

**BIG MUDDY
NATIONAL FISH & WILDLIFE REFUGE**

**HUNTING CHAPTER of
VISITOR SERVICES PLAN
December 2011**

Prepared By: _____ **Date:** _____
Thomas G. Bell, Refuge Manager

Concurred By: _____ **Date:** _____
Matt Sprenger, Refuge Supervisor, Area 3

Approved By: _____ **Date:** _____
Richard D. Schultz, Regional Chief, NWR System

NATIONAL WILDLIFE REFUGE SYSTEM MISSION STATEMENT

“To administer a national network of land and water for the conservation management, and, where appropriate, restoration of the fish and wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

BIG MUDDY NATIONAL FISH & WILDLIFE REFUGE MISSION STATEMENT

*The Big Muddy National Fish and Wildlife Refuge was created in September of 1994 ". . . for the development, advancement, management, conservation and protection of fish and wildlife resources"
[16 U.S.C. § 742f(a)(4)].*

TABLE OF CONTENTS

I. INTRODUCTION1

II. CONFORMANCE WITH STATUTORY AUTHORITY3
Relationship to Other Plans and Documents

III. STATEMENT OF OBJECTIVES4

IV. ASSESSMENT5

V. DESCRIPTION OF HUNTING PROGRAM6
Current Opportunities
New Opportunities for 2011 and Beyond
Consultation and Coordination with the State of Missouri.
Methods of Control and Enforcement
Funding and Staffing Requirements

VI. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT OBJECTIVES12
Biological Conflicts
Public Use Conflicts
Administrative Conflicts

VII. CONDUCT OF THE HUNT14
Hunting Regulations
Special Hunts
Anticipated Public Reaction to the Hunt
Hunter Application and Registration
Hunter Selection
Announcing and Publicizing Hunts
Hunting Orientation and Safety
Entry and Access Procedures
Hunter Requirements

VIII. REFERENCES.....18

APPENDIX A. Comparison of Current and New Opportunities19

APPENDIX B. Big Muddy CFR (2009 and 2011)23

APPENDIX C. Unit Maps.....25

I. INTRODUCTION

This Hunting Chapter will be a part of the future Visitor Services Plan for Big Muddy National Fish & Wildlife Refuge (Refuge). The Hunting Chapter formulates the general concept for hunting opportunities on Refuge managed or acquired lands.

Description of Refuge: Like pearls on a string, the Refuge is divided into individual units along the Missouri River between Kansas City and St. Louis, Mo. These pearls of habitat benefit floodplain-dependent fish and wildlife species. Side channels, backwaters, scour holes, sandbars, bottomland forests, wet prairies and grasslands, seasonal and permanent wetlands provide ideal homes for wildlife. Among the diverse wildlife on the Refuge are migrating waterfowl, shorebirds, wading birds, songbirds and raptors that rely on the Refuge to provide a safe haven during their travels. Other animals that depend on the Missouri River floodplain habitat are aquatic turtles and numerous species of native fish including crappie and flathead catfish. The wetlands created by dispersed floodwaters also offer prime habitat for many amphibians such as spring peepers, green frogs and narrow mouth salamanders.

This abundance of wildlife provides the visitor with an enriching experience whether they are there to observe wildlife or hunt or fish for trophy deer, turkey or catfish. But, these recreational opportunities were not always as available to the public as they are today.

History of Establishment: Concerns to establish a refuge on the Lower Missouri River were sparked by “past impacts of agriculture, flood control, and navigation” (U.S. Fish and Wildlife Service, 1989). These alterations to the Missouri River greatly reduced the existing floodplain habitat for fish and wildlife. The U.S. Fish and Wildlife Service (Service) was well aware of this concern for at least two decades, but it was not until the Great Flood of 1993 that any action was taken to create a refuge on the Lower Missouri River. The flood induced some private landowners to sell their land to the federal government under the *Public Law 103-75, an Act Making Emergency Supplemental Appropriations for the Relief from Major, Widespread Flooding in the Midwest of 1993*, dated August 12, 1993. Several months later on February 12, 1994, Congress enacted *Public Law 103-211*, “authorizing expenditure of funds provided by *Public Law 103-75* for land acquisition from willing sellers.”

The combination of willing sellers due in part to the flood of 1993, adept planning, and funds made available to the Service in 1994, resulted in the authorization of the Big Muddy National Fish & Wildlife Refuge on September 9, 1994, “... for the development, advancement, management, conservation, and protection of fish and wildlife resources ...” [16 U.S.C. § 742f(a)(4)]. As of July 2011 the Refuge consists of 11 units of land totaling more than 17,000 acres and plans to attain up to 60,000 acres of floodplain and associated land located between St. Louis and Kansas City (Figure 1).

Goals: The Refuge strives to find ways to restore floodplain habitat to the Missouri River. This can be as simple as allowing native vegetation to return on its own and as complex as constructing side channels to the river.

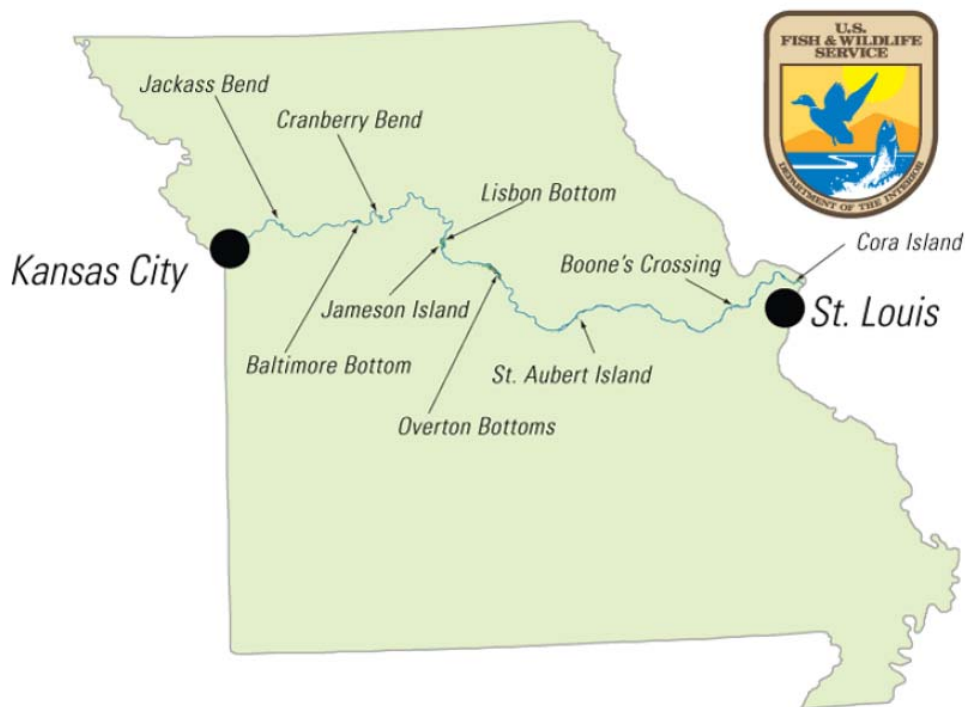
The Refuge is challenged with restoring habitat to a few thousand acres that historically encompassed millions of acres. We work closely with our many partners and neighbors to minimize effects on private property while providing benefits to floodplain dependent fish and wildlife. We cooperate with private, State and Federal land management agencies to maximize shared opportunities to improve and understand floodplain habitats.

