary - In all cases where a property lies within an area that is being proposed for the establishment of the refuge, the landowner is under no pressure or obligation whatsoever to sell or lease his or her land or enter into a conservation easement or cooperative agreement. Any landowner who chooses not to sell his or her property will retain all the rights, privileges, and responsibilities of private land ownership. This includes, but is not limited to, the right to access, hunting and fishing, vehicle use, control of trespass, the right to sell to any party, and the responsibility to pay local real estate or property taxes. Establishment of the proposed refuge would not affect these private property rights. This will hold true even if adjacent or neighboring landowners decide to sell their land to the Service to make it part of a national wildlife refuge.

In addition, once a refuge is approved, land acquisition proceeds only after the willing landowners are contacted and the lands are appraised. Then the lands are acquired when funds become available, and this usually takes several years. The Service has found that many landowners who initially chose not to sell their properties for inclusion in a refuge later change their minds. By including such properties, the Service provides landowners with options they would not otherwise have if their lands were not situated within an approved acquisition boundary.

Fear of loss or restriction of access provided by Green River Road No. 2 and other roads to privately owned lands within the proposed refuge boundary - The Service has no intention of restricting or controlling access by legal landowners on Green River Road No. 2 and other roads that run through the proposed refuge. If the proposed refuge is established, these roads will remain open to all landowners. In addition, the Service will work with the county to address the maintenance of Green River Road No. 2.

Fear that a reasonable offer would not be made for the acquisition of lands within the proposed refuge - As stated previously, the Service's policy is to acquire land only from willing sellers, and in all fee title cases the Service is required by law to offer 100 percent of the property's fair market value, as set out in an approved appraisal that meets professional standards and federal requirements.

II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

In determining how to achieve the fish and wildlife habitat protection goals for the project lands identified in this document, the Service considered and evaluated three alternatives. These are:

A. Alternative 1: No Action

This is the "status quo" alternative. Under this alternative, the Service would not acquire any of the project lands identified in this proposal. The proposed project lands would remain in private ownership and current land uses would continue.

Enhancement, restoration, and management of the area's fish and wildlife habitats and natural resource values would be at the discretion of the private landowners. Given the present conditions of the lands and the current economic situation, it is unlikely that a significant acreage, if any, of the project area would be managed for the restoration, protection, and conservation of its natural resource values.

B. Alternative 2: Protection and Management of up to 23,000 Acres by the U.S. Fish and Wildlife Service (Preferred Alternative)

Under this alternative, the Service would establish the Green River National Wildlife Refuge by acquiring up to 23,000 acres through a combination of fee title purchases from willing sellers and leases, conservation easements, or cooperative

agreements from willing landowners (Figures 2, 3, 4 and 5). This is the Service's preferred alternative, as it would enable the Service to restore and manage these lands for their diversity of wildlife habitats, with special emphasis on migratory birds and endangered species to provide lasting benefits to the public.

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

- **Leases and Cooperative Agreements**

Potentially, the Service can protect and manage habitat through leases and cooperative agreements. Management control on privately owned lands could be obtained by entering into long-term renewable leases or cooperative agreements with the landowners. Short-term leases can be used to protect or manage habitat until more secure land protection can be negotiated.

- **Conservation Easements**

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

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

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

- Development rights (agricultural, residential, etc.);
- Alteration of the area's natural topography;

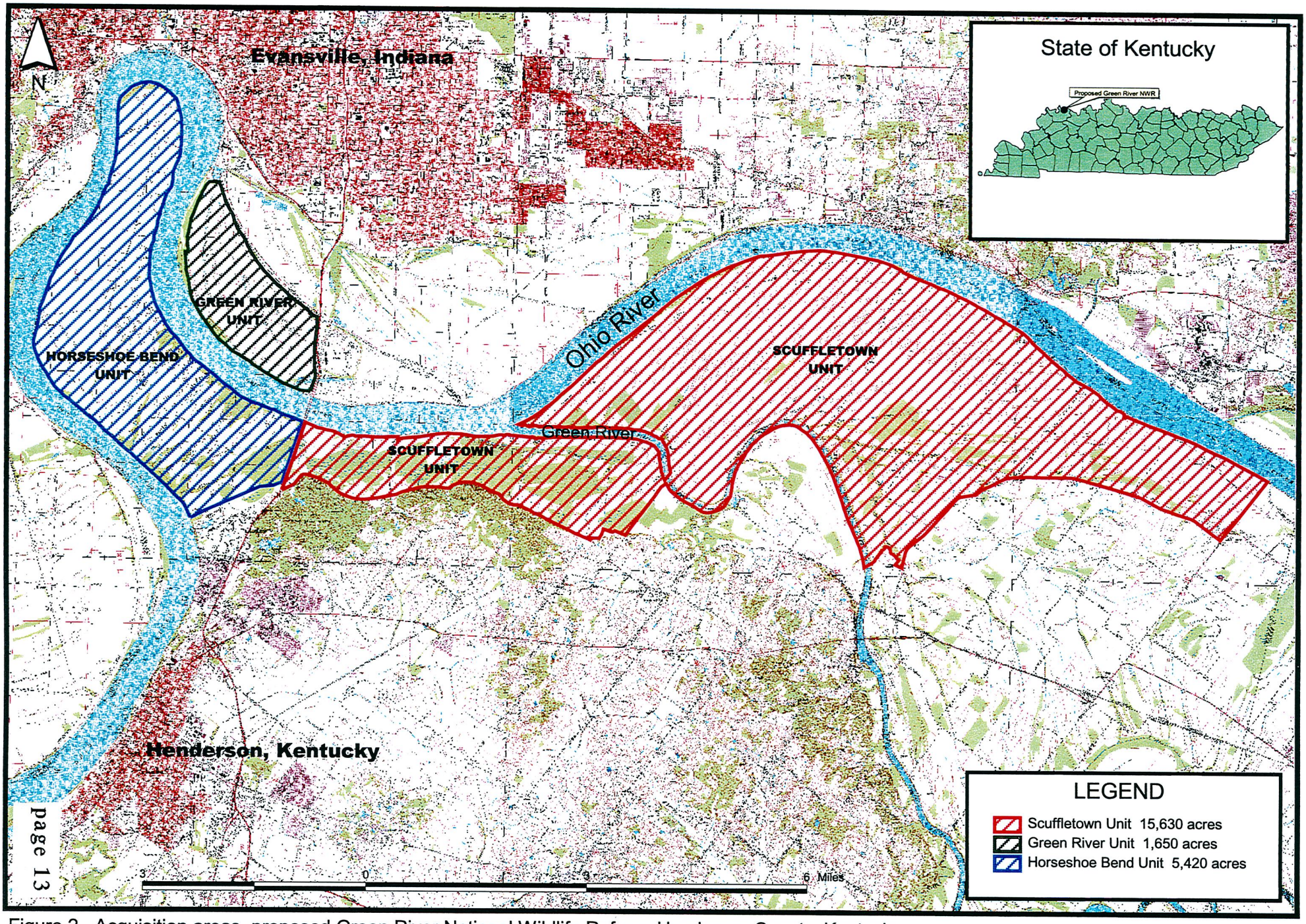

Figure 2. Acquisition areas, proposed Green River National Wildlife Refuge, Henderson County, Kentucky

