

# Appendix H: Compatibility Determinations

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## Introduction

Compatibility determinations are documents written, signed, and dated by the refuge manager and the regional chief of refuges that signify whether proposed or existing uses of the National Fish and Wildlife Refuge (NFWR, refuge) are compatible with its establishing purposes and the mission of the National Wildlife Refuge System (NWRS, Refuge System). This appendix provides copies of the compatibility determinations for Big Muddy NFWR.

Before undertaking a compatibility review of a use, the refuge manager must first determine that the use is appropriate. A compatible use is any proposed or existing wildlife-dependent recreational use or other use of a refuge by the public or entity other than the U.S. Fish and Wildlife Service (FWS, Service) that, based on sound professional judgment, will not materially interfere with or detract from fulfilling the mission of the Refuge System or the purposes of the refuge. The final policy and regulations required by the National Wildlife Refuge System Improvement Act of 1997 provide guidance for determining compatibility.

If a proposed use is not appropriate, the use will not be allowed, and a compatibility determination will not be prepared.

A compatibility determination is required for activities on a refuge by the public or entity other than the Service including:

- all refuge recreational and educational programs;
- construction or expansion of recreational and educational facilities such as boardwalks and boat ramps;
- management activities performed by private parties in return for a market commodity, such as cooperative farming to provide food for wildlife; and
- granting or modifying rights-of-way through refuges for pipelines, roads, or electrical transmission lines.

Activities when a compatible determination is NOT required include:

- refuge management activities such as prescribed burning, managing water levels, and controlling invasive species;
- routine scientific monitoring, studies, surveys, and censuses;
- conducting historic preservation;

- law enforcement activities; and
- maintaining refuge facilities, structures, or improvements.

Although a refuge use may be both appropriate and compatible, the refuge manager retains the authority to not allow the use or modify the use.

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## COMPATIBILITY DETERMINATION

**Use:** Cooperative Farming (planting and harvesting crops or cutting and baling hay by a third party)

**Refuge Name:** Big Muddy National Fish and Wildlife Refuge

**Establishing and Acquisition Authorities:**

Fish and Wildlife Act of 1956

Consolidated Farm and Rural Development Act (7 U.S.C. 2002) - FMHA fee title transfer property

**Refuge Purposes:** The primary purpose of Big Muddy NFWR is for “the development, advancement, management, conservation, and protection of fish and wildlife resources...” (16 U.S.C. 742f(a)(4)). It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, and provide for compatible public use.

**National Wildlife Refuge System Mission:** The Mission 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.

**Description of Use:** Cooperative farming is planting and harvesting of crops (cropping) or cutting and baling of hay (haying) done by a third party on land that is managed by the Service. This type of activity is usually done on a short term basis (five years or less) to control the invasion of noxious weeds, to prepare an optimum seed bed for the establishment of native species, to keep an area open while plans are developed and funds obtained, or to honor the land use clauses of a purchase agreement.

Cropping and haying are done under the terms and conditions of a Cooperative Farming Agreement or Special Use Permit issued by the Refuge Manager. The terms of the agreement or permit insure that all current Service and Refuge restrictions are followed.

Cropping involves disking to prepare a seedbed, or application of herbicides to prepare the site for seeding and reduce competition from weeds. Any herbicides used must be approved by the Service and applied according to all label restrictions. Permitted cooperative farmers will be allowed to use Genetically Modified Crops (GMO Crops), specifically Glyphosate-tolerant corn and soybeans, on Refuge farming units, consistent with current Regional Policy. The harvest is shared (usually 2/3 farmer: 1/3 refuge). A portion of the refuge share may be left in the field to benefit wildlife. If the refuge share is harvested it is sold and the proceeds sent to the Refuge Revenue Sharing Fund.

Haying involves mowing the grass field, windrowing the grass, and baling it. Haying is timed (no activities during May 15-June 15) to reduce the destruction of nests made by ground nesting birds. The hay is shared (usually 2/3 farmer: 1/3 refuge). The farmer pays a fair market value for the refuge share of the hay.

Currently, the following cooperative farming activities are taking place on the Refuge:

**Overton Bottoms North Unit:** Haying has been permitted on about 85 acres of cool season grasses at the upland site known as the Loesing tract, west of Overton, Missouri. The haying will reduce woody

plant invasion, reduce invasion of weed species, and keep the site open until funds are available to convert the site to native species.

**Cora Island Unit:** One farmer has a cooperative farming agreement to plant crops (corn and soybeans) on up to 800 acres at the Cora Island Unit of the refuge north of St. Louis, in St. Charles County, Missouri. The cropping will be done on a short-term basis to control noxious weeds, especially Johnson grass, until plans are completed and funding available to convert the sites to native species.

**Availability of Resources:** Resources are available to administer these uses. These activities require the development of a Special Use Permit or Cooperative Farming Permit and random inspections of the project areas. The time needed to coordinate issuance and oversight of the permit or agreement is relatively minor and within existing Refuge resources.