Principle government partners include the Missouri Department of Conservation (MDC), the United States Army Corps of Engineers' (Corps) Missouri River Bank Stabilization and Navigation (BSNP) Project Fish and Wildlife Mitigation Project authorized by the Water Resources Development Act of 1986, the Missouri Department of Natural Resources - State Parks Division (DNR-SP), United States Geological Survey(USGS) and the United States Department of Agriculture - Natural Resources Conservation Service(NRCS).

In addition to government agencies, the Refuge works closely with many non – government agencies. A partial list includes the Friends of Big Muddy, Missouri River Relief, Audubon of Missouri, The Nature Conservancy, The Conservation Fund, The National Wild Turkey Federation, Ducks Unlimited, Missouri Master Naturalist Program, and Missouri River Communities Network.

Big Muddy NFWR staff is dedicated to providing the public opportunities to enjoy wildlife oriented activities on the Refuge. Visitor facilities include information kiosks (22 at last count and increasing) trails, river access, and wildlife viewing opportunities. In addition to these visitor amenities, we participate in workshops, special events such as fishing clinics and other outreach activities to increase public understanding of the Refuge and its diverse management activities.

Figure 1. Big Muddy National Fish & Wildlife Refuge Units.



II. CONFORMANCE WITH STATUTORY AUTHORITY

The Refuge staff developed this Hunting Plan to guide hunting on the Refuge in a manner that allows us to fulfill the purposes for which the Refuge was established as well as provide wildlife-dependent recreation.

Guidance for authorizing public uses on National Wildlife Refuges is provided in the National Wildlife Refuge System Improvement Act (Improvement Act) of 1997 (USFWS 1997). The Improvement Act states, “compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System...through which the American public can develop an appreciation for fish and wildlife.” The Improvement Act recognizes that wildlife-dependent recreational uses, including hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation, when determined to be compatible, are a legitimate and appropriate use of the Refuge System lands. The Improvement Act states that these specific six uses should receive priority consideration in Refuge planning and management. Other uses not listed as priority public uses may be allowed if they are determined to be appropriate and compatible with the purposes for which the Refuge was established.

According to the Improvement Act, when a wildlife-dependent recreational use is determined to be a compatible use and is not inconsistent with public safety, that activity should be facilitated. The term “compatible use” is defined as a wildlife-dependent recreational use or any other use of a Refuge unit that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the Refuge. The Service’s Final Compatibility Policy (USFWS 2000) pursuant to the Improvement Act delegates the responsibility of determining compatibility to the Refuge Manager with concurrence by the Regional Office Supervisor.

The Refuge was established by Congress in 1994. In general, its purposes are to (1) restore natural floodplain conditions, including bottomland forest (2) Improve and restore wetland values (3) Improve fishery and wildlife resources (4) Provide additional public area for fish and wildlife-dependent recreation.

The Refuge has been congressionally authorized to purchase up to 60,000 acres of land from willing sellers between the mouth of the Kansas River and the mouth of the Missouri River. The acquisition area represents over 800,000 acres of Missouri River Floodplain and major tributary floodplains between the Kansas City, Missouri and St. Louis, Missouri.

Relationship to other Plans and Documents

Shortly after the Refuge was established, the Service prepared a hunting and fishing plan in 1996. The plan included an Environmental Assessment that evaluated the possibilities and effects of hunting and fishing on all lands within the Refuge’s congressionally authorized acquisition boundaries.

In 2004, lists of regulations specific to hunting were developed to be posted on Refuge kiosks and information boards. Changes to the Refuge’s hunting program were published in the Federal Register and the Code of Federal Regulations (50 CFR 32.44) as needed.

In response to the Improvement Act, the Refuge has been required to develop a Comprehensive Conservation Plan (CCP). The Refuge CCP process has begun but is not completed (July, 2011). While the CCP provides overall management direction, more detailed “step-down” plans were to be developed to refine Refuge programs and operations.

This Hunting Plan is a step-down plan from the Visitor Services Plan and the CCP. Writing the hunting plan prior to the CCP and Visitor Services Plan was required due to the need to address hunting as a viable management tool for the Refuge and priority public use that should continue. Hunting was determined to be a compatible use with the mission of the Refuge through an Environmental Impact Statement (EIS) completed in 1999. These uses, which include big game, upland game, and migratory bird hunting, are presented in this Hunting Plan. A list and a detailed description of the hunting opportunities proposed for the Refuge are provided in this document.

Upon completion and adoption of the Hunting Plan, the Service will publish a Proposed Rule in the Federal Register that will update the hunting program on the Refuge. Following the comment period on the Proposed Rule, a determination will be made whether to implement Refuge hunting as outlined in this Hunting Plan. Subsequently, a Final Rule will be published outlining hunting on the Refuge. An internally developed annual Hunting Proposal will be used to document how this Hunting Plan guides the implementation of the Refuge’s hunting programs.

III. STATEMENT OF OBJECTIVES

To fulfill the purpose for which the Refuge was established the Service envisions that it will make significant contributions by:

- Establishing multiple units within a corridor of floodplain and hillside forest, wetlands, and native prairie along the Missouri River, and the lower reaches of some of its tributaries, between river mile 367.5, near Kansas City, MO and the confluence of the Missouri and Mississippi rivers near St. Louis, MO.
- Managing diverse and abundant native fish and wildlife populations that use healthy and productive native plant communities of the Missouri River and its environs.
- Providing the public with the opportunity to revitalize their spirits through high quality wildlife-dependent recreation such as hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation.
- Supporting a community-based effort where citizens, businesses, private conservation organizations, and local, state, and federal agencies combine their efforts to restore and protect the Missouri River and its watershed for future generations.

A well managed Hunting Plan directly supports the Refuge’s overall purpose and goals. Although the Refuge has allowed hunting under Missouri state regulations since its establishment, this Hunting Plan will be modeled specifically for the Refuge and incorporated into the Refuge’s Comprehensive Conservation Plan (CCP).

The Refuge's hunting program objective is as follows: Provide safe, ethical and high quality hunting experiences for the public on the Refuge. The following strategies were identified as options to help meet that objective:

- Through revision of the Refuge Hunting Plan, examine opportunities to utilize hunting for deer on the Refuge to assist in maintaining deer densities between 15-28 deer per square mile (depending on the Refuge unit). Coordinate efforts with the MDC and cities adjacent to the Refuge.
- Expand accessible hunting opportunities to include turkey and deer in designated areas on the Refuge.
- Enhance public understanding of Refuge hunting opportunities by increasing the quality of maps, signs and wording within brochures and on the Refuge Web site.
- Increase the visibility of Refuge law enforcement and hunter adherence to federal and state regulations to ensure safe, high quality, ethical hunting.