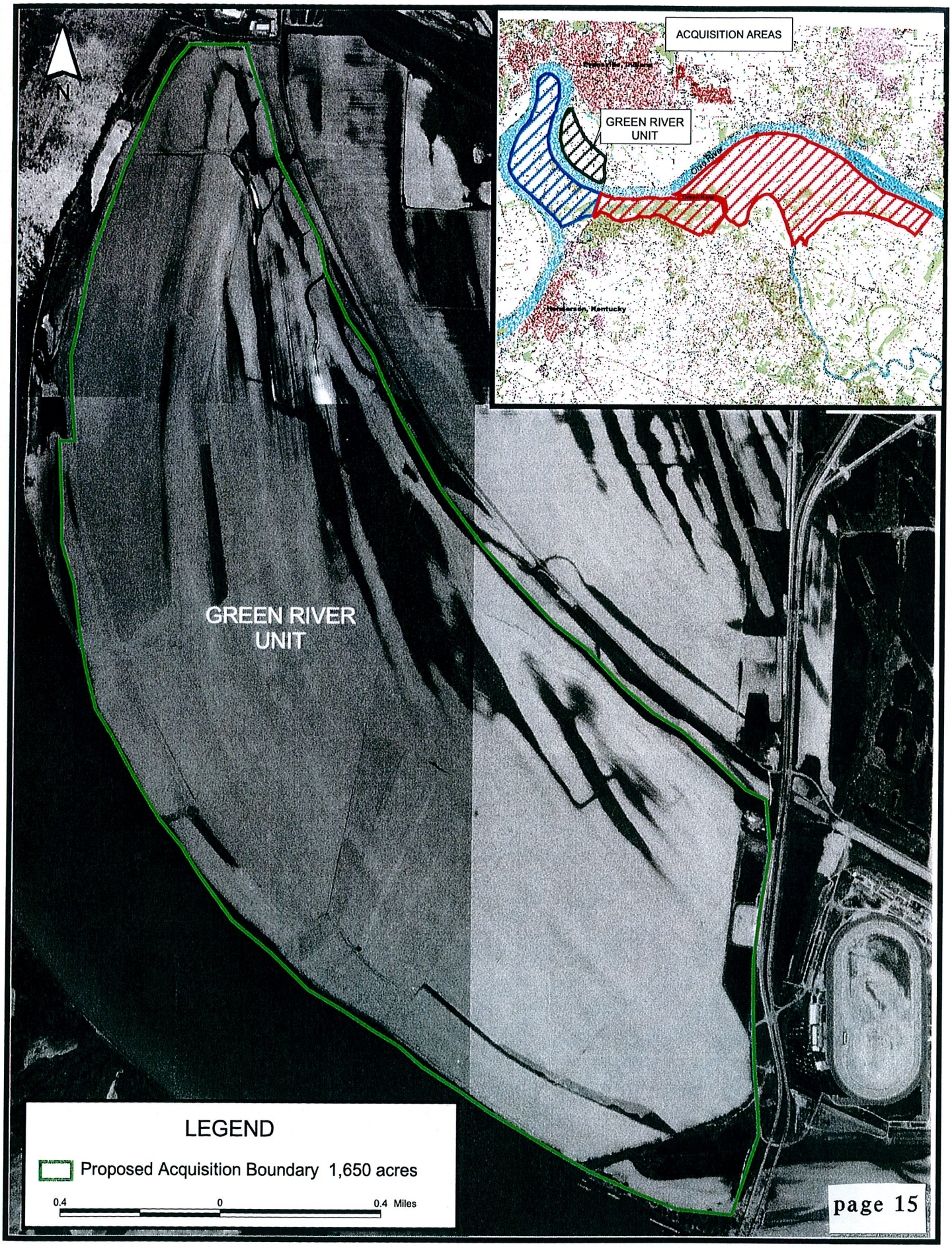

Figure 3. Proposed Green River Unit, Green River National Wildlife Refuge, Henderson County, Kentucky

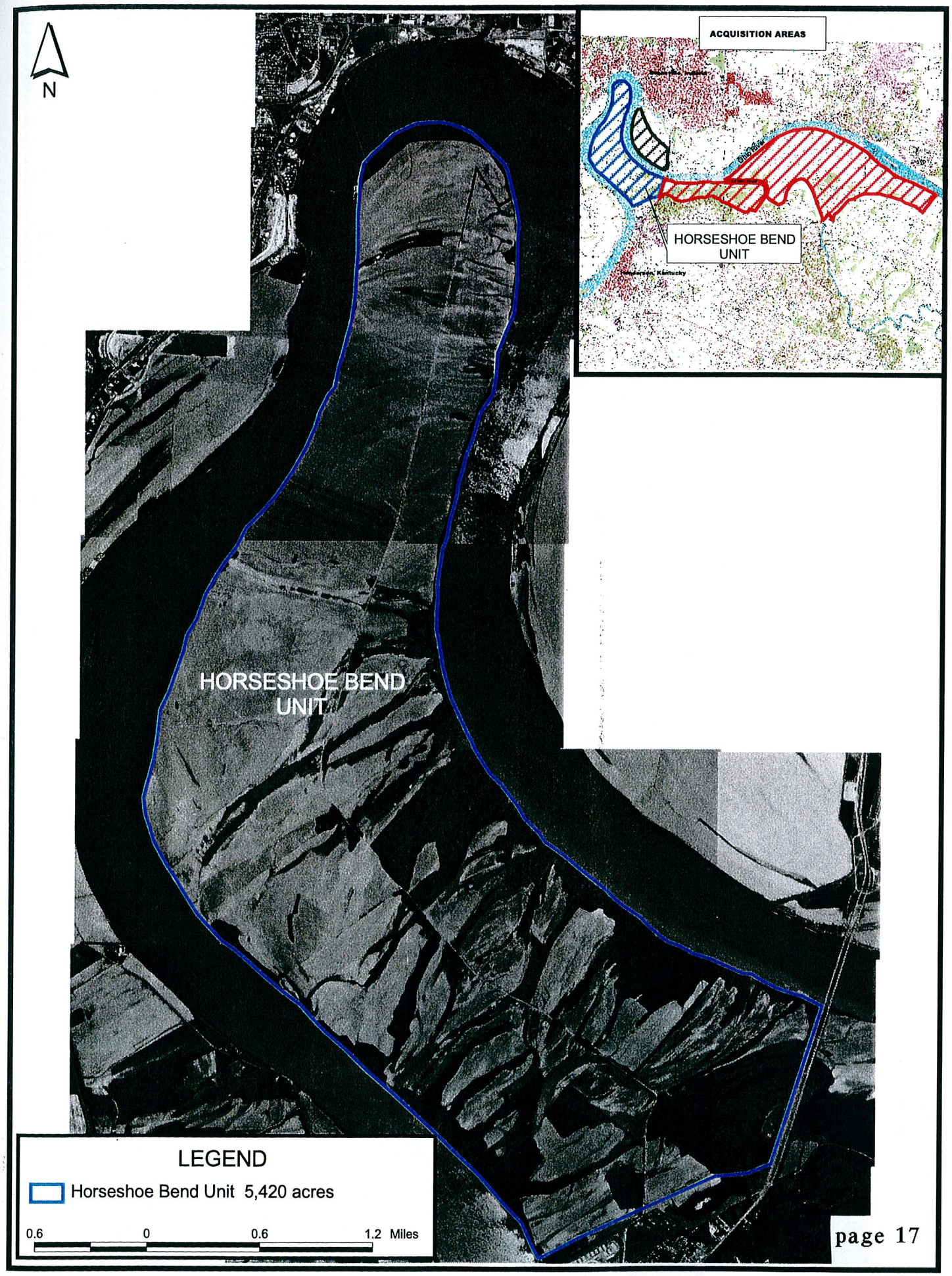

Figure 4. Proposed Horseshoe Bend Unit, Green River National Wildlife Refuge, Henderson County, Kentucky