The cooperative farming of Refuge land will in most cases generate income for the Service. In accordance with Service policy, all income is submitted for deposit in the Refuge Revenue Sharing Account. The primary purpose of cooperative farming on the refuge is not to generate income, but to control the invasion of noxious weeds, to prepare an optimum seed bed for the establishment of native species, to keep an area open while plans are developed, or to honor the land use clauses of a purchase agreement.

**Anticipated Impacts of the Use:** Haying non-native cool season grass species like those at the Loesing tract will keep the site open so that the field can be converted to native species such as big bluestem, Indiangrass, little bluestem, and side-oats grama when plans are completed and funding available. Restricting mowing during nesting season will minimize disturbance to ground nesting birds.

Cooperative farming on the refuge is a continuation of a land use practice that was occurring before the land was added to the refuge system. In the short term, cropping will result in disturbance and displacement of wildlife from heavy equipment. Short-term and long-term benefits will be the control of Johnson grass, an aggressive noxious weed. Additional short-term benefits include the availability of waste grain and/or crops left standing (Refuge share) for wildlife. Other long-term benefits will be favorable site conditions for future establishment of diverse native species and improved habitat structure.

**Public Review and Comment:** Public notice of this proposed determination, including a brief description of the compatibility determination process, the use proposed, information that may be used in completing the evaluation, how to comment, when comments are due, and how people may be informed of the decision was posted on the regional website as well as in public notices in newspapers in the following counties:

Jackson, Ray, Lafayette, Saline, Carroll, Chariton, Howard, Cooper, Monitcau, Boone, Osage, Montgomery, Franklin, St. Louis, and St. Charles.

At least 14 days were allowed for comment. The following comments were received: **None**

Action taken due to comments: **None**

**Determination:** Cropping is compatible only on previously disturbed areas that have unacceptable levels of noxious weeds, chemical residue, or established non-native plant species or ecotypes; or to

honor land use clauses of a purchase agreement. Haying is compatible on established non-native plant species (such as fescue) to "hold" areas as open land until plans and funding are complete to restore native vegetation; to maintain native grassland vigor and diversity when prescribed fire is not an option, or to honor land use clauses of a purchase agreement.

**Stipulations Necessary to Ensure Compatibility:**

- Applicant must obtain a Cooperative Farming or Special Use Permit as appropriate issued by the Refuge Manager.
- Chemical usage is limited to the region's pre-approved list, and use must follow all label restrictions. A report of actual herbicide use and amounts is due at year's end.
- Cooperator will contact Refuge Manager for coordination of matters needing prior approval.
- Cooperator will not make any improvements to drain wet areas.
- Cooperator will cooperate with refuge staff and researchers in any monitoring efforts.
- Hay will be cut after June 15 to avoid disturbance of ground nesting birds.
- All operations limited to dry ground conditions

**Justification:** Haying or planting crops, with stipulations, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the refuge's purposes. This economic use will contribute to the achievement of the refuge purpose by reducing the establishment of noxious and invasive species, and facilitate the conversion to native species of vegetation. Some short term disturbance will occur, but the long term benefits would over-ride them.

Signature:  
Refuge Manager: Thom A. Bill, February 24, 2011  
(Signature and Date)

Concurrence:  
Regional Chief: Rick Schultz 1/19/2011  
(Signature and Date)

**Mandatory 10- or 15-year Reevaluation Date:** 10 years - February 2021

## **COMPATIBILITY DETERMINATION**

**Use:** Gathering Wild Edibles (mushrooms, berries, and nuts) for Personal Use

**Refuge Name:** Big Muddy National Fish and Wildlife Refuge

### **Establishing and Acquisition Authorities:**

Fish and Wildlife Act of 1956 (16 U.S.C. § 742(a)(4)) and (16 U.S.C. § 742(b)(1))

Consolidated Farm and Rural Development Act (7 U.S.C. 2002) – FMHA fee title transfer property

### **Date Established:**

September 9, 1994, [(16 U.S.C. 742f(a)(4)]

“ . . . for the development, advancement, management, conservation and protection of fish and wildlife resources . . . “

### **Refuge Purposes:**

As designated by 16 U.S.C. 742f(a)(4):

The primary purpose of Big Muddy NFWR is for “the development, advancement, management, conservation, and protection of fish and wildlife resources...”. It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, and provide for compatible public use.

### **National Wildlife Refuge System Mission:**

The Mission 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.

### **Description of Use:**

#### **What is the use?**

The use is the gathering of wild edibles (specifically mushrooms, berries and nuts) for personal use. The National Wildlife Refuge System Improvement Act of 1997 did not identify gathering wild edibles as one of the six, priority, wildlife dependent recreational uses to be facilitated in the Refuge System. There is however a long-standing tradition of gathering mushrooms, nuts and berries from private and public land in Missouri and throughout the Midwest.