IV. ASSESSMENT

White-tailed deer, waterfowl, water birds, aquatic mammals, passerine, and mammalian predators are monitored on the Refuge and surrounding areas by the Service and conservation partners. Fish, amphibians, reptiles and insects also are monitored, but not as frequently.

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. The annual Waterfowl Population Status Report (USFWS 2010) includes the most current breeding population and production information available for waterfowl in North America and is a result of cooperative efforts by the Service, the Canadian Wildlife Service, various state and provincial conservation agencies and private conservation organizations.

The American woodcock (*Scolopax minor*) is a popular game bird throughout eastern North America. The management objective of the Service is to increase populations of woodcock to levels consistent with the demands of consumptive and non-consumptive users (USFWS 1990). The woodcock population in the Central Region returned to the 10-year average after a decline in 2008 (Cooper and Parker 2009).

The mourning dove (*Zenaida macroura*) is one of the most abundant species in urban and rural areas of North America. The annual harvest is estimated to be between 5% and 10% of the population (Otis et al. 2008). According to the Breeding Bird Survey there was a significant increase in doves heard and seen in the Central Management Unit (which includes Missouri) over a 10-year time period (1999-2008).

Missouri's wild turkey (*Meleagris gallopavo*) population has continued to expand since the first successful reintroduction in the 1960's. Turkey hunting is allowed in the state of Missouri by permit only in both the spring and fall seasons. The estimated turkey population at the beginning of the year in 2010 was 500,000 (Missouri Department of Conservation). In the spring of 2010 38,328 birds were harvested and 8,124 birds were harvested in the fall for a total reported harvest of 46,452 turkeys in 2010 (Missouri Department of Conservation). Hunters pursuing turkey on

the Refuge are required to obtain an applicable permit from the state; the Refuge issues no special permit.

White-tailed deer (*Odocoileus virginianus*) are the most important big game mammal in Missouri. Deer hunting regulations in Missouri have changed a great deal since 1944, when 7,757 hunters harvested 519 bucks during a two-day buck-only season. Today there are approximately 500,000 deer hunters in Missouri harvesting up to 300,000 deer annually. Hunters harvested 275,702 deer in Missouri in 2010. The Conservation Department's deer management goal is to maintain a statewide deer population level that provides adequate opportunities for hunters and for people who enjoy watching deer, but low enough to minimize crop/landscape damage and deer-vehicle accidents (MDC). In 2010 deer densities continued to increase throughout much of the state. Deer densities are highest in urban counties, including St. Louis County and St. Charles County, which encompass respectively the Boone's Crossing Unit and the Cora Island Unit of the Refuge.

Hunting was prevalent on the private lands that eventually became the Refuge before the Service purchased those lands. Suitable habitat exists on the Refuge lands to support hunting as proposed. The viability of the game species populations proposed to be hunted is not expected to be negatively affected by hunting according to State season guidelines. In fact, some hunted species populations (e.g., white-tailed deer, resident Canada goose) have risen substantially and are considered locally overabundant.

V. DESCRIPTION OF HUNTING PROGRAM

All units of the Refuge support huntable populations of migratory birds, big game and upland game. All units of the Refuge are open to the public for wildlife oriented recreational use as defined in the National Wildlife Refuge Improvement Act of 1997. A portion of the Overton Bottoms Unit includes two parcels of approximately 10 and 20 acres that are closed to hunting due to their proximity to Refuge buildings and equipment.

Where allowed, hunting on the Refuge follows the season dates and bag limits outlined in Missouri's state regulations. This consistency with the state helps reduce confusion when hunters participate in hunting activities on Service lands.

Current Opportunities

Generally, the Refuge is open to hunting under statewide regulations for migratory birds, upland game, furbearer/ small game and big game (listed on following page).

The current hunting program generally allows specific hunting activities on designated units or portions of units. This enables the Refuge to balance species needs and other recreational uses with hunting activities.

Hunting management practices and procedures on Refuge units are as follows:

- The Refuge is opening newly acquired lands to hunting, while restricting hunting on certain lands primarily for safety reasons, and looking for ways to broaden opportunities for youth hunters and hunters with disabilities.
- The Refuge will open acquired lands to hunting consistent with Missouri State hunting regulations and seasons on all game species, unless specific area conditions require more restrictive regulations for safety or quality of experience reasons. The most likely causes of such a variation include size of the area, proximity to large population centers, adjoining land use and similar factors.
- 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: moorhen, coot, rails, woodcock, common snipe, mourning dove and waterfowl (i.e., geese and ducks).
- B. Upland Game: pheasant, gray squirrel, fox squirrel, and bobwhite quail
- C. Big Game: white-tailed deer and turkey.
- D. Furbearer/ small game: cottontail rabbit, badger, bobcat, opossum, striped skunk, raccoon, gray fox, red fox and coyote.
- E. Other game: American crow, bullfrog, green frog, feral hog and groundhog.

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

These restricted hunts will be primarily used to improve safety and ensure a high quality recreational experience for hunters and adjacent property owners and users. Additional restricted hunts may be used to better manage game species. New Refuge land acquisition restricted hunts will not be determined under this Hunting Plan.

Along with Refuge specific regulations state of Missouri hunting laws apply to all Refuge units.

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

Cora Island Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to hunting during state spring and fall seasons.
- Whitetail Deer:
 - Open to Archery method only
- Furbearer/ Small Game:

- Open to shotgun and archery only, following Missouri State regulations and seasons.
- Other Game:
 - Open to shotgun and archery only, following Missouri State regulations and seasons.
- Upland Game:
 - Open to shotgun and archery only, following Missouri State regulations and seasons.

Boone's Crossing Unit

The 130-acre parcel adjacent to the Chesterfield Athletic Complex is restricted to **archery hunting only, no firearms**. This restriction was put in place to provide safety for the adjacent users of the athletic fields. These athletic fields are used throughout the year.

The other portion of this unit, **Johnson Island**, is open to the following:

- Migratory Game Birds:
 - Open to Missouri state regulations and seasons.
- Turkey:
 - Open to hunting during State spring and fall seasons.
- Whitetail Deer:
 - Open to archery method only.
- Furbearer/ Small Game:
 - Open to shotgun and archery only.
- Other Game:
 - Open to shotgun and archery only.
- Upland Game:
 - Open to shotgun and archery only.

St. Aubert Island Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:
 - Open to Missouri State regulations and seasons.

Overton Bottoms Units

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:
 - Open to Missouri State regulations and seasons.

Restricted to no hunting or access on closed areas around government buildings.

Future restriction may be put in place to include no hunting on approximately 100 acres around proposed visitor center and Refuge office.

Lisbon Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:
 - Open to Missouri State regulations and seasons.

Jameson Island Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.

- Upland Game:
 - Open to Missouri State regulations and seasons.