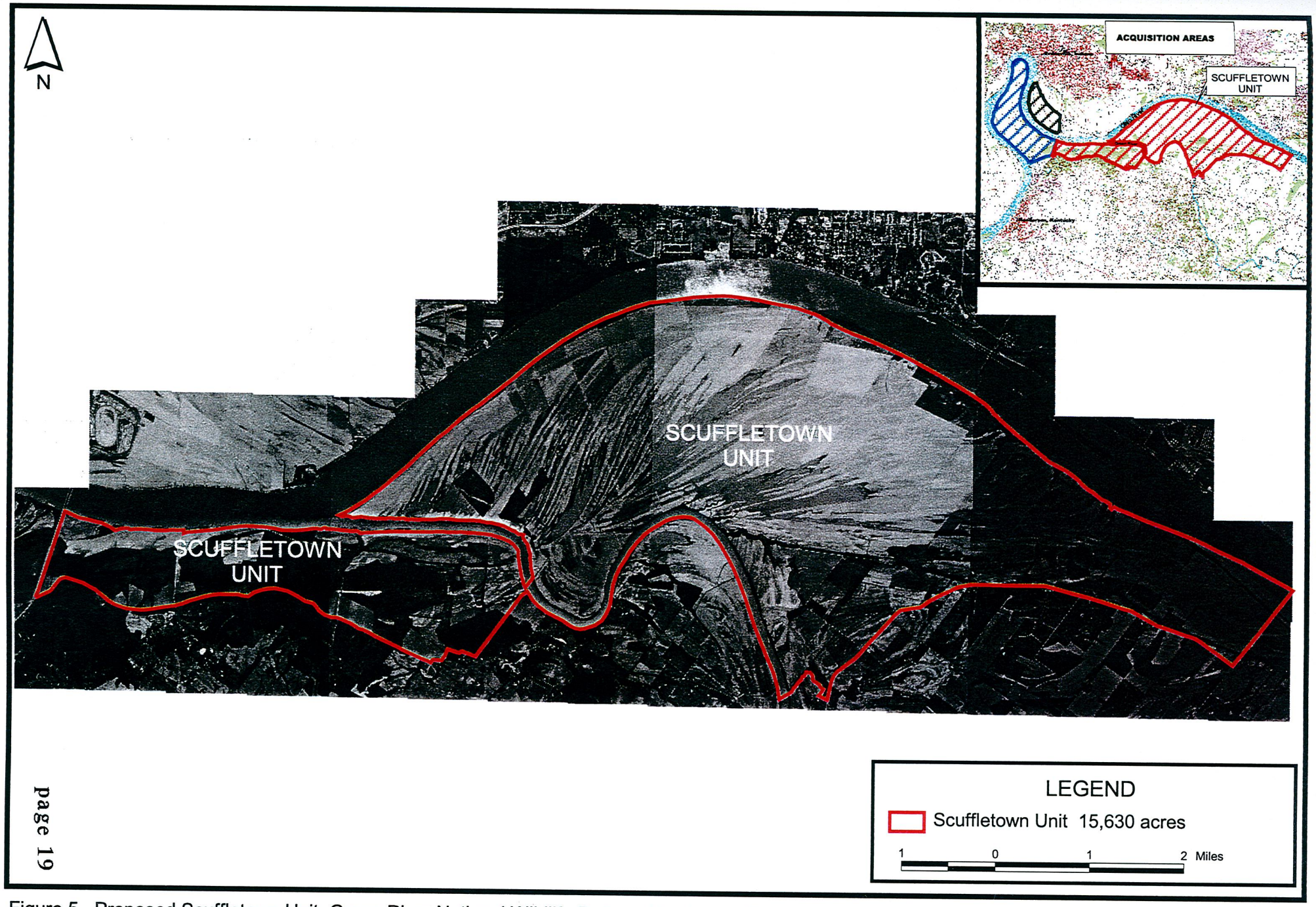

Figure 5. Proposed Scuffletown Unit, Green River National Wildlife Refuge, Henderson County, Kentucky

- Uses adversely affecting the area's floral and faunal communities;
- Private hunting and fishing leases;
- Excessive public access and use; and
- Alteration of the natural water regime.

- **Fee Title Acquisition**

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

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

C. *Alternative 3: Protection and Management of up to 15,630 Acres by the U.S. Fish and Wildlife Service*

Under this alternative, the Service would acquire and manage only the proposed lands within the Scuffletown Unit (up to 15,630 acres, as shown in Figure 5). The lands within this unit provide the best waterfowl habitat and management opportunities within the project area. The Service would manage these lands primarily for migratory waterfowl and other wetland-dependent fish and wildlife values. The remaining project lands at the Horseshoe Bend and Green River Units would remain in private ownership and any wildlife habitat improvements on those units would be left to the discretion of the landowners.

III. AFFECTED ENVIRONMENT

This section describes the area's natural environment, including vegetation, fish and wildlife resources, and cultural resources. The area's socioeconomic and sociocultural conditions and land uses that could be affected by the proposed action are also discussed.

A. *General*

The climate of the project area is considered continental, with the highest temperatures typically occurring in late July and early August and the lowest temperatures in January. Rainfall is greatest in the spring from March through May, and the driest periods typically occur in October. The average annual precipitation is about 40 inches. Snow occurs in most every year and total accumulations of 10 to 12 inches per year are common.

Annual floods of the Ohio River usually occur from November through May, but exceptions have occurred in most every month. Normal changes in pool levels during the high water season include increases in surface water elevation from normal pool (342 feet) to approximately 360-370 feet. At this water level, the depressional areas within the proposed refuge lands are filled with shallow water or completely inundated.

B. *Vegetation and Land Use*

Historically, the project area was once part of a large bottomland hardwood forest that had extensive oak, hickory, and native pecan components. Some sections of the area were converted to agricultural uses during the early portions of the century; however, the majority of the area was converted into active agricultural production during the late 1960s and early 1970s. This conversion was accomplished by draining the wetlands and altering the interior drainage systems, as well as clearing the bottomland hardwood forest. Currently, the area is predominantly ridge and swale farmland, with river-scar oxbows, several sloughs, wet depressional areas, and a small amount of bottomland hardwoods. Cypress Slough, located on the south side of the Green River in the Scuffletown Unit, is a large natural wetland. A few scattered tracts of cut-over forest remain, consisting primarily of silver maple, cottonwood and hackberry. Downstream of the mouth of the Green River, approximately 1,200 acres of bottomland forest remain, consisting mostly of cypress, willow, hackberry, silver maple, ash, and buttonbush.

Corn and soybeans are the most commonly grown crops on the area. However, the area's agricultural production has been heavily impacted by annual flooding from both the Ohio and Green Rivers. During the late 1990s, most crops were heavily damaged due to overbank flooding during the months of May and June. The majority of the farmlands within the project area are extensively tilled in the fall. This fall tillage reduces the availability of waste grain for use as food by wildlife. The farmers have installed a levee system and three water control structures along the Green River to prevent or reduce the effects of overbank

flooding. Many of the interior drainage systems presently on the land offer excellent opportunities to restore the area's historical hydrology and quality wildlife habitats, with minor modifications.

C. Wildlife Resources

Waterfowl occur in large numbers in the Green River bottoms when desirable water levels occur. On February 1, 1999, over 10,000 ducks and 8,000 geese were observed feeding and resting in the flooded bottoms. Waterfowl species most commonly seen on the project area include mallard, Canada geese, blue-winged and green-winged teal, gadwall, wigeon, wood duck, redhead, canvasbacks and ring-necks. Some snow geese and white-fronted geese have also been infrequently observed. However, significant populations of migratory waterfowl are observed on the project area only when flood conditions from the Ohio and Green Rivers negate the extensive drainages and alterations that have been imposed on the land by man.

The area's wooded and shrub tracts are used by many species of non-game neotropical migratory birds. Migratory shorebirds also use the area during their spring migrations, and wading birds such as snipe, great blue heron, green heron, common egret, and great egret are frequently seen. The proposed refuge area has been the focus of several efforts at dove hunt management, as demonstrated by the annual presence of large sunflower fields. Woodcocks use the area only as migration habitat.

The project area receives frequent use and visits by bald eagles and many other raptors. Indiana bat maternity colonies have been located near the project site and the habitat conditions on some tracts appear to be suitable for this species. Federally-listed mussels that may be present near the proposed area include the fanshell, pink mucket pearly mussel, and fat pocketbook. Federally-listed mussel species that have occurred historically near the proposed area include the purple cat's paw pearly mussel, tubercled-blossom pearly mussel, ring pink, and white wartyback pearly mussel.

The copperbelly watersnake is found in the wetland complex and the buttonbush shrub areas south of John James Audubon State Park in the Scuffletown Unit. This snake was originally proposed for listing as a threatened species, but implementation of the Copperbelly Water Snake Conservation Plan precluded the need to list the species in Kentucky. The plan calls for protection of existing habitat and restoration of the wetlands and wooded corridors that link these important habitats.

Resident game species on the site include white-tailed deer, swamp rabbit, cottontail rabbit, gray squirrel, fox squirrel, mink, muskrat, beaver, fox, and coyote.

D. Fishery Resources

The fishery in the Ohio River is excellent. Big river species such as paddlefish, sturgeon, catfish, carp, buffalo, and gar use the main stems of the Ohio and Green Rivers and the overflow lands. Sloughs and secondary creeks provide seasonal reproductive and nursery habitats when water conditions permit. However, these resources are limited due to the drainage activities on the properties and the seasonal nature of these habitats. Freshwater game species such as crappie, bluegill, and largemouth bass are found in the backwater areas and in creeks and river sloughs when water conditions permit.

E. Socioeconomic and Sociocultural Conditions

The project area lies within the Evansville (Indiana) - Henderson (Kentucky) Metropolitan Area. Henderson County covers a land area of 440 square miles and has a population of approximately 46,000, which ranks 19th in the state (county size). In 1997, Henderson had a per capita personal income of $22,069. This ranked 13th in the state, was 107% of the state average ($20,570), and 87% of the national average ($25,288). The largest industries are durable goods (i.e., metal industries and wood products) and nondurable goods (i.e., rubber and plastics products). The slowest growing segment was retail trade. The number of farms and farm land acreage is decreasing, while the average size of farms is increasing. The primary crops grown include corn, soybeans, and wheat. Livestock production is another principal farming activity.