#### **Where would the use be conducted?**

Gathering of wild edibles, for personal use, would be allowed on all refuge units (existing and future acquisitions) unless specifically closed by the Refuge Manager. Current refuge units include Jackass Bend in Ray and Jackson Counties, Baltimore Bottom in Lafayette County, Cranberry Bend in Saline and Lafayette Counties, Cambridge Bend in Chariton and Saline Counties, Lisbon Bottom in Howard County, Jameson Island in Saline County, Overton Bottom

in Cooper and Moniteau Counties, St. Aubert Island in Osage County, Boone's Crossing in St. Louis County, and Cora Island in St. Charles County.

**When would the use be conducted?**

Refuge units will be open 24 hours per day during any time of the year, unless specifically closed by the Refuge Manager.

**How would the use be conducted?**

Gathering of wild edibles will be authorized and regulated according to provisions in 50 CFR, Subchapter C, Part 33 and consistent with State regulations. Allowable means of access within refuge units include driving motorized vehicles on designated roads, hiking, canoeing, and no-wake motorized boating. Law enforcement patrols and compliance checks by refuge officers will be used to enforce the provisions of 50 CFR, Subchapter C, as applicable.

**Why is the use being proposed?**

Gathering wild edibles for personal use is not a priority public use on National Wildlife Refuge System lands as identified in the Refuge Improvement Act of 1997. However gathering morel mushrooms in the spring is currently our largest public use on the refuge. Gathering wild edibles will be conducted to provide compatible recreational opportunities for visitors to enjoy the resource and to gain understanding and appreciation for fish and wildlife.

**Availability of Resources:**

Resources are available to administer this use. These refuge lands have been open to public use since they were acquired. Thus, the Fish and Wildlife Service has provided parking lots, kiosks and signs. We will provide other facilities as plans are completed and funds are available. We will work with partners, including communities, non-government organizations, and other agencies, to develop a high quality wildlife-dependent recreational program on the refuge. The annual cost of Refuge activities to administer this use is an estimated \$20,000 out of an overall Refuge operating budget of about \$1,124,000. These costs include staff (20 days, \$10,000) and operating expenses (\$10,000) for Refuge law enforcement, visitor services and maintenance of facilities.

**Anticipated Impacts of the Use:**

Allowing the gathering of wild edibles for personal use would pose minimal impacts on the purposes for which Big Muddy NFWR was established. It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, *and provide for compatible public use.*

Access to the refuge would be by motorized vehicle on public roads and parking lots, and on foot beyond the roads and parking lots. Access to popular locations for gathering wild edibles is generally on foot. Damage to habitat by walking is minimal and temporary. There is some temporary disturbance to wildlife due to human activity on the land. One impact to the refuge purpose could be disruption of breeding and rearing activities during spring and early summer, but the expected sporadic and limited use by the public should not create unreasonable impacts. Any unreasonable harassment of wildlife would be grounds for the refuge manager to close the area to these uses or restrict the uses to minimize harm.

Litter is sometimes a problem around public use areas including areas where people congregate. Littering is not limited to this use, however, and refuge staff would be monitoring

refuge roads, parking areas, etc... for litter, and cleaning up those areas regardless of the source of the litter. The added staff time to clean these areas is minimal.

The concern, therefore, is whether or not these disturbances are sufficient to adversely affect the subject purposes for which the refuge was established. Since gathering wild edibles for personal use is limited by access, weather, infestation of insects, and shallow water which limits the use of water craft, the major evaluation criteria will be the frequency of human presence.

Refuge-wide, gathering opportunities are limited to those areas that can be driven to or boated to and require limited walking. Most recreational gathering of wild edibles for personal use on Big Muddy NFWR occurs at Overton Bottoms North and South units within 1000 feet of a gravel road. Access from the Missouri River, by boat for gathering wild edibles does occur, but it is not significant at this time.

We estimate that 1,500 refuge visitors would spend time gathering wild edibles for personal use on the Big Muddy NFWR, which is an average of 4 people per day over the entire refuge. Since most people gather wild edibles on two refuge units that are also used by other refuge users, we consider the potential impact from gathering wild edibles for personal use on the refuge to be negligible.

There would be no cultural or historical resource impacts expected.

One comment received during the public review period opposed allowing mushroom picking because it removed food that otherwise would be available to wildlife. The quantity of mushrooms produced in a given year is closely tied to variations in temperature and moisture. In general, wet years produce more mushrooms and dry years fewer. Refuge lands occur within the Missouri River floodplain where seasonal overbank flooding precludes mushroom growth during high water levels. After flood waters recede, the heavily saturated soil is not conducive to mushroom production. The temperature and moisture regime of central Missouri provides conditions conducive to some mushroom production in most years. The irregular and episodic nature of mushroom production in Missouri means animals that consume mushrooms do so in an opportunistic fashion. There are no species of animals in Missouri known to be dependent on mushrooms as a food source.