Baltimore Bottom Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:
 - Open to Missouri State regulations and seasons.

Cranberry Bend Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:
 - Open to Missouri State regulations and seasons.

Jackass Bend Unit

- Migratory Game Birds:
 - Open to Missouri State regulations and seasons.
- Turkey:
 - Open to Missouri State regulations and seasons.
- Whitetail Deer:
 - Open to Missouri State regulations and seasons.
- Furbearer/ Small Game:
 - Open to Missouri State regulations and seasons.
- Other Game:
 - Open to Missouri State regulations and seasons.
- Upland Game:

- Open to Missouri State regulations and seasons.

New Opportunities for 2011 and Beyond

In this Hunting Plan the Service is proposing new public hunting opportunities. These opportunities are comprised of opening newly acquired lands to hunting, opening hunting for additional species and adding types of hunts to broaden opportunities for youth hunters, hunters with disabilities and other underserved hunting populations. The Hunting Plan will coincide with state seasons and regulations as appropriate considering the Service's responsibilities. Recently acquired lands include Cora Island Unit, Cambridge Bend Unit and the Overton Bottoms South Unit. All of the newly acquired lands proposed to be opened for hunting have been hunted prior to Service ownership.

Refuge General

Open to hunting according to Missouri state seasons and limits for all Refuge specified species on designated areas of the Refuge.

A high priority for the Refuge is to provide compatible wildlife-dependent public uses such as hunting. Providing access for youth and persons with disabilities to Refuge programs and facilities is another high priority. Accommodating individuals 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.

Consultation and Coordination with the State

Previous to this 2011 Hunting Plan, the Refuge's hunting program has been developed in coordination with MDC regional and area managers. This coordination was accomplished through formal and informal meetings as well as the Refuge soliciting MDC comments on written hunting plans and supporting documents.

The Refuge's consultation with MDC regional and area managers for the development of this Hunting Plan dates back to 1996. The Refuge initiated a series of meetings to develop a vision for Refuge programs via the Comprehensive Conservation Plan process in 2009. Formal meetings specific to the Refuge' hunting programs will continue through 2011. The Refuge will continue consulting and coordinating with the state regarding Refuge hunting activities on an informal basis.

The Refuge has moved forward with developing this Hunting Plan based upon earlier formal coordination with the MDC as well as the intervening informal discussions. The Refuge is soliciting comments regarding this Hunting Plan from the MDC, as well as resource managers from local units of government.

Following the adoption of this Hunting Plan, consultation and coordination with MDC and others regarding its annual implementation will be a combination of formal and informal activities based upon the nature of the issues to be addressed.

Methods of Control and Enforcement

The enforcement of Refuge and state hunting regulations, trespass and other public use violations normally associated with management of a National Wildlife Refuge is the responsibility of commissioned Refuge Law Enforcement Officers. Refuge Officers cooperate with, and are assisted by state, county and city police officers as well as state conservation officers. The procedures used for obtaining law enforcement assistance are based on the legal jurisdiction where incidents occur. The Refuge regularly meets with the various state, city and county law enforcement agencies to develop agreements and strategies to ensure law enforcement operations are performed as safely and efficiently as possible.

Refuge Visitor Services staff manage the Refuge's outreach program and consequently routinely interact with and assist Refuge users during hunting seasons.

Funding and Staffing Requirements

The annual costs of Refuge activities to attain the Hunting Program objective 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.

VI. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT ACTIVITIES

Biological Conflicts

The Refuge avoids conflict related to biological resources by adopting the "wildlife first" principle explicitly stated in the National Wildlife Refuge Improvement Act of 1997. Staff monitors species population trends to ensure that target species can be hunted on the Refuge without adverse affect on the species. These monitoring activities include direct observation of populations, consultation with State and Service species specialists, and review of current species survey information and research. In addition, the Refuge limits or excludes hunting activities on portions of Refuge Units.

Public Use Conflicts

In an effort to avoid conflicts with non-hunting priority recreational uses, as outlined in the Improvement Act, and for safety, the Refuge enforces a series of Refuge-specific hunting regulations.

Refuge specific regulations have been put in place to provide public safety. At the Boone's Crossing Unit the archery only restriction was implemented due to the small size of the area (130 acres) and the proximity of the adjacent playing fields at the Chesterfield Athletic Complex. Use of these playing fields occurs throughout year. Concern for the safety of people using the athletic fields warranted this restriction.

Restriction to shotgun only firearms at the Boones Crossing Unit (Johnson Island) and Cora Island Unit also provide for public safety as single projectile firearms have the potential to reach heavily used adjacent private property. In addition, use of these two areas by hunters is anticipated to be high due to their close proximity to the St. Louis metropolitan area. The St. Louis metropolitan area is the largest population center in Missouri.

Further hunting restriction on the Refuge provide for visitor and employee safety around government property. These examples include Refuge owned residences, maintenance facilities and equipment.

Temporary hunting restrictions provide protection for such activities as construction, special use activities, and refuge activities. Examples of special use and Refuge activities could include Refuge birding festivals, or similar education, interpretive and outreach activities with large numbers of participants.

Hunting Method Conflicts

Additional public use conflicts could occur between different types of hunters. Many archery deer hunters prefer public hunting opportunities that are restricted to archery only methods. At the Jameson Island Unit a temporary restriction on firearms due to construction on the unit increased the perceived quality of the deer archery hunting (based on casual conversation with several archery hunters). The area has since returned to hunting under Missouri statewide regulations, including firearms deer hunting.

In the future the Refuge may experience opposition to opening areas to managed firearm hunts that had previously been archery hunting only. Species management considerations may provide impetus to add managed firearms hunts to some Refuge units.

Archery method only restrictions may result in increases in the white-tailed deer population to undesirable levels on some Refuge Units. Archery hunters spend more time hunting per capita, yet harvest fewer deer than firearms hunters. Increasing deer harvest may be a desirable Refuge objective on some Units. Archers who have become accustomed to hunting a Refuge Unit restricted to archery methods, may object to proposals to add special managed hunts or to open the Unit to additional methods and seasons such as the Missouri statewide muzzleloader season.

There are alternatives to managed firearms hunts if the Service determines increased deer harvest is desirable. Antlerless only restrictions and requirements to harvest one or more antlerless deer prior to harvesting an antlered deer are strategies that have been employed with varying success elsewhere in Missouri. Both Boone's Crossing Unit and Cora Island Unit are proposed as archery method only for deer hunting in this Hunting Plan. Monitoring deer populations,

communicating with neighbors and consulting with the MDC are key elements of managing the deer herds and public hunting on these two areas and future urban Refuge Units.

The boundaries of all lands managed as part of the Big Muddy National Fish and Wildlife Refuge are posted with standard Refuge boundary signs. Areas administratively closed to hunting are clearly marked with “No Hunting Zone” or “Area Beyond This Sign Closed” signs.