The area has a rich cultural history and an increasing tourism trade. Based on a formula used by the Kentucky Department of Travel, Henderson had 640,830 visitor days (one person spending three days in the area) in 1999. It is estimated that 256,000 could be outdoor-related visits. Henderson hosts the Biennial Kentucky National Art and Wildlife Exhibit, which is held at the Henderson Fine Arts Center. This is a juried exhibit and features artists from across the United States. The fourth biennial exhibit is scheduled for October 2000.

At the mouth of the Green River, several mooring buoys are anchored onshore and barge fleeting occurs on both sides of the river. A barge fleeting maintenance facility is also present on the downstream side of the Green River mouth. This facility and the fleeting areas are not located within the proposed refuge acquisition boundary. The proposed establishment of Green River National Wildlife Refuge should have no effect on these operations.

Outdoor recreation pursuits such as hunting and fishing are traditional and favored pastimes of local residents and visitors. The Sloughs Wildlife Management Area in Henderson and Union Counties winters up to 30,000 Canada geese and 10,000 ducks annually and provides outstanding public use opportunities. Other state-owned lands in the county include the John James Audubon State Park and the Green River State Forest.

If the proposed lands are acquired for the establishment of Green River National Wildlife Refuge, the cost would be based on the fair market value of the property as determined by an appraisal. The area's establishment as a unit of the National Wildlife Refuge System would cause some changes in land use. The restoration of bottomland hardwood habitat will be a priority management objective and therefore some of the farmlands acquired will be taken out of production. This could adversely affect some tenant farmers if they are unable to find replacement lands. Some of the acquired farmlands will continue to be farmed under a cooperative agreement with the Service. On these lands, the current farmer will be given the first option to continue farming under a cooperative agreement, where 25% of the crops will remain in the fields for wildlife. Currently, there are 185,994 tillable acres in the county. Therefore, the anticipated land use changes on a portion of the 23,000 acres proposed for the refuge are not expected to cause any significant economic or sociocultural impacts to the local community.

F. Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 14 of the Archeological Resources Protection Act require the Service to evaluate the effects of any of its actions on cultural resources (historic, architectural and archeological) that are listed or eligible for listing in the National Register of Historic Places (NRHP). In accordance with these regulations, the Service will request information on the presence of any known cultural resources on the proposed refuge areas from the Kentucky State Historic Preservation Office.

The Service believes that the proposed acquisition of lands will have no adverse effect on any known or yet-to-be identified NRHP-eligible cultural resources. However, in the future, if the Service plans or permits any actions that might affect eligible cultural resources, it will carry out appropriate site identifications, evaluations, and protection measures as specified in the regulations and in Service directives and manuals.

IV. ENVIRONMENTAL CONSEQUENCES

This section analyzes and discusses the potential environmental impacts of the three management alternatives described in Section II.

A. *Alternative 1: No Action*

Under this alternative, no action would be taken to establish the proposed Green River National Wildlife Refuge. The project lands will remain in private ownership and current land uses would continue. Enhancement, restoration, and management of the area's fish and wildlife habitats and natural resource values would be at the discretion of the private landowners. Currently several wildlife habitat improvement programs such as the Wetlands Reserve Program and the Conservation Reserve Program are offered by the Natural Resource Conservation Service in Henderson County; however, landowner participation in the project area has been minimal.

Under the No Action alternative, any significant cultural and historic resources within the proposed area would remain in private ownership and the protection of existing state and federal laws would apply. Such protection is limited, however, and the area's cultural and historic resources would be subject to greater risks of loss during potential land use changes.

Henderson County would receive no payments from the Refuge Revenue Sharing Act under the No Action Alternative and public use would continue to be restricted.

The desired habitat enhancement, restoration, and management objectives cannot be achieved to any degree under this alternative. Specifically, implementation of "No Action" would adversely impact the area's potential for valuable waterfowl and wildlife habitat improvements over the long term.

B. *Alternative 2: Protection and Management of up to 23,000 Acres by the U.S. Fish and Wildlife Service (Preferred Alternative)*

The preferred alternative would establish Green River National Wildlife Refuge on up to 23,000 acres. This would allow the Service to actively manage these lands for a wide variety of fish and wildlife, including migrating and wintering waterfowl, endangered species, shorebirds, and neotropical migratory birds.

The proposed Green River refuge area has been identified many times by the Service as a priority waterfowl habitat restoration site. The project area floods on an annual basis and duck use is excellent during these periods. With strategically installed water control structures, the frequency of significant waterfowl occurrence would not be dependent on floodwaters. Northern pintails, mallards, and black ducks would benefit from the abundance of food sources such as planted crops, forest mast foods, smartweed, and a variety of invertebrate species. Wood duck breeding habitat would be secured and enhanced by a nest box program and proper forest management. Securing the future of Cypress Slough would benefit habitats for a variety of waterfowl and migratory species throughout the year. Diving ducks such as ring-necked ducks, canvasbacks, and redheads would benefit from increased water management activities. All of the above species will benefit from the additional food resources available through these habitat improvements and proper management.

Habitat loss and fragmentation are issues of high importance for non-game land birds. Securing and restoring large bottomland hardwood tracts greatly enhances the breeding habitat requirements for priority species such as cerulean and prothonotary warblers. Other priority species that would be positively impacted by the proposed refuge include the worm-eating warbler, whip-poor-will, black and white warbler, wood thrush, Acadian flycatcher, Swainson's warbler, and ruby-throated hummingbird. Habitats such as mudflats and shallow field flooding will also be enhanced for migratory shorebirds and wading birds such as snipe, great blue heron, green heron, and common and great egrets.

Federally listed species such as the bald eagle and Indiana bat will benefit from reforestation projects and habitat protection. Three listed mussel species may benefit from improved water quality and decreased sedimentation as a result of forested riparian corridors and vegetated filter strips. The copperbelly watersnake will benefit from protection of existing habitat and restoration of wetlands and the wooded corridors that would link these important habitats.

The ridge and swale topography of the Scuffletown Unit offers excellent opportunities to restore the area's historical hydrology, re-establish a high value bottomland hardwood forest, and manage selective farmlands for the benefit of ducks, geese, and other wildlife. It can also be managed to provide seasonal shallow water habitats on both forested and non-forested areas and stabilize habitats for the long term. All of these activities will work to improve the water quality of the rivers downstream from the unit, therefore making a positive effect for the aquatic species near the project lands.

The purpose of the Green River refuge would be to protect, enhance and manage the proposed area for the benefit of both game and non-game species. Traditional fish and wildlife uses, such as hunting and fishing, would be maintained whenever they are compatible with refuge objectives. Currently, hunting and fishing are controlled by landowners and public access is restricted. Establishment of the refuge would offer outstanding opportunities for public use.

The Service does not have a waterfowl refuge, or any other refuge, along this section of the Ohio River. Geographically, the proposed refuge would be strategically located near the State of Kentucky's Sloughs Wildlife Management Area to the west-southwest, and the State of Indiana's Hovey Lake Fish and Wildlife Area across the Ohio River to the southwest. The closest national wildlife refuges are Patoka River in Indiana, 60 miles north, and Crab Orchard in Illinois, approximately 90 miles west.

The project area also has outstanding potential for environmental interpretation and education. Because of its proximity to the cities of Evansville, Owensboro, and Henderson, and U.S. Highway 41, school groups and visitors would have easy access to the refuge.

Excellent conservation partnership opportunities will exist between the Service and John James Audubon State Park, Green River State Forest, and Sloughs Wildlife Management Area. Sharing agency resources for programs such as environmental education, habitat restoration and management, public use, and law enforcement would be a goal.

Green River State Forest is the only state-owned bottomland hardwood forest in Kentucky. The Kentucky Division of Forestry currently owns 703 acres at Green River State Forest and plans to pursue the acquisition of other adjacent lands, with a goal of eventually owning a forest block of 3,000 to 3,500 acres. The Service is in complete support of this effort and will coordinate fully during all phases of the refuge project. Figure 3 shows the present and future potential size of the Green River State Forest.

The primary goals of the Service's Ohio River Valley Ecosystem Team are to protect, restore, and enhance habitats and the essential processes necessary to maintain healthy populations of native flora and fauna. Acquisition and management of the proposed Green River National Wildlife Refuge would contribute to these goals.