Much of the concern regarding mushroom picking originated in the Pacific Northwest where climate and vegetative cover favor mushrooms including a number of rare species associated with old growth forests. There, collection of large quantities of mushrooms for commercial use is common and has resulted in greater research and regulation to promote sustainable harvesting practices and protection of rare species. Commercial gathering of mushrooms is prohibited within the refuge, but the information developed in the Pacific Northwest is helpful in guiding refuge policy on mushroom picking because it pertains to a number of widely distributed edible mushroom species, including several found in Missouri. One important finding based on a number of small scale studies, shows that careful commercial-level mushroom harvesting does not diminish subsequent fruiting (Pilz et al. 2003). This supports the conclusion that the lower harvest levels associated with personal use mushroom picking have little effect on the amount of mushrooms available to wildlife.

Another consideration is the history and duration of human gathering of mushrooms. Archaeological evidence from within the Refuge shows it has been inhabited by humans for more than 12,000 years. Many of the early inhabitants relied heavily on wild plants for food. It

is reasonable to conclude that they harvested mushrooms when available and that permitting individual gathering today for personal use is consistent with the historic conditions of the area.

**Public Review and Comment:**

This compatibility determination was made available for public review as part of the Big Muddy NFWR Environmental Assessment and Draft Comprehensive Conservation Plan from October 1 to November 20, 2013. Comments received and agency responses are included in the final version of the Big Muddy NFWR Comprehensive Conservation Plan.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations Necessary to Ensure Compatibility:**

- All fires are prohibited.

**Justification:**

Gathering wild edibles for personal use is a non-priority recreational use of the Refuge System. This use has been determined compatible at Big Muddy NFWR because gathering will not materially interfere with or detract from refuge purposes. This activity facilitates the public appreciation of nature and the outdoors and provides opportunities to learn about the U.S. Fish and Wildlife Service. It also reinforces and enhances the public's understanding of the natural environment and of the need for fish and wildlife conservation

**Signature:** Refuge Manager /Thomas G Bell/ June 2, 2014  
(Signature and Date)

**Concurrence:** Acting Regional Chief /Tom Worthington/ 6/2/14

**Mandatory 10-year or 15-year Re-Evaluation Date:** 2024

**COMPATIBILITY DETERMINATION**

**Use:** Hunting of Migratory Birds and Resident Game.

**Refuge Name:** Big Muddy National Fish and Wildlife Refuge

**Establishing and Acquisition Authority(ies):**

Refuge - Date Established: September 9, 1994, [(16 U.S.C. 742f(a)(4)]  
.....for the development, advancement, management, conservation and protection of fish and wildlife resources....

**Refuge Purpose(s):**

Refuge - The management goals of the Refuge are to restore portions of the acquired areas to a natural floodplain condition, including bottomland forests, improve and restore wetland values, improve fishery and wildlife resources, and to provide additional public area for fish and wildlife dependent recreation.

**National Wildlife Refuge System Mission:**

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

**Description of Use:**

This Compatibility Determination provides for public hunting on all the current refuge units and future acquisitions up to the approved 60,000 acres under the Final Environmental Impact Statement (FEIS). Allow public hunting for wildlife on all Big Muddy National Fish and Wildlife Refuge lands for migratory birds and resident game as follows.

The Service is opening newly acquired lands to hunting, restricting hunting on certain lands primarily for safety reasons, and looking for opportunities to broaden opportunities for youth hunters and hunters with disabilities.

The Service will open all lands to hunting consistent with Missouri state hunting regulations and seasons on all game species, unless management of the specific area requires a special hunt outside of state seasons and regulations.

State seasons and limits would apply for all Refuge specified species on designated areas of the Refuge.

Those game species are as follows:

- A. Migratory Game Birds: waterfowl (i.e., geese and ducks,), moorhen, coot, rails, woodcock, common snipe, and mourning dove.
- B. Upland Game: pheasant, gray and fox squirrel, cottontail rabbit, and bobwhite quail
- C. Big Game: white-tailed deer and turkey.
- D. Furbearer: Badger, bobcat, gray fox, red fox, coyote, striped skunk, raccoon and opossum.
- E. Other game: Crow, Bullfrog, Green Frog, and Groundhog.

Certain Refuge units and parts of units would be open only to restricted hunts. A restricted hunt is hunt that is restricted to certain hunting methods. These restricted hunts will correspond to the state season but will restrict the number of hunters, and types of weapons used.

These restricted hunts will be primarily be used to provide for hunter safety and the safety of adjacent property owners and users. Other restricted hunts will be used to better manage the game species. New Refuge land acquisition restricted hunts will not be determined under this compatibility determination.

Trapping is not allowed on any portion of the refuge.

Hunting activities proposed to be allowed on specific Refuge units follow:

**Cora Island Unit**

Restricted to Archery Hunting only for whitetail deer. Shotgun will be allowed for other game species following Missouri State regulations and seasons. Firearms firing a single projectile bullet are prohibited. Only exception could be for a managed hunt to help reduce the number of deer if biological surveys indicate such action is warranted. A managed hunt would be coordinated through the Missouri Department of Conservation managed hunt program.

**Boones Crossing Unit**

Deer hunting on Johnson Island parcel restricted to archery method. Other hunting on Johnson Island parcel restricted to shotgun using shot no larger than size BB. On the 130-acre Carter parcel located on the mainland, all hunting is restricted to archery hunting only, no firearms. This restriction is in place to provide for safety of the adjacent users of City of Chesterfield athletic fields, bicycle trails and private land. These areas can be occupied at anytime of the year.