Administrative Conflicts

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. The most potential for hunting to conflict with management activities occurs during shallow water habitat construction projects. Shallow Water Habitat and other construction projects require heavy machinery and laborers to be throughout a Refuge unit. Closing the immediate construction zone to all public entry is standard procedure. Restricting use firearms use on the remainder of the Unit during construction improves safety for contractors, inspectors, workers and equipment.

Partial closure of Jameson Island Unit and restrictions on use of firearms were enacted during construction activity beginning in 2006. The construction ended, closed areas were reopened and firearms restrictions were removed in 2008. News releases were issued announcing the firearms closure and reopening. Signs were posted and removed. Minimal conflict occurred. Several comments were received from archery hunters who wished to maintain the archery hunting only status. Conversely, inquiries were received asking when the area would be reopened to firearms hunting.

VII. CONDUCT OF THE HUNT

Hunting Regulations

Regulations pertaining to all National Wildlife Refuge System Lands

Requirements for hunting on units of the National Wildlife Refuge System are articulated in Title 50 of the Code of Federal Regulations, Chapter 1, Subchapter C, Section 32.2.

The pertinent citations are listed below.

The following provisions shall apply to each person while engaged in public hunting on areas of the National Wildlife Refuge System:

- (a) Each person shall secure and possess the required State license.
- (b) Each person 16 years of age and older shall secure and possess a Migratory Bird Hunting Stamp while hunting migratory waterfowl.
- (c) Each person shall comply with the applicable provisions of Federal law and regulations including this subchapter and the current Federal Migratory Bird Regulations.
- (d) Each person shall comply with the applicable provisions of the laws and regulations of the State wherein any area is located unless further restricted by Federal law or regulation.

(e) Each person shall comply with the terms and conditions authorizing access or use of wildlife refuges, including the terms and conditions under which hunting permits are issued.

(f) Each person must comply with the provisions of any refuge-specific regulations governing hunting on the wildlife refuge area. Regulations, special conditions, and maps of the hunting areas for a particular wildlife refuge are available at that area's headquarters. In addition, refuge-specific hunting regulations for migratory game bird, upland game, and big game hunting appear in §§32.20 through 32.72.

(g) The use of any drug on any arrow for bow hunting on national wildlife refuges is prohibited. Archers may not have arrows employing such drugs in their possession on any national wildlife refuge.

(h) The unauthorized distribution of bait and the hunting over bait is prohibited on wildlife refuge areas. (Baiting is authorized in accordance with State regulations on national wildlife refuges in Alaska).

(i) The use of nails, wire, screws or bolts to attach a stand to a tree, or hunting from a tree into which a metal object has been driven to support a hunter is prohibited on wildlife refuge areas.

(j) The use or possession of alcoholic beverages while hunting is prohibited.

(k) You may possess only approved nontoxic shot while in the field, which we identify in 50 CFR 20.21(j), while on Waterfowl Production Areas, or on certain other areas of the National Wildlife Refuge System as delineated on maps, leaflets and/or signs, available at each refuge headquarters or posted at each refuge, or as stated in refuge-specific regulations. Where we allow turkey and deer hunting, you may use slugs and shot containing lead to hunt these species unless prohibited by refuge-specific regulations and/or State law.

The regulations, as they are published in the Code of Federal Regulations (CFR), are the official notification to the public. Copies of the CFR can be found in libraries and online.

Big Muddy National Wildlife Refuge Specific Regulations

Hunting regulations specific to the Refuge are as follows:

- Hunting is prohibited in areas posted with “No Hunting Zone” or “Area Beyond This Sign Closed” signs.
- Hunting is subject to all applicable state and federal laws.
- Distributing or hunting over bait, including salt or other minerals, is prohibited; this includes whitetail deer and feral hog hunting.
- Target shooting is prohibited.
- You may use and possess only approved non-toxic shot while in the field; this includes turkey hunting.
- Decoys and portable blinds are permitted during the prescribed hunting seasons but must be removed from the area daily.
- Only portable tree stands may be placed or used between September 1 and January 31.
- Unattended stands and blinds must be plainly labeled on durable material with the owner's full name and address **or** their Missouri Conservation Identification number.
- Access is by foot only. All vehicles are restricted to designated roads and parking areas.
- Pets must be leashed except when under control of hunter during appropriate hunting season.
- Any commercial activity requires a special use permit. This includes guiding for fee and filming hunts for later commercial distribution.

A synopsis of Refuge specific regulations are made available to the public in the Refuge's hunting brochure. Copies of the hunting brochure are available at the Refuge Office, entrance kiosks, and on the Refuge Web site.

Special Hunts

Certain Refuge units and parts of units may be restricted to special hunts. A special hunt is an activity focused on discrete groups of hunters to provide them with additional opportunities or methods of hunting through a Refuge sponsored program. Examples of potential groups these hunts are designed to provide opportunity for include youth, disabled and other underserved hunter populations. The goal of special hunts is to provide quality recreational hunting experiences that may be limited or not available for these underserved hunting populations within the structure of general public hunting. All special hunts require Refuge specific authorization and are conducted within the framework of the state seasons and regulations for the species proposed to be hunted.

Youth Deer, Turkey and Waterfowl Hunts

All Refuge units that are open to regular Missouri state hunting seasons are open to youth hunters during the state of Missouri youth hunting seasons. Refuge specific regulations still apply.

Accessible Hunts

The Refuge accommodates hunters with disabilities. A hunter applying for special consideration due to a physical disability must have a verified statement of the disability by a licensed physician or must be participating in a program recognized by the State of Missouri for hunters with disabilities. Hunters with disabilities possessing a MDC issued permit exempting them from particular state regulations based upon their disability will be eligible to apply for Refuge specific authorization to participate in accessible hunting opportunities on the Refuge. In the case of approved applications, Special Use Permits (3-1383) will be issued to eligible hunters. Special Use Permits contain specific conditions and must be signed by both parties before they are valid.

Anticipated Public Reaction to the Hunt

Hunting enjoys broad support within the state of Missouri. Potential user conflicts between hunting and non-hunting visitors are expected to be minimal as there is little overlap between the preferred times and places of use between hunters and other user groups. In certain areas safety concerns and potential conflicts have been addressed by restricting hunting opportunities to specific methods of take (archery only).

Hunter Application and Registration

For general hunting activities, no special application or registration process is required. Should the Refuge implement application or registration procedures, it will use the Office of Management and Budget approved forms.

Hunter Selection

For general hunting activities, there is no special hunter selection process. Hunters who are eligible to hunt under Missouri law are allowed to hunt on the Refuge. Individual requests for special access due to disability have been handled on a case by case basis after consultation with the MDC and the Region 3 Equal Opportunity Program. The standard Service Special Use Permit system has been employed.

Announcing and Publicizing Hunts

Significant changes to this Hunting Plan or the Refuge hunting program will be announced through public notice procedures.

Hunting Orientation and Safety

The Refuge requires no specific orientation or safety training for hunters participating in general hunting activities. The State of Missouri has established hunter education and safety training requirements that have been in effect for many years. Participants in special hunts receive orientation and safety training as part of those programs.