A number of resource priorities identified by the team target the restoration and protection of riverine and floodplain-type habitats. For example, Resource Priority #5 targets the protection and restoration of wetland, riverine and riparian

habitats in the Ohio River watershed for the protection and enhancement of migratory waterbirds and other wetland-dependent species of concern. Acquisition and management of the proposed refuge area will contribute to this priority by enabling the restoration of a significant area of floodplain and riparian habitat on the mainstem of the Ohio River and at the mouth of the Green River. Restoration of floodplain forests would provide habitat for migratory wildlife and a number of neotropical migrants, in addition to other species of concern. The management program would provide water management capability on both forested and non-forested habitats. These areas would be managed for a variety of birds, including waterfowl, shorebirds and other colonial waterbirds.

The team also identified the conservation of migratory landbirds and other bird species of concern as a priority in the Ohio River Valley ecosystem. One strategy to address the priority is to protect, restore, and enhance habitats important to the identified species of concern. The restoration of large tracts of forested wetlands is identified in the Interior Low Plateau Bird Conservation Plan as a priority habitat for restoration.

Another priority of the Ecosystem Team is the conservation of native fishes, with emphasis on interjurisdictional fish and other fish species of concern. The Fish Subgroup identified both the mainstem Ohio River and Green River as areas in which to focus the group's efforts. In big rivers such as the Ohio River, fish populations depend on the floodplain areas for food production, feeding, spawning and rearing of young. The proposed acquisition and subsequent management would restore large areas of floodplain forest that would flood annually and provide significant resources for the area's fishery.

The U.S. Army Corps of Engineers, Louisville District, has proposed to repair the existing stone revetment bank and fill in two adjacent scour holes along a section of the Ohio River in the Horseshoe Bend Unit. This work is necessary as past water events have overtopped the existing bank and significant scour has occurred on the landward side of the protected shore. If the repairs are not made, a new channel could be created across Horseshoe Bend. Cooperative efforts between the Corps, the Service, and the Natural Resources Conservation Service would incorporate the planting of vegetated cover strips (i.e., bottomland hardwoods) in conjunction with the revetment and repair of the scour holes to reduce future flood/scour damage and stabilize this segment of the Ohio River bank.

Based on the nature of the proposal, the location of the site, and the current land uses, the preferred alternative would not have any significant effects on the quality of the human environment, including public health and safety. Further, because the purpose of the proposal is to restore, enhance, manage, and protect a more natural habitat on the proposed acquisition area, the proposal is not expected

to have any significant adverse effects on the area's wetlands and floodplains, pursuant to Executive Orders 11990 and 11988.

Additionally, implementation of the preferred alternative will not involve any highly uncertain, unique, unknown, or controversial effects on the human environment. The proposed action will not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration. No cumulatively significant negative impacts on the environment are anticipated.

In addition, the proposal will not significantly affect any unique characteristic of the geographic area, such as historical or cultural resources, wild and scenic rivers, or ecologically critical areas. Nor will the proposal significantly affect any site listed in or eligible for listing in the National Register of Historic Places, nor will it cause the loss or destruction of significant scientific, cultural, or historic resources. In addition, the area's cultural resources would be protected under the regulations of the National Historic Preservation Act of 1966, as amended, the Archeological Resources Protection Act, and the Advisory Council on Historic Preservation (36 CFR 800). The Kentucky State Historic Preservation Office would be contacted whenever any future management activities have the potential to affect cultural resources sites.

No actions will be taken that would lead to a violation of federal, state, or local laws imposed for the protection of the environment. The Service will coordinate with other state and federal agencies in these efforts. For example, the Service will work with the Federal Highway Administration and state transportation officials in identifying the best corridor for I-69.

All tracts acquired by the Service will be removed from the local real estate tax rolls because federal government agencies are not required to pay state or local taxes. However, the Service makes annual payments to local governments in lieu of real estate taxes, as required by the Refuge Revenue Sharing Act (Public Law 95-469). Payment for acquired land is computed on whichever of the following formulas is greatest: (1) three-fourths of 1% of the fair market value of the lands acquired in fee title; (2) 25% of the net refuge receipts collected; or (3) 75 cents per acre of the lands acquired in fee title within the county.

There is no apparent evidence of the generation, use, storage, or disposal of hazardous materials on the project lands, and the area is not listed on any state or federal databases identifying contaminated properties, including lists identifying underground and above-ground storage tanks.

C. *Alternative 3: Protection and Management of up to 15,630 Acres by the U.S. Fish and Wildlife Service*

Under this alternative, the Service would seek to acquire a property interest in only those lands within the Scuffletown Unit (up to 15,630 acres). The lands within this alternative contain the best waterfowl habitat and management opportunities in the project area, primarily because of the ridge and swale character of the landscape. Numerous depressional areas fill with water during annual flooding, creating outstanding migratory bird habitat.

The Service would manage the lands in Alternative 3 for migratory waterfowl and other wetland-dependent fish and wildlife. The small bottomland hardwood tracts, wet depressional areas, and sloughs would be preserved and enhanced through proper management practices. Some of the croplands would be converted to moist soil management units and others will be reforested with bottomland hardwood species, while other areas would continue to be farmed under cooperative farming agreements.

The lands at the Horsebend Bend and Green River Island Units would remain in private ownership and would be subject to the effects of erosion and other land use changes. Although these lands provide excellent potential for fish and wildlife habitat improvement, any actions taken to make such improvements would be left to the discretion of the private landowners. In addition, public access on these units would be much more limited under this alternative than in the preferred alternative.

In addition, the area's cultural resources would be offered less protection and Henderson County would receive less payments from the Refuge Revenue Sharing Act under the Alternative 3.

This alternative is not recommended because the proposed refuge will never reach its desired management level unless the full range of diverse habitat types is enhanced, restored, protected and managed.

V. INFORMATION ON PREPARERS

This document was prepared by Mike Dawson, Project Development Biologist, USFWS, Jackson, Mississippi, with the assistance of Debbie Mignogno, Fish and Wildlife Biologist, USFWS, Cookeville, Tennessee; Rick Huffines, Refuge Manager, Clarks River NWR, Benton, Kentucky; Don Orr, Wildlife and Habitat Management Biologist, USFWS, Memphis, Tennessee; John Watkins, Project

Development Biologist, USFWS, Atlanta, Georgia; and Mike Morton, Wildlife Biologist/Area Supervisor, KDFWR, Henderson, Kentucky.

VI. SUMMARY OF PROPOSED ACTION

As previously described, the Service proposes to acquire, restore, and manage up to 23,000 acres of wildlife habitat in Henderson County, Kentucky. These lands would be acquired through a combination of fee title purchases from willing sellers and leases, conservation easements, or cooperative agreements from willing landowners. The Service believes these are the minimum interests necessary to restore and enhance the fish and wildlife resources in the proposed refuge area.

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

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

Priority Group I

The first priority for acquisition within this proposal is the Scuffletown Unit. These lands offer the best opportunities for high quality waterfowl habitat enhancement and restoration due to the ridge and swale topography of this area. Some landowners in this area have expressed an interest in entering into leases, easements, or cooperative agreements with the Service.

Priority Group II

The second priority is the Horseshoe Bend Unit. This area includes some marginal farmlands that have good potential for reforestation projects. Fee title acquisition possibilities appear good in this unit.

Priority Group III

The next priority is the Green River Island Unit, which is characterized by productive croplands. This area, along the north side of the Ohio River, offers potential for enhancement of a forested riparian corridor and a cooperative farming program. Acquisition potential is unknown in this unit.

Table 1 and Figure 6 summarize the land protection priorities and proposed methods of acquisition.

Table 1. Protection priorities for the proposed Green River National Wildlife Refuge and recommended methods of acquisition.