**St. Aubert Island Unit**

Open to all hunting consistent with Missouri State hunting regulations and seasons on all game species.

**Overton Bottoms North and South Units**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species. Restricted to no hunting or access on small 40 acre parcel around private residence.

Future restriction may be put in place to include no hunting on approximately 100 acres around proposed visitor center and refuge office. Managed hunts may be implemented based on biological need and public interest.

**Lisbon Unit**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species.

**Jameson Island Unit**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species.

**Baltimore Bottom Unit**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species.

**Cranberry Bend Unit**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species.

**Jackass Bend Unit**

Open to hunting consistent with Missouri State hunting regulations and seasons on all game species.

Providing access for persons with disabilities and youth to Refuge facilities and compatible wildlife-dependent public uses, including hunting, is a high priority for the Refuge. Providing access to the Refuge by persons with disabilities typically entails granting exemptions to Refuge regulations for the purpose of enabling those persons to engage in compatible activities on the Refuge. The most common type of exemption given will be authorizations of limited duration which allow the use of motorized vehicles on existing roads and trails. Other exemptions could be related to the conduct of the hunt, such as use of certain weapons and accessories. All exemptions granted will comply with the general public safety regulations of the Department of Interior and the specific public safety guidance of the Service Compatibility Policy.

**Availability of Resources:**

The annual costs of Refuge activities to administer the Hunting Program is an estimated \$180,000 out of an overall Refuge operating budget of about \$1,124,000. These costs include staff (190 days, \$78,000) and operating expenses (\$50,000) for Refuge law enforcement and hunter assistance during the hunting season. This estimate also includes Refuge staff activities associated with evaluating resources available for hunting (e.g., biological assessments of target species) as well as preparing for (e.g., special signage and access) and monitoring hunting activities.

The Refuge continues to add to its land base. Any increases in annual costs will depend on the number of acres added to the Refuge and the consistency of hunting regulations, availability of volunteers, and donated funds. Expenses include boundary posting and other signage, parking lot construction, gate installation, brochures, regulatory signs and other hunting specific activities. An increase in law enforcement patrols including vehicle costs and overtime might also be necessary. These additional costs, estimated at \$15,000, would be accrued if officers from other sources are needed to assist with an expanding hunting program.

**Anticipated Impacts of the Use:**

Staff monitors species population and harvest trends with assistance from the Missouri Department of Conservation to ensure that target species can be hunted at the refuge without appreciably adversely affecting populations. These monitoring activities include direct observation, consultation with State and Service species specialists, and review of current species survey information and research. Recent assessments of species hunted in the vicinity of the Refuge indicate that those species are not facing a general decline. For waterfowl, the annual assessments are based upon the distribution, abundance, and flight corridors of migratory birds. Hunting seasons, including dates, bag limits and methods are determined by the Federal Framework, Flyway Council recommendations and the State of Missouri. The State of Missouri manages resident game across broad landscapes and allows harvest of annual surpluses through recreational hunting. Although hunting causes mortality and temporary disturbance to waterfowl and other wildlife, harvesting populations within the carrying capacity of existing habitat insures long-term health and survival of the species.

The Refuge restricts or excludes hunting activities on portions of certain Refuge Units. Relatively small areas of the Refuge are not hunted due to safety concerns. These are areas that contain developed infrastructure such as government housing, shop facilities or similar developed property. Special managed hunts could be used to manage hunting pressure and overall harvest at appropriate levels should future conditions warrant. No managed hunts are in place at this time. Conditions that might precipitate discussion for the need to employ managed hunts include but are not limited to changes in game species populations or distribution, increased participation leading to safety or quality of experience concerns or public requests for additional recreational activity.

The Refuge is open during the hunting season to other priority public uses such as fishing, wildlife observation, wildlife photography, and environmental education and interpretation. In order to safely provide both hunting and non-hunting recreational uses, the Refuge enforces a series of Refuge-specific hunting regulations. Hunting is restricted on certain units or portions of units to provide for public safety. On units that do support hunting, hunters may be restricted to specific types of hunting devices or hunting locations to minimize risk to the public in high public use areas or areas with concentrations of private residences nearby.

Refuge management activities can be accomplished without conflict with hunting activities through the use of administratively closed areas, timing of hunts, and methods of hunt.

**Public Review and Comment:**

The Service solicited public comments for a Draft 2011 Hunting Chapter of the Visitor Services Plan for Big Muddy National Fish and Wildlife Refuge and its supporting draft Environmental Assessment that described the hunting activities in this Compatibility Determination. A 30-day review period began December 12, 2011, and ended January 11, 2012. In addition, the draft Compatibility Determination was out for a 14-day public review beginning December 20, 2011, and ending January 3, 2012. Copies of the documents were posted on the Refuge website and were available upon request. News releases announcing the availability of the documents for review were sent to numerous local media outlets and conservation organizations.