Hunter orientation to Refuge lands and areas open to hunting are provided directly on the Refuge through the use of signs, brochures, flyers, maps and trail guides. Outlets off the Refuge that are a source of information include MDC offices, city parks and recreation offices, city libraries, neighboring hotels, sporting goods stores, chamber of commerce offices, tourism offices and the Internet.

Entry and Access Procedures

There are no special entry or access procedures for hunters using the Refuge. The general hunting public can enter the Refuge either through official trailheads and parking areas or from the Missouri River. Hunters may also access Refuge lands from adjacent private, state, county and city lands.

Hunter Requirements

The Refuge does not impose any special requirements on those wishing to hunt on the Refuge, except for hunters participating in special hunts. Eligibility and other requirements for participating in special hunts are described earlier in the document. Hunters who are eligible to hunt under Missouri law are allowed to hunt on the Refuge.

The Refuge does not require hunters to report on hunting activities or harvest separately from the Migratory Bird Harvest Information Program (HIP) requirement. Should a need for additional information be determined, the Refuge will adhere to Service policies and procedures and comply with the Office of Management and Budget requirements..

Bow and arrow, muzzleloaders and shotguns are allowed for hunting on designated areas of the Refuge. Non-toxic shot must be used to hunt migratory birds, turkey and upland game. Shotgun slugs and muzzleloader ammunition containing lead may be used when hunting deer. Possession of shot other than approved non-toxic shot while hunting is prohibited. Hunting dogs may be used for hunting small game and migratory birds. Dog training not associated with an actual hunt is prohibited.

It is unlawful to hunt from a permanent stand on the Refuge. Attaching a stand or steps to a tree by use of screws, bolts nails or other implements driven into the tree is prohibited. All personal property, other than properly labeled temporary stands, must be removed from the Refuge at the end of each day. This includes boats, decoys and other equipment.

VIII. REFERENCES

- Cooper, T.R., and K. Parker. 2009. American woodcock population status, 2009. U.S. Fish and Wildlife Service, Laurel, Maryland. 15 pp.
- Otis, D.L., Schulz, J.H., Miller, D., Mirarchi, R.E. and Baskett, T.S. 2008. Mourning dove (*Zenaida macroura*), In The birds of North America Online (Poole, A. editor). Cornell Lab of Ornithology.
- Dailey, D. T. (2009). Wild Turkey. *Missouri Wildlife Harvest and Population Status Report*. Missouri Department of Conservation.
- Missouri Department of Conservation. (n.d.). *Deer*. Retrieved June 26, 2010, from MDC online: <http://mdc.mo.gov/hunting-trapping/deer>.
- U.S. Fish and Wildlife Service. (1997, October 9). National Wildlife Refuge System Improvement Act of 1997. *Public Law 105-57*.
- U.S. Fish and Wildlife Service. (2009, July 23). Waterfowl Population Status, 2009.
- U.S. Fish and Wildlife Service. (1999). Final Environmental Impact Statement For Proposed Expansion of the Big Muddy National Fish & Wildlife Refuge.
- U.S. Fish and Wildlife Service. (1989, March 27). Memorandum to Director from Regional Directors, Region 3 and 6.
- U.S. Fish and Wildlife Service. (2000, November 17). Part 603 National Wildlife Refuge System Uses. *Refuge Management* , p. Chapter 2 Compatibility.
- U.S. Fish and Wildlife Service. (1956). Title 16--Conservation Chapter 9--Fish and Wildlife Service. *Fish and Wildlife Act of 1956* , 742f(a)(4).
- U.S. Fish and Wildlife Service. (2009, October 1). Title 50--Wildlife and Fisheries. *Code of Federal Regulations* , VI (Chapter I--United States Fish and Wildlife Service, Department of the Interior) , Part 32_Hunting and Fishing, Subpart B_Refuge-Specific Regulations for Hunting and Fishing, Sec. 32.44 Missouri, pages 397-400. U.S. Government Printing Office via GPO Access.

APPENDIX A – COMPARISON OF CURRENT AND NEW OPPORTUNITIES BY UNIT

Unit	Current Opportunities	Opportunities for 2011 and Beyond
Cora Island Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to hunting during state spring and fall seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Archery method only • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to hunting during state spring and fall seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Archery method only • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery only, following Missouri State regulations and seasons.
Boone's Crossing Unit	<ul style="list-style-type: none"> • Archery hunting only no firearms <u>Johnson Island</u> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to hunting during state spring and fall seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Archery hunting only no firearms <u>Johnson Island</u> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri state regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to hunting during State spring and fall seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to archery method only. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery hunting only. • Other Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery hunting only, following Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to shotgun and archery hunting only.

Unit by unit comparison of current and new hunting opportunities (Continued)

Unit	Current Opportunities	Opportunities for 2011 and Beyond
St. Aubert Island Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.
Overton Bottoms Units	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.
Lisbon Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.

Unit by unit comparison of current and new hunting opportunities (Continued)

Unit	Current Opportunities	Opportunities for 2011
------	-----------------------	------------------------

		and Beyond
Jameson Island Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.
Baltimore Bottom Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.
Cranberry Bend Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.

Unit by unit comparison of current and new hunting opportunities (Continued)

Unit	Current Opportunities	New Opportunities for 2011 and Beyond
Jackass Bend Unit	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. 	<ul style="list-style-type: none"> • Migratory Game Birds: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Turkey: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Whitetail Deer: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Furbearer/ Small Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Other Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons. • Upland Game: <ul style="list-style-type: none"> ○ Open to Missouri State regulations and seasons.

APPENDIX B -- Big Muddy CFR (2009 and 2011)

Sec. 32.44 Missouri: **Big Muddy National Fish and Wildlife Refuge** (as printed in 2010 CFR)

A. Migratory Game Bird Hunting. We allow hunting of migratory game birds on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. You must remove all your blinds, boats, and decoys (see Sec. 27.93 of this chapter) from the refuge each day except for blinds made entirely of marsh vegetation.
2. We prohibit cutting of woody vegetation (see Sec. 27.51 of this chapter) on the refuge for blinds.

B. Upland Game Hunting. We allow upland game hunting on designated areas of the refuge in accordance with State regulations subject to the following condition: You may only possess approved nontoxic shot (see Sec. 32.2(k)).

C. Big Game Hunting. We allow hunting of deer and turkey on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. We prohibit use of tree spikes to assist in climbing trees for the purpose of hunting on the refuge (see Sec. 32.2(i)).
2. We prohibit the construction or use of permanent blinds, platforms, or ladders at any time.
3. We prohibit hunting over or placing on the refuge any salt or other mineral blocks (see Sec. 32.2(h)).
4. We only allow portable tree stands from September 15 through January 31. You must place your full name and address on your stands.
5. You must unload or dismantle and case all firearms while transporting them in a motor vehicle (see Sec. 27.42(b) of this chapter).
6. We restrict deer hunters on the Boone's Crossing Unit to archery methods only except for hunters on Johnson Island where State allowed methods of take are in effect.