Priority Group	No. of Landowners	Approx. Acreage	Type of Acquisition (minimum interest)
I	52	15,630 (2,240 acres are owned by the Ky Div. of Forestry)	Lease, conservation easement, cooperative agreement, or fee title
II	19	5,420	Fee title, lease, conservation easement, or cooperative agreement
III	11	1,650	Conservation easement, cooperative agreement, lease, or fee title

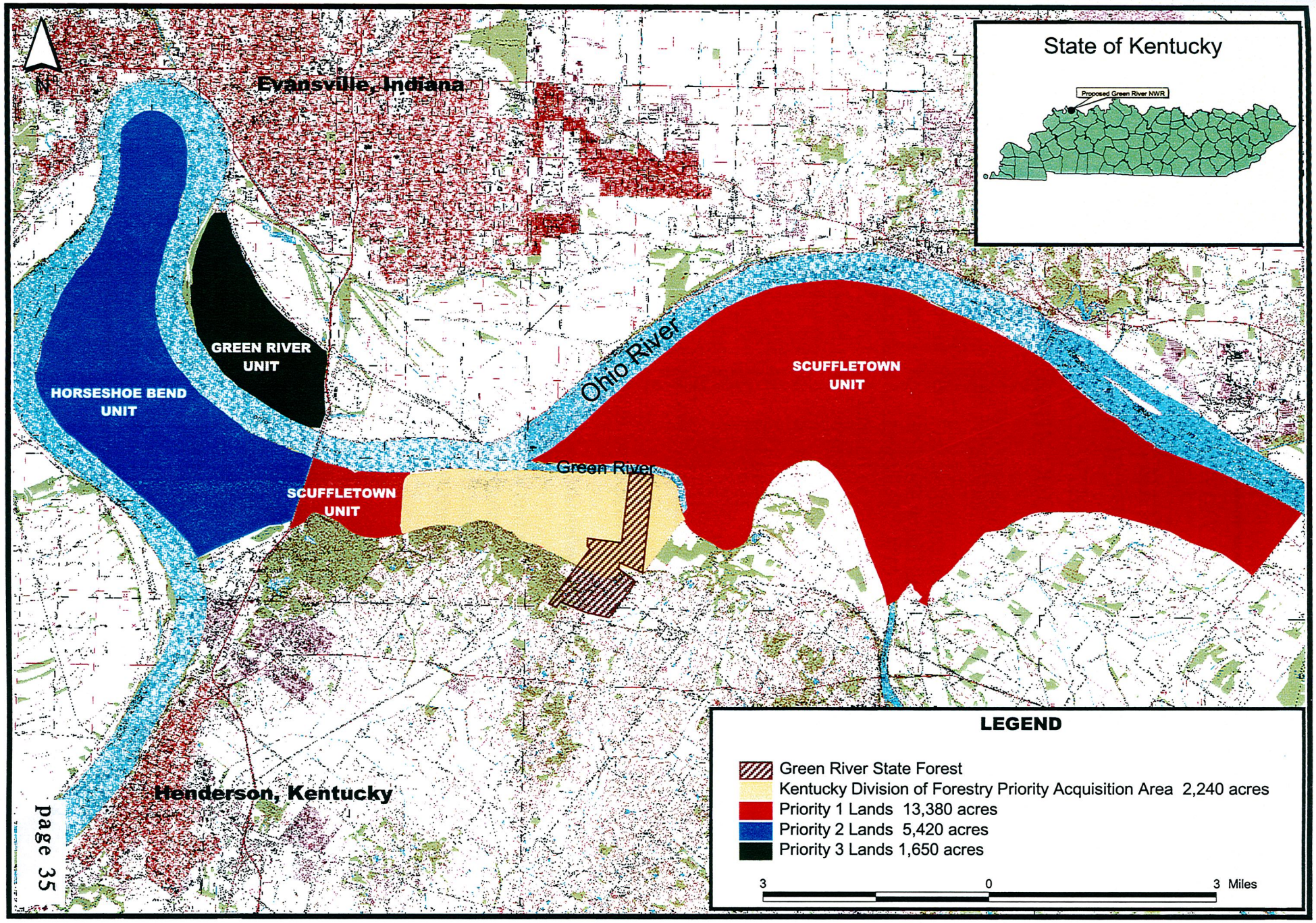

Figure 6. Land acquisition priorities for the proposed establishment of Green River National Wildlife Refuge, Henderson County, Kentucky

APPENDIX A

CONCEPTUAL MANAGEMENT PLAN FOR THE PROPOSED GREEN RIVER NATIONAL WILDLIFE REFUGE, HENDERSON COUNTY, KENTUCKY

INTRODUCTION

This Conceptual Management Plan for the proposed Green River National Wildlife Refuge (NWR) is an overview of how the lands would be managed until a Comprehensive Conservation Plan for the refuge is completed. A Conceptual Management Plan does not detail where facilities would be located or show where public use would be allowed. These details will be included in a Comprehensive Conservation Plan, for which public input will be solicited.

The proposed Green River NWR would encompass up to 23,000 acres in Henderson County, Kentucky.

MANAGEMENT GOALS

The goals of the proposed refuge would be to provide:

- Habitat for migrating and wintering waterfowl;
- Habitat for non-game land birds;
- Habitats for a natural diversity of fish and wildlife;
- Nesting habitat for wood ducks and other locally nesting migratory waterfowl;
- Quality hunting and sportfishing opportunities; and
- Opportunities for compatible environmental education, interpretation and wildlife-oriented recreation.

REFUGE ADMINISTRATION

The proposed refuge unit would be administered and managed by personnel assigned to Green River NWR. Until the Comprehensive Conservation Plan is developed, the proposed refuge would be managed in much the same manner as other national wildlife refuges. The Service's Southeast Regional Office in Atlanta, Georgia, would provide technical assistance on such matters as engineering, public use planning, and migratory bird management.

HABITAT MANAGEMENT

Historically, this area was part of a large bottomland hardwood forest which had extensive oak, hickory, and native pecan components. Some portions of the proposed project site were converted to agricultural uses during the early portions of the century; however, the majority of the area was converted into active agricultural production during the late 1960's and early 1970's. This conversion was accomplished by extensive drainage of wetlands, alteration of interior drainage systems as well as clearing of the bottomland hardwood forest. Currently the area consists of ridge and swale farmland, river-scar oxbows, several sloughs, wet depressional areas, and a small amount of bottomland hardwoods. A few scattered tracts of cut over forest remain, consisting predominantly of silver maple, cottonwood and hackberry. Downstream of the mouth of the Green River, approximately 1,200 acres of bottomland forest remain, consisting predominantly of cypress, willow, hackberry, silver maple, ash, and buttonbush.

The project area floods on an annual basis and duck use is excellent during these periods. With strategically installed water control structures, the frequency of significant waterfowl occurrence could be greatly enhanced and would not be dependent on floodwaters.

The major drainage in the Scuffletown Unit offers excellent opportunities to restore historical hydrology, re-establish a high value bottomland hardwood forest, manage selective farmland for ducks, geese, and other wildlife, provide seasonal shallow water management on both forested and non-forested habitats, and stabilize habitats for the long term. The agricultural interest on the project site have installed a levee system and three water control structures along the Green River which are designed to prevent or reduce the effect of overbank flooding. Many of the interior drainage systems presently on the land offer excellent opportunities to restore historical hydrology and quality wildlife habitats, with minor modifications. A water delivery system would be designed to insure water management capability even in times of drought.

The Service would work with the Kentucky Department of Fish and Wildlife Resources (KDFWR) and the Kentucky Division of Forestry to develop a comprehensive plan for reforestation on the project area. This plan would guide the planting of a variety of woody and herbaceous hydrophytic vegetation based on site specific characteristics. Existing bottomland hardwood tracts would be expanded and travel corridors would be established between the different habitat types.

FISH AND WILDLIFE POPULATION MONITORING

Periodic surveys would be conducted on the refuge to document the occurrence of species, to assess population numbers, and habitat use. Surveys include waterfowl

counts, non-game bird inventories, nesting surveys, endangered species monitoring, habitat monitoring, and breeding bird surveys. Banding and marking of wildlife may also be conducted.

Educational institutions, other governmental agencies, and private groups may be allowed to conduct surveys or research on the refuge.

PUBLIC USE OPPORTUNITIES AND MANAGEMENT

The National Wildlife Refuge System Improvement Act of 1997 emphasizes the importance of providing wildlife-dependent recreational opportunities on national wildlife refuges as long as they are compatible with the goals of the refuge. Public use opportunities would likely include both consumptive (hunting and fishing) and non-consumptive uses (wildlife observation and photography, and environmental education and interpretation).

The following public use regulations, common to many national wildlife refuges, would be adopted to achieve the management goals for the refuge:

Public entry would usually be permitted year round in those areas shown in a refuge leaflet and marked by appropriate signs.

Use of the refuge for any activity would generally be limited to daylight hours only. No camping or overnight parking would be permitted.

Possessing or discharging firearms would be prohibited except during established hunting seasons in areas open to hunting.