Two written comments were received and addressed in the final plan.

**Determination:**

Use is Not Compatible

Use is Compatible With Following Stipulations

**Stipulations Necessary to Ensure Compatibility:**

1. All applicable State and Federal Regulations will apply.
2. Hunting is allowed on most of the refuge. Restrictions apply only in designated areas.
3. For authorized hunting activities, the refuge is open two hours before legal shooting time to one hour after legal shooting time.
4. Archery and firearms are allowed for hunting on designated areas of the Refuge.
5. Refuge specific authorization is required for all special hunts.
6. All personal property, including boats, must be removed at the end of each day. Exceptions are made for stands, provided they meet all regulations for marking and attachment to trees.
7. No motorized vehicles are allowed within the hunting units except at designated parking areas and roads or by Special Use Permit.

**Justification:**

**Justification:**

Suitable habitat exists on the Refuge lands to support hunting as proposed. The viability of the game species populations proposed to be hunted will not be negatively affected by hunting according to State season guidelines, bag limits, and regulations.

This use is being permitted because it is a priority public use. It will not diminish the primary purposes for which the Refuge was established. This use will be supported in the Refuge's Comprehensive Conservation Plan. It also meets the mission of the National Wildlife Refuge System by providing renewable resources for the benefit of the American public while conserving viable populations of fish, wildlife and plant resources on these lands.

This use has been determined compatible provided the above stipulations are implemented.

**Signature:**                      **Refuge Manager:** Thomas J. Bell 2/3/12  
(Signature and Date)

**Concurrence:**                      **Regional Chief:** [Signature] 2/2/12  
(Signature and Date)

**Mandatory 15-year Re-evaluation Date:** January 2027

## **COMPATIBILITY DETERMINATION**

**Use:** Recreational Fishing

**Refuge Name:** Big Muddy National Fish and Wildlife Refuge

### **Establishing and Acquisition Authorities:**

Fish and Wildlife Act of 1956 (16 U.S.C. § 742(a)(4)) and (16 U.S.C. § 742(b)(1))

Consolidated Farm and Rural Development Act (7 U.S.C. 2002) – FMHA fee title transfer property

### **Date Established:**

September 9, 1994, [(16 U.S.C. 742f(a)(4)]

“ . . . for the development, advancement, management, conservation and protection of fish and wildlife resources . . . “

### **Refuge Purposes:**

As designated by 16 U.S.C. 742f(a)(4):

The primary purpose of Big Muddy NFWR is for “the development, advancement, management, conservation, and protection of fish and wildlife resources...”. It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, and provide for compatible public use.

### **National Wildlife Refuge System Mission:**

The Mission 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.

### **Description of Use:**

#### **What is the use?**

The use is fishing. The National Wildlife Refuge System Improvement Act of 1997 identified fishing as one of the six, priority, wildlife dependent recreational uses to be facilitated in the Refuge System, and the act encouraged the Service to provide opportunities for these uses

#### **Where would the use be conducted?**

Fishing would be allowed on all refuge units (existing and future acquisitions) with fishable waters unless specifically closed by the Refuge Manager. In addition, fishing on the Missouri River is regulated by the state of Missouri, however, shoreline access to the river would be regulated by the Service. Current refuge units include Jackass Bend in Ray and Jackson Counties, Baltimore Bottom in Lafayette County, Cranberry Bend in Saline and Lafayette Counties, Cambridge Bend in Chariton and Saline Counties, Lisbon Bottom in Howard County, Jameson Island in Saline County, Overton Bottom in Cooper and Moniteau Counties, St.

Aubert's Island in Osage County, Boone's Crossing in St. Louis County, and Cora Island in St. Charles County.

**When would the use be conducted?**

Refuge units will be open 24 hours per day during any time of the year, unless specifically closed by the Refuge Manager.

**How would the use be conducted?**

Fishing will be authorized and regulated according to provisions in 50 CFR, Subchapter C, Part 33 and consistent with State regulations. Allowable means of access within refuge units (including scour holes not connected to the river) include driving motorized vehicles on designated roads, hiking, canoeing, and no-wake motorized boating. Law enforcement patrols and compliance checks by refuge officers will be used to enforce the provisions of 50 CFR, Subchapter C, Parts 26, 27, and 33, as applicable.

**Why is the use being proposed?**

Recreational fishing is a priority public use on National Wildlife Refuge System lands as identified in the Refuge Improvement Act of 1997. Fishing will be conducted to provide compatible recreational opportunities for visitors to enjoy the resource and to gain understanding and appreciation for fish and wildlife.

**Availability of Resources:**

Resources are available to administer this use. These refuge lands have been open to public use since they were acquired. Thus, the Fish and Wildlife Service has provided parking lots, kiosks and signs. We will provide other facilities as plans are completed and funds are available. We will work with partners, including communities, non-government organizations, and other agencies, to develop a high quality wildlife-dependent recreational program on the refuge. The annual cost of Refuge activities to administer this use is an estimated \$40,000 out of an overall Refuge operating budget of about \$1,124,000. These costs include staff (40 days, \$20,000) and operating expenses (\$20,000) for Refuge law enforcement, visitor services and maintenance of facilities.