Sec. 32.44 Missouri: **Big Muddy National Fish and Wildlife Refuge**
(Submitted for inclusion in 2011 CFR)

A. Migratory Game Bird Hunting. We allow hunting of migratory game birds on designated areas of the refuge in accordance with State regulations subject to the following conditions:

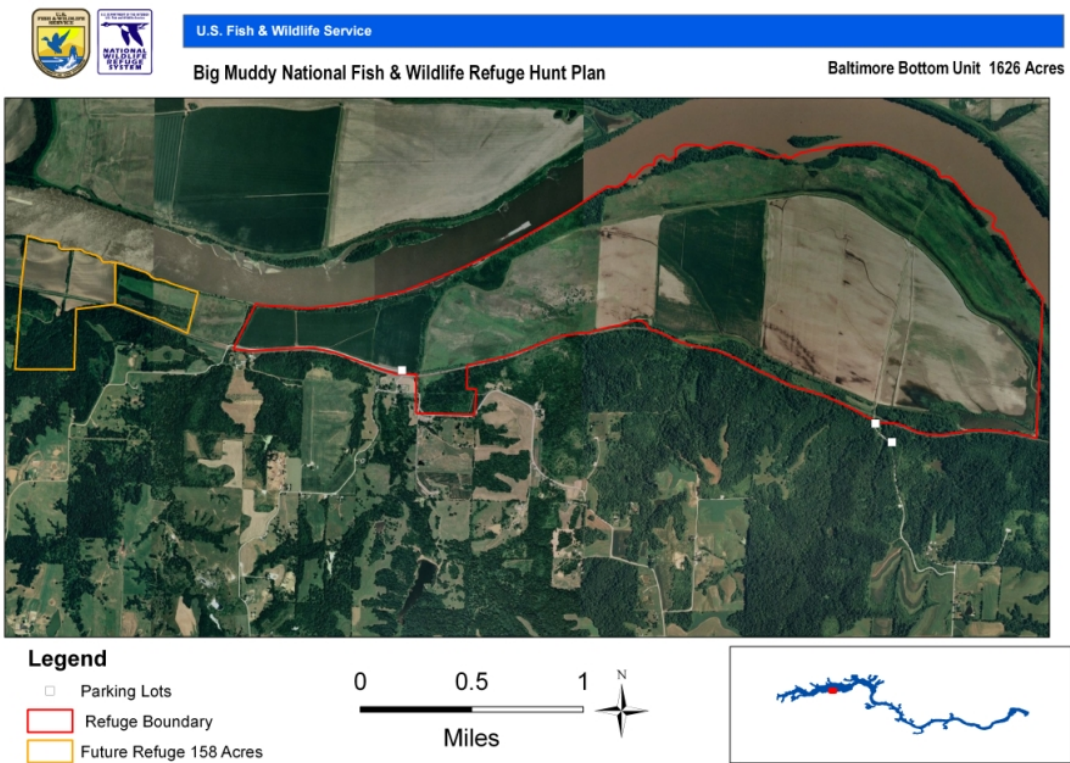
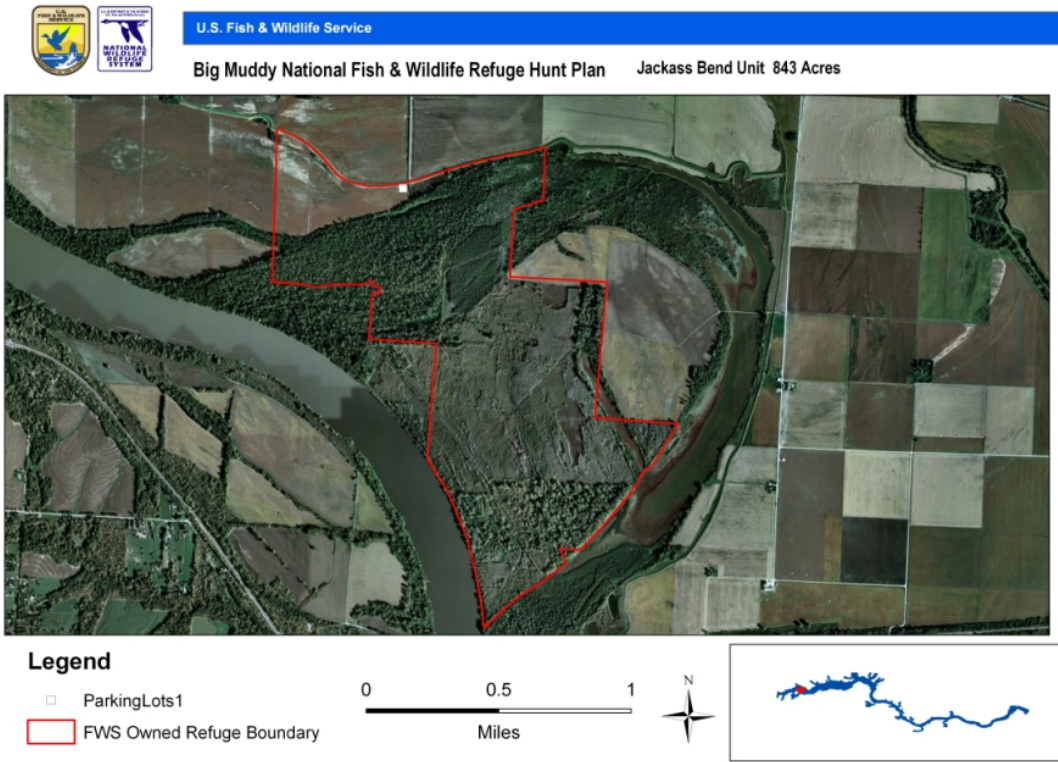
1. You must remove all your blinds, boats and decoys (see 27.93 of this chapter) from the refuge each day except for blinds made entirely of marsh vegetation.
2. We prohibit cutting of woody vegetation (see 27.51 of this chapter) on the refuge for blinds.

B. Upland Game Hunting. We allow upland game hunting on designated areas of the refuge in accordance with State regulations subject to the following condition: You may only possess approved nontoxic shot (see 32.2(k)).

C. Big Game Hunting. We allow hunting of deer and turkey on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. We prohibit the construction or use of permanent blinds, platforms, or ladders at any time.
2. We prohibit hunting over or placing on the refuge any salt or other mineral blocks (see 32.2(h)).
3. We only allow portable tree stands from September 1 through January 31. You must place your full name and address on your stands.
4. We restrict deer hunters on the Boone's Crossing Unit, including Johnson Island, to archery methods only. Hunting game animals other than deer is allowed on the 131 acre mainland unit with archery methods only. On Johnson Island, other game animals may be hunted during state wide seasons using archery methods or shotguns using shot no larger than BB.
5. Cora Island Unit is open to deer hunting for archery methods only. Hunting for other game is restricted to shotgun only with shot no larger than BB.
6. You may only possess approved non-toxic shot while hunting on the refuge; this includes turkey hunting.