Collecting any plant or animal would be prohibited unless otherwise specified.

No person would be allowed to search for, disturb, or remove from the refuge any cultural artifact or other historical artifact.

Directing the rays of any artificial light for the purpose of spotting, locating, or taking any animal would be prohibited unless it is in connection with an approved activity (i.e., raccoon hunting).

Entering or remaining on the refuge while under the influence of alcohol or other drugs would be prohibited.

Fires would generally not be permitted except for agricultural and forestry management practices.

Dogs and other pets would have to be kept under control at all times except when specifically allowed.

Visitor Access

Some areas may be closed to visitors at certain times of the year to protect sensitive wildlife and their habitat (e.g., a heron rookery). Signs and leaflets would clearly indicate the open and closed areas of the refuge. The needs of physically challenged persons would be considered and included during access planning for any refuge activity or facility.

Hunting

Recreational hunting of resident game and many migratory birds would be permitted within the framework of State and federal regulations and licensing requirements. Seasons, areas and types of hunting would be determined by safety, management needs, wildlife populations, size of area, location and public need. Refuge-specific hunting regulations would be coordinated in annual meetings with the KDFWR.

Certain areas within the refuge may be closed to provide undisturbed areas for wildlife. Other areas may be closed to hunting to permit safe, non-consumptive visitor use during the hunting season.

Hunting from permanent tree stands and hunting with the aid of bait would be prohibited. The use of dogs to hunt white-tailed deer would be prohibited. Waterfowl hunting from permanent blinds would be prohibited.

Fishing

Fishing would be permitted in many cases within the framework of State regulations and licensing requirements. Boats would be permitted and motor size/use restrictions in certain refuge-controlled areas may be implemented if necessary to protect important habitat and wildlife resources. Air-thrust boats would be prohibited.

Wildlife Observation and Photography

Wildlife observation and photography would be encouraged. To provide opportunities for wildlife observation, facilities that might be developed include wildlife observation platforms and nature trails. The development of these facilities depend upon the availability of funds.

Environmental Interpretation and Education

Environmental education and interpretive programs would be designed to enhance the visitor's understanding of natural resource management and ecological concepts. The refuge could serve as an important "outdoor classroom" for the area's local schools. Teacher workshops may be offered to enhance on-going environmental education programs.

Law Enforcement

Enforcement of state and federal laws on a national wildlife refuge is important to safeguard the refuge's natural and cultural resources as well as protect and manage visitors. Refuge officers would work closely with other law enforcement agencies and complement their efforts.

FACILITIES MANAGEMENT

Boundaries of any lands acquired would be posted with national wildlife refuge signs at regular intervals. Signs and barriers may be used to protect sensitive wildlife habitats to reduce disturbance to wildlife or to assure public health and safety.

MISCELLANEOUS

Cultural Resource Management

The Service would inventory the archaeological and historic sites on the proposed refuge lands and assess their eligibility for listing on the National Register of Historic Places. Management would be coordinated with the Kentucky State Historic Preservation Office and other pertinent federal and state agencies.

Fire Management

It would be a refuge policy to use fire when it is the most appropriate management tool for reaching habitat objectives. Wildfires, however, would be aggressively suppressed unless such natural fires are a part of an approved fire management plan. Protection and safety of people and property would be top priority within the fire management program.

The refuge would have a staff trained in fire management and an array of equipment for fire suppression. To supplement these capabilities, cooperative agreements with state agencies and county or township fire departments are used.

Pest Management

It is Service policy to control those weeds and other plants listed as noxious by the state. This control would be directed at keeping noxious weeds and plants from spreading to adjacent private lands. In addition, other noxious plants and some animals may have to be removed in order to accomplish refuge goals.

APPENDIX B

INTERIM
COMPATIBILITY DETERMINATION

This Interim Compatibility Determination describes the wildlife-dependent recreational activities proposed on lands to be acquired as part of the Green River National Wildlife Refuge and determines whether these activities are compatible with the purposes for which the refuge was established. Under the National Wildlife Refuge System Improvement Act of 1997, the National Wildlife Refuge System Administration Act of 1966, and the Refuge Recreation Act of 1962, the Service may not permit public recreational activities on a national wildlife refuge unless the activities are first determined to be compatible with the purposes of the refuge. This Interim Compatibility Determination is intended to bridge the gap between acquisition of refuge lands and completion of a Comprehensive Conservation Plan (CCP).

All lands of the National Wildlife Refuge System will be managed in accordance with an approved CCP that will guide management decisions and set forth strategies for achieving refuge purposes. The CCP will be consistent with sound resource management principles, practices, and legal mandates, including Service compatibility standards and other Service policies, guidelines, and planning documents. One of the major objectives of a CCP is to provide a basis for determining the compatibility of secondary uses on refuge lands. A CCP will be completed as soon as possible after the land is acquired by the Service.

Description of Use: (1) Wildlife observation/photography; (2) recreational fishing of freshwater fish (largemouth bass, crappie, catfish, bream, etc.) in accordance with State of Kentucky regulations; (3) recreational hunting of migratory birds and resident game in accordance with State of Kentucky regulations; and (4) wildlife-oriented environmental education activities such as canoe trips, nature camps, boardwalks, nature trails, etc.

Station Name: Green River National Wildlife Refuge.

Date Established:

Establishing and Acquisition Authorities: Migratory Bird Conservation Act.

Purposes for which the Refuge would be Established:

Refuge Objectives: The management objectives of the proposed Green River NWR are to provide (1) habitat for migrating and wintering waterfowl, (2) habitat for non-game

land birds, (3) habitats for a natural diversity of fish and wildlife, (4) nesting habitat for wood ducks and other locally nesting migratory waterfowl, (5) quality hunting and sportfishing opportunities, and (6) opportunities for environmental education, interpretation, and wildlife-oriented recreation.

Mission of the National Wildlife Refuge System: 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 (National Wildlife Refuge System Improvement Act of 1997).

Goals of the National Wildlife Refuge System: (1) To preserve, restore, and enhance in their natural ecosystems (when practicable) all species of animals and plants that are endangered or threatened with becoming endangered; (2) to perpetuate the migratory bird resource; (3) to preserve a natural diversity and abundance of fauna and flora on refuge lands; (4) to provide an understanding and appreciation of fish and wildlife ecology and man's role in his environment; and (5) to provide refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife to the extent these activities are compatible with the purposes for which the refuge was established.

Other Applicable Laws, Regulations and Policy:
National Wildlife Refuge System Improvement Act of 1997
National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee)
Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4)
Title 50 of the Code of Federal Regulations, Subchapters B and C)
The Refuge Manual
The Service Manual
Endangered Species Act of 1973 (16 U.S.C. 1531-1543)
Migratory Bird Conservation Act of 1929 (16 U.S.C. 715-715d)
Migratory Bird Hunting and Conservation Stamp Act (I 6 U. S.C. 718-718h)
Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)
National Environmental Policy Act of 1969 (P.L. 91-190,42 U.S.C. 4321-4347)
Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d)

Anticipated Biological Impacts of the Use: Wildlife-dependent public use is generally encouraged on national wildlife refuges as long as it is compatible with the purposes for which the refuge was established. Public use opportunities are varied and may include both consumptive and non-consumptive uses.

Because the main purpose for establishing national wildlife refuges is the conservation of wildlife and their habitats, surveys are conducted to collect data regarding wildlife populations and habitat trends. This information forms the basis for habitat management

decisions. Wise management of fish and wildlife habitats, fish and wildlife populations and public use requires current and accurate information about the resources on and adjacent to the refuge. Detailed biological and public use information is not presently available for the proposed Green River NWR.

This interim compatibility determination relies on best estimate of current public use levels determined by this author in consultation with knowledge personnel of the Kentucky Department of Fish and Wildlife Resources (KDFWR). During the Comprehensive Conservation Planning process, the Service would gather public data, conduct surveys to estimate wildlife populations, and fully assess public use impacts on the resources.

Following is a general description of the type and estimated level of wildlife-dependent recreational activities that are proposed on the Green River National Wildlife Refuge and a discussion of whether these uses would be compatible with the purposes of the refuge:

Wildlife Observation/Photography

Nonconsumptive uses such as birdwatching and nature photography are minimal at this time due lack of knowledge of this area and no public access. Accurate quantitative estimates of these types of uses are not available. The vast majority of visitors to the area have been associated with hunting or fishing activity.