**Anticipated Impacts of the Use:**

The 1999 *Environmental Impact Statement for the Proposed Expansion of the Big Muddy National Fish and Wildlife Refuge* addresses the impacts of fishing.

Allowing recreational fishing would pose minimal impacts on the purposes for which Big Muddy NFWR was established. It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, and provide for compatible public use.

Access to small lakes and ponds on the refuge would be by motorized vehicle on public roads and parking lots, and on foot beyond the roads and parking lots. Access to popular fishing lakes and ponds is generally on established trails covered in mulch, gravel, or vegetation to stabilize the soil and minimize soil erosion or damage to vegetation. Damage to habitat by walking is minimal and temporary. There is some temporary disturbance to wildlife due to human activity on the land. One impact to the refuge purpose could be disruption of breeding and rearing activities during spring and early summer, but the expected sporadic and limited use by the public should not create unreasonable impacts. Any unreasonable harassment of wildlife would

be grounds for the refuge manager to close the area to these uses or restrict the uses to minimize harm.

Litter is also a problem around public use areas including areas where fishermen congregate. Fishing can also potentially cause death or serious injury to migratory birds by using lead sinkers that can become ingested, or by discarding hooks, monofilament line, or other litter that can trap or entangle birds and other wildlife. Littering is not limited to fisherman, however, and refuge staff would be monitoring refuge roads, parking areas, etc... for litter, and cleaning up those areas regardless of if fishing were allowed. The added staff time to clean these areas is minimal.

The concern, therefore, is whether or not these disturbances are sufficient to adversely affect the subject purposes for which the refuge was established. Since fishing is limited by access, weather, infestation of insects, and shallow water which limits the use of water craft, the major evaluation criteria will be the frequency of human presence.

Refuge-wide, fishing opportunities are limited to those areas that can be driven to and require no walk or a very short walk. Most recreational fishing on Big Muddy NFWR occurs at Overton Bottoms North at the I-70 Scour hole and the Diana Scour. Bank fishing on the Missouri River rarely occurs because of the absence of river access points on the refuge. Other refuge units have no lakes or ponds that would draw fisherman to the refuge solely for fishing.

We estimate that 1,800 fisherman would use Big Muddy NFWR for fishing, which is an average of 5 people per day over the entire refuge. Since most people fish at two lakes on one unit that were located near public parking areas that were also used by other refuge users, we consider the potential impact from fisherman on the refuge to be negligible.

There would be no cultural or historical resource impacts expected.

**Public Review and Comment:**

This compatibility determination was made available for public review as part of the Big Muddy NFWR Environmental Assessment and Draft Comprehensive Conservation Plan from October 1 to November 20, 2013. Comments received and agency responses are included in the final version of the Big Muddy NFWR Comprehensive Conservation Plan.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations Necessary to Ensure Compatibility:**

- All fires are prohibited.

**Justification:**

Fishing is a priority wildlife-dependent recreational use of the Refuge System.

Fishing has been determined to be a compatible use of Big Muddy NFWR because this use will not materially interfere with or detract from management objectives, refuge purposes, or the Refuge System mission. This activity introduces the public to fishing, wetland ecology, and the mission of U.S. Fish and Wildlife Service; it enhances their understanding of the natural environment and of the need for fish and wildlife conservation.

**Signature:** Refuge Manager /Thomas G Bell/ June 2, 2014  
(Signature and Date)

**Concurrence:** Acting Regional Chief /Tom Worthington/ 6/2/14  
(Signature and Date)

**Mandatory 10-year or 15-year Re-Evaluation Date:** 2029

## **COMPATIBILITY DETERMINATION**

**Use:** Wildlife Observation, Wildlife Photography, Environmental Education, and Interpretation

**Refuge Name:** Big Muddy National Fish and Wildlife Refuge

### **Establishing and Acquisition Authorities:**

Fish and Wildlife Act of 1956 (16 U.S.C. § 742(a)(4)) and (16 U.S.C. § 742(b)(1))

Consolidated Farm and Rural Development Act (7 U.S.C. 2002) – FMHA fee title transfer property

### **Date Established:**

September 9, 1994, [(16 U.S.C. 742f(a)(4)]

“ . . . for the development, advancement, management, conservation and protection of fish and wildlife resources . . . “

### **Refuge Purposes:**

As designated by 16 U.S.C. 742f(a)(4):

The primary purpose of Big Muddy NFWR is for “the development, advancement, management, conservation, and protection of fish and wildlife resources...”. It is intended to fill a public need to preserve and restore natural river floodplain, manage fish and wildlife habitats, and provide for compatible public use.

### **National Wildlife Refuge System Mission:**

The Mission 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.

### **Description of Use:**

#### **What is the use?**

Allow wildlife observation, wildlife photography, environmental education, and interpretation by the general public at refuge units.