APPENDIX C—Unit Maps



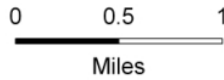


U.S. Fish & Wildlife Service

Big Muddy National Fish & Wildlife Refuge Hunt Plan Cranberry Bend Unit 829 Acres



- Parking Lots
- Refuge Boundary



U.S. Fish & Wildlife Service

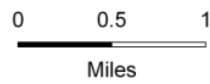
Big Muddy National Fish & Wildlife Refuge Hunt Plan

Jameson Island Unit 1871 Acres





Legend

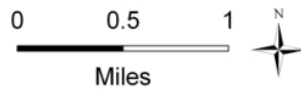
- Parking Lots
- Refuge Boundary





Legend

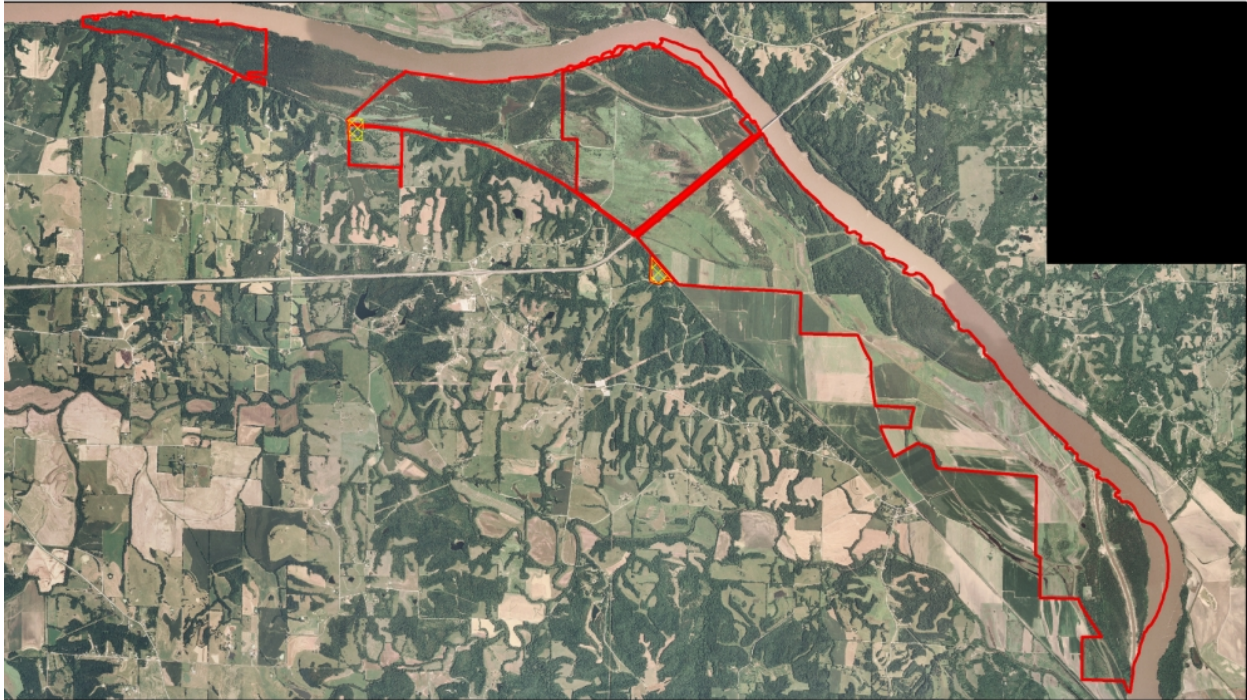
-  Parking Lots
-  Refuge Boundary







U.S. Fish & Wildlife Service

Big Muddy National Fish & Wildlife Refuge Hunt Plan Overton Bottoms North and South Units 6,211 Acres



Legend

-  Closed Area
-  Refuge Boundary







U.S. Fish & Wildlife Service

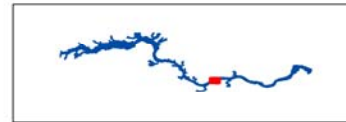
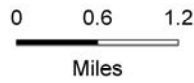
Big Muddy National Fish & Wildlife Refuge Hunt Plan

St. Aubert's Island Unit 1,126 acres



Legend

-  Parking Lot and Boat Access
-  Refuge Boundary



U.S. Fish & Wildlife Service

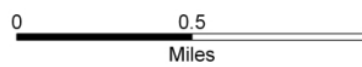
Big Muddy National Fish & Wildlife Refuge Hunt Plan

Boone's Crossing Unit 572 Acres



Legend

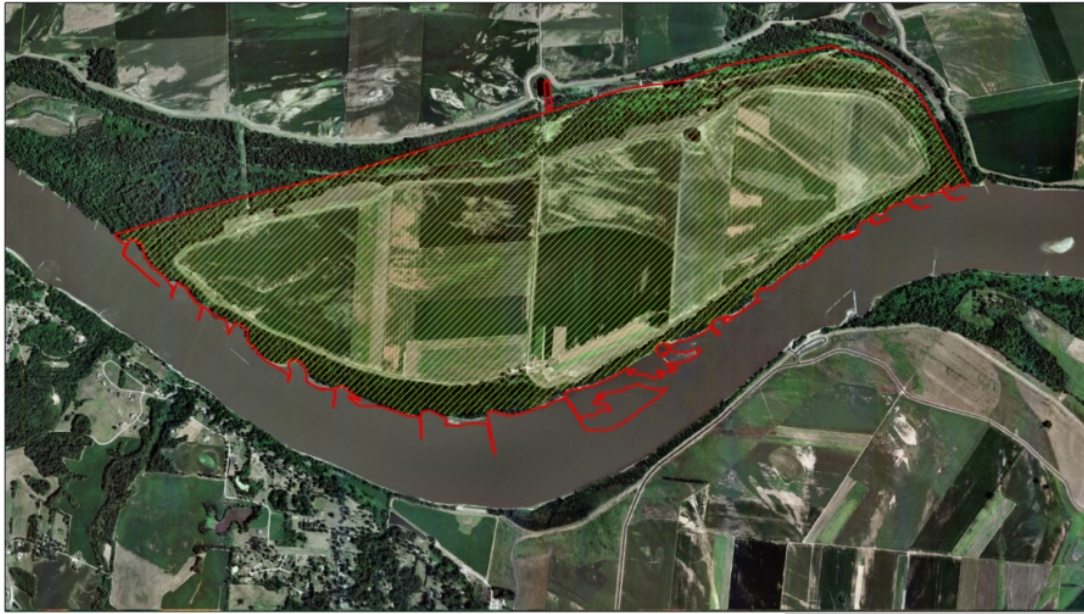
-  Parking Lot
-  Archery & Shotgun Only Hunting Area
-  Archery Only Hunting Area
-  Refuge Boundary





U.S. Fish & Wildlife Service

Big Muddy National Fish & Wildlife Refuge Hunt Plan Cora Island Unit 1,265 Acres



- Archery & Shotgun Hunting Only
- Refuge Boundary