The area's habitat potential for wetland-dependent wildlife species is outstanding. Wintering bald eagles are annual visitors and the region has a long tradition of waterfowl use. Once the proposed refuge unit is established and the public and conservation groups become aware of its excellent wildlife observation opportunities, an increase in nonconsumptive wildlife-dependent visits is anticipated.

Wildlife observation/photography activities might result in some disturbance to wildlife, especially if visitors venture (either accidentally or purposely) too close to a bird rookery or a raptor nest. This disturbance, when properly managed, is expected to be minimal and to have an insignificant effect on refuge resources, including the fish and wildlife and their habitats and wetland values. Therefore, the anticipated levels of wildlife observation/photography activities are considered to be compatible with the purposes for which the refuge unit would be established.

Fishing

The proposed refuge includes frontage on the Ohio and Green Rivers. Fisheries resources in the Ohio River are excellent. Big river species such as: paddle fish, sturgeon, catfish, carp, buffalo and gar utilize the main stems of the Ohio and Green Rivers and the overflow

lands. Sloughs and secondary creeks provide seasonal reproductive and nursery habitat when water conditions permit. However, these resources are limited due to drainage activities on the properties and the seasonal nature of these habitats. Freshwater game species such as: crappie, bluegill and bass are found in backwater areas, creeks, and river sloughs, when water conditions permit.

Fishing is a common form of public use on the proposed refuge. Fishing for largemouth bass, bream, crappie, and catfish is excellent and extremely popular with local fishermen. Sportfishing in this region is considered to be a traditional form of wildlife-dependent recreation.

Properly regulated recreational fishing on designated areas should not have any adverse impacts on either the fisheries resource, wildlife resource, or other natural resources of the refuge unit. There may be some limited disturbance to certain species of wildlife; however, this should be short-lived, relatively minor and is not expected to negatively impact the wetland values of the refuge unit. Problems associated with littering and illegal take of fish (undersized fish, over bag limit) would be controlled through effective law enforcement. Some sensitive areas of the unit may have limited access and use if disturbance becomes a limiting problem.

Sportfishing is very popular in the area. Allowing the public to fish on the refuge unit would result in a positive public opinion and would help build support for the Service and its natural resource conservation agenda. It would also be allowed and managed to assure wise use of a renewable resource.

The projected level of sportfishing is considered to be compatible with the purposes for which the proposed refuge would be established.

Hunting

When flooded, the depressional areas offer excellent waterfowl hunting. Dove hunting is popular and several sunflower fields are planted annually. Rabbit and quail hunting takes place infrequently due to the lack of suitable habitat on surrounding lands. With proper management, the proposed Green River NWR would contain a diversity of habitat types and a variety of wildlife species. The bottomland hardwoods, moist soil units, and cleared lands would provide ideal habitat for resident game such as white-tailed deer, rabbits, quail, and squirrels. In addition, migratory species such as waterfowl, dove, woodcock, and snipe would utilize this area on a seasonal basis.

Sport hunting provides recreational opportunities and can be used to assist in the management of certain game species. Carefully managed hunting maintains populations at a level compatible with the environment and permits the use of valuable renewable resources. There may be some limited disturbance to non-target species of wildlife and

some trampling of vegetation, however, this should be short-lived, relatively minor and is not expected to negatively impact the habitat on the refuge. Problems associated with littering and violations of game laws would be controlled through effective law enforcement. Some areas of the refuge may be closed to hunting as a sanctuary.

The projected level of hunting is considered to be compatible with the purposes for which the refuge would be established.

National Environmental Policy Act (NEPA) Compliance: Allowing the projected levels of managed hunting, fishing and wildlife observation and photography activities evaluated in this Interim Compatibility Determination would have negligible impacts on refuge resources. Permitting these uses should not be controversial. Therefore, this action is categorically excluded from NEPA (516 DM6 Appendix I B(5)). During the Comprehensive Conservation Planning process, the Service would evaluate the long-term consequences of continued public use through the preparation of a NEPA document.

In assessing the potential impacts of proposed refuge uses, all available tools were utilized. A site-specific document preliminary project proposal: Proposed Establishment of Green River NWR Preliminary Project Proposal, site-specific personal communications (Service and KDFWR biologists), and general references are considered to be sufficient to make this Interim Compatibility Determination.

Determination: These uses are compatible _X_. These uses are not compatible___.

Based on the available information, it has been determined that the expected level of public sportfishing, hunting, and wildlife observation/photography activities that would occur on designated areas within the Green River NWR acquisition boundary is compatible with the purposes for which the refuge unit would be established.

There has been substantial historical use of this wetland area for hunting, fishing and other wildlife-dependent recreational activities. Based on available information, there is no indication of adverse biological impacts associated with these activities. Allowing well managed wildlife observation/photography, fishing, and hunting is consistent with refuge objectives and follows current Service policy.

This Interim Compatibility Determination is based on a very limited amount of public use and biological information. Much more information is needed for a detailed analysis of compatibility. During the Comprehensive Conservation Planning process, which would be completed with appropriate public input, the Service would be able to gather additional public use and biological data necessary for a thorough determination of compatibility. Adjustments to the public use program may be made at that time.

There are a number of situations where refuge closures or restrictions are warranted. Examples of these situations include, but are not limited to, protection of endangered species (flora or fauna), protection of colonial bird rookeries, establishment of sanctuary areas for waterfowl, restriction of hunting to selected days of the week, establishment of quota systems to provide for a high quality hunting experience, conflicts with other refuge management programs, or lack of adequate funds to administer the programs.

Stipulations Necessary to Ensure Compatibility: During this interim period, wildlife observation/photography, hunting, and fishing would be permitted in accordance with State of Kentucky regulations and licensing requirements, with the following exceptions:

- The refuge would be open for public use during daylight hours only.
- Air thrust boats would be prohibited.
- Slat traps and nets would be prohibited unless approved for commercial fishing.
- Hunting from permanent tree stands and blinds would be prohibited.
- Firearms/bows would be prohibited except during hunting seasons.
- Baiting or hunting with the aid of bait would be prohibited.
- No camping would be allowed.
- Some Canada goose seasons may be modified to better protect certain populations.

When the refuge's Comprehensive Conservation Plan is completed, additional refuge-specific regulations may be implemented.

Justification: The Service's current policy is to expand and enhance opportunities for high quality hunting and fishing on national wildlife refuges.

Hunting and fishing are considered to be compatible with the purposes of the proposed refuge unit and meets one of the unit's objectives to provide for compatible wildlife-dependent recreation. Allowing hunting and fishing follows current Service policy to expand and enhance opportunities for high quality hunting and fishing on refuges. Allowing fishing also helps to maintain and build support for the Service and other wildlife conservation efforts.

Nonconsumptive, wildlife-dependent uses such as wildlife observation/photography are compatible with the refuge unit's purpose and meets one of the unit's objectives to provide for compatible wildlife-dependent recreation. Allowing these uses follows

current Service policy to provide for compatible wildlife-dependent recreation. Allowing these non-consumptive recreational opportunities helps to maintain and build public support for the Service and its fish and wildlife conservation efforts.

Project Leader: _____ 6/8/01
(Signature/Date)

Refuge Supervisor: Richard P Ingram 6/8/01
(Signature/Date)

Acting **Regional Chief, National Wildlife Refuge System, Southeast Region:** Thomas F. Fulbrath 6/8/01
(Signature/Date)

APPENDIX C

INTERIM
RECREATION ACT FUNDING ANALYSIS

Station Name: Green River National Wildlife Refuge

Date Established:

Purpose (s) for which the Refuge was Established:

Recreational Use(s) Evaluated for the proposed Green River National Wildlife Refuge:
(1) Recreational hunting of resident game and migratory birds (waterfowl, woodcock, snipe, mourning doves, gallinules) in accordance with federal and State of Kentucky regulations; (2) recreational fishing of freshwater fish species (largemouth bass, bream, catfish, crappie, etc.) in accordance with State of Kentucky regulations; and (3) wildlife observation/photography.

Funding required to administer and manage the recreational use(s):
Minimal funding in the amount of $100,000 would be made available to implement initial protection, hunt implementation, data collection, and nonconsumptive 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 use(s).

Project Leader: _____ 6/8/01
(Signature/Date)

Refuge Supervisor: Richard P. Ingram 6/8/01
(Signature/Date)

Acting **Regional Chief, National Wildlife Refuge System, Southeast Region:** _____ 6/8/01
(Signature/Date)

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