#### **Where would the use be conducted?**

All refuge units (existing and future acquisitions) will be open to the public for these four uses unless specifically closed by the Refuge Manager. Current refuge units include Jackass Bend in Ray and Jackson Counties, Baltimore Bottom in Lafayette County, Cranberry Bend in Saline and Lafayette Counties, Cambridge Bend in Chariton and Saline Counties, Lisbon Bottom in Howard County, Jameson Island in Saline County, Overton Bottom in Cooper and Moniteau Counties, St. Aubert’s Island in Osage County, Boone’s Crossing in St. Louis County, and Cora Island in St. Charles County.

**When would the use be conducted?**

Refuge units will be open 24 hours per day during any time of the year, unless specifically closed by the Refuge Manager.

**How would the use be conducted?**

Allowable means of access within refuge units (including scour holes not connected to the river) include driving motorized vehicles on designated roads, hiking, canoeing, and no-wake motorized boating.

Prohibited acts that apply to the refuge under 50 CFR 26 & 27 include:

- Motorized vehicles and bicycles off of public roads or parking lots
- Camping
- Collecting artifacts or objects of antiquity
- Harassment of wildlife
- Excessive damage to vegetation
- Dogs off of a leash
- Horseback riding

State regulations apply to the navigable waters of the refuge and therefore are not subject to compatibility determination. Sandbars below ordinary high water line are not part of the refuge and therefore are not subject to compatibility determination.

**Why is the use being proposed?**

Wildlife observation, wildlife photography, environmental education, and interpretation are priority public uses on National Wildlife Refuge System lands as identified in the Refuge Improvement Act of 1997. The refuge lands have been open to public use since they were acquired.

Entry on all or portions of individual areas may be temporarily suspended by posting upon occasions of unusual or critical conditions affecting land, water, vegetation, wildlife populations, or public safety.

Facilities needed to support these uses include parking areas, kiosks with informational and interpretive signs, and in some cases, trails. Facilities currently exist on most units. Additional facilities will be provided as units are added a funding allows.

**Availability of Resources:**

Resources are available to administer these uses. These refuge lands have been open to public use since they were acquired. Thus, the Fish and Wildlife Service has provided parking lots, kiosks and signs. We will provide other facilities as plans are completed and funds are available. We will work with partners, including communities, non-government organizations, and other agencies, to develop a high quality wildlife-dependent recreational program on the refuge. The annual costs of Refuge activities to administer these uses is an estimated \$150,000 out of an overall Refuge operating budget of about \$1,124,000. These costs include staff (190 days, \$78,000) and operating expenses (\$50,000) for Refuge law enforcement, visitor services and maintenance of facilities. This estimate also includes Refuge staff time associated with evaluating new public use opportunities.

Some areas of units are accessible only from the Missouri River. We will continue to strive to provide land-based access to refuge units through acquisition of easements and/or fee title properties from willing sellers.

**Anticipated Impacts of the Use:**

The 1999 *Environmental Impact Statement for the Proposed Expansion of the Big Muddy National Fish and Wildlife Refuge* addresses the impacts of wildlife observation, wildlife photography, environmental education, and interpretation.

The four uses pose minimal impacts on the purposes for which Big Muddy NFWR was established. Access for observation, photography and interpretation is typically by individuals or small groups on foot. Access for environmental education will be scout groups, school classes, etc. that will be in larger groups on foot. Damage to habitat by walking is minimal and temporary. There is some temporary disturbance to wildlife due to human activity on the land. One impact to the refuge purpose could be disruption of breeding and rearing activities during spring and early summer, but the expected sporadic and limited use by the public should not create unreasonable impacts. Any unreasonable harassment of wildlife would be grounds for the refuge manager to close the area to these uses or restrict the uses to minimize harm.

Access by motorized vehicles is limited to public roads and parking lots. Hiking trails would have established vegetative cover or chat. Parking lots and hiking trails have minimal impacts because of their small size and generally have gravel or vegetation on them to stabilize the soil.

**Public Review and Comment:**

This compatibility determination was made available for public review as part of the Big Muddy NFWR Environmental Assessment and Draft Comprehensive Conservation Plan from October 1 to November 20, 2013. Comments received and agency responses are included in the final version of the Big Muddy NFWR Comprehensive Conservation Plan.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations Necessary to Ensure Compatibility:**

- No photo or viewing blinds may be left over night.
- All fires are prohibited.

**Justification:**

This use has been determined compatible, because wildlife viewing and photography will not materially interfere with or detract from refuge purposes. The level of use for wildlife observation and photography is moderate. The associated disturbance to wildlife is temporary and minor. Wildlife observation and photography are priority public uses and inculcate visitors with an appreciation for wildlife and an enthusiasm for nature and the outdoors. These uses also help fulfill the mission of the Refuge System.

**Signature:** Refuge Manager /Thomas G Bell/ June 2, 2014  
(Signature and Date)

**Concurrence:** Acting Regional Chief /Tom Worthington/ 6/2/14  
(Signature and Date)

**Mandatory 10-year or 15-year Re-Evaluation Date:** 2029