

**U.S. DEPARTMENT OF THE INTERIOR**  
**FISH AND WILDLIFE SERVICE**  
**DRAFT ENVIRONMENTAL ASSESSMENT**

**for**

**The 2016 Hunt Plan for Horicon National Wildlife Refuge  
and Fox River National Wildlife Refuge**

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**Abstract:**

The United States Fish and Wildlife Service (Service) proposes to provide compatible hunting opportunities for migratory game birds, upland game and big game species at the Horicon National Wildlife Refuge and Fox River National Wildlife Refuge. This environmental assessment evaluates three possible alternatives for the hunting program. The Preferred Action alternative will establish compatible hunting opportunities while providing non-hunting visitors with other priority public use opportunities (i.e. wildlife observation, wildlife photography, fishing, environmental education and interpretation) on lands described in the 2016 Hunt Plan. The proposed expanded hunting opportunities will also assist in sustaining the ecological integrity of Refuge habitats in high quality wetlands, prairies, savanna, and forests, as white-tailed deer browse is a habitat management concern. The broad objectives of the hunting program are:

- Provide the public with safe and enjoyable hunts that are compatible with the Refuges' purpose.
- Provide quality hunting opportunities that minimize conflict with other public use activities.
- Provide the public with opportunities to hunt migratory game birds, upland game and big game species that are consistent with the State of Wisconsin. Hunts will not adversely affect localized wildlife populations and will be consistent with the 1997 National Wildlife Refuge System Improvement Act.
- Promote a better understanding and appreciation of Refuge ecosystems, habitats and their associated fish and wildlife resources.
- Provide special opportunities for persons with disabilities and youth.
- When and where appropriate, an emphasis will be placed on preserving or restoring historic habitat conditions and ecosystem function.

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# 1 Purpose of and Need for Action

## 1.1 Introduction

The United States Fish and Wildlife Service (Service) has prepared this Environmental Assessment (EA) to evaluate the effects associated with proposed changes to the current hunting regulations at the Horicon National Wildlife Refuge (Horicon NWR) and Fox River National Wildlife Refuge (Fox River NWR).

This EA is an update to the EA created for the 2007 Comprehensive Conservation Plan (CCP) for Horicon NWR and Fox River NWR. It proposes changes to several management strategies, including:

At Horicon NWR,

- Opening portions of the Refuge to turkey hunting.
- Expanding the area closed to hunting around the visitor center.
- Formally open 86 acres, including two parcels acquired since 2006, to deer hunting consistent with Refuge regulations.
- Allow deer and small game hunting within the area formerly used only for special youth pheasant hunt programs.
- Update “special waterfowl hunts” to include programs such as Learn to Hunt (including first-time adults), disabled hunts, and other specially designated programs.
- Update “special waterfowl hunts” to include take of all waterfowl following state season and bag limits.

At Fox River NWR,

- Formally opening 80 acres of new land acquisitions, including three parcels acquired since 2006, to deer hunting following state regulations.

Other changes besides these few key strategies are proposed and evaluated within this EA. This EA complies with the National Environmental Policy Act (NEPA) in accordance with the Council on Environmental Quality regulations (40 CFR 100-1509) and Department of Interior (516 DM 8) and Service (550 FW 3) policies (see Section 1.7 for a list of additional regulations with which this EA complies).

## 1.2 Location

The Proposed Action would occur in Dodge County, Fond du Lac County, Wisconsin, within the Horicon NWR, and in Marquette County, Wisconsin, within the Fox River NWR. (Figures 1 and 2).

**Figure 1: Location of Horicon NWR, Dodge and Fond Du Lac Counties, Wisconsin**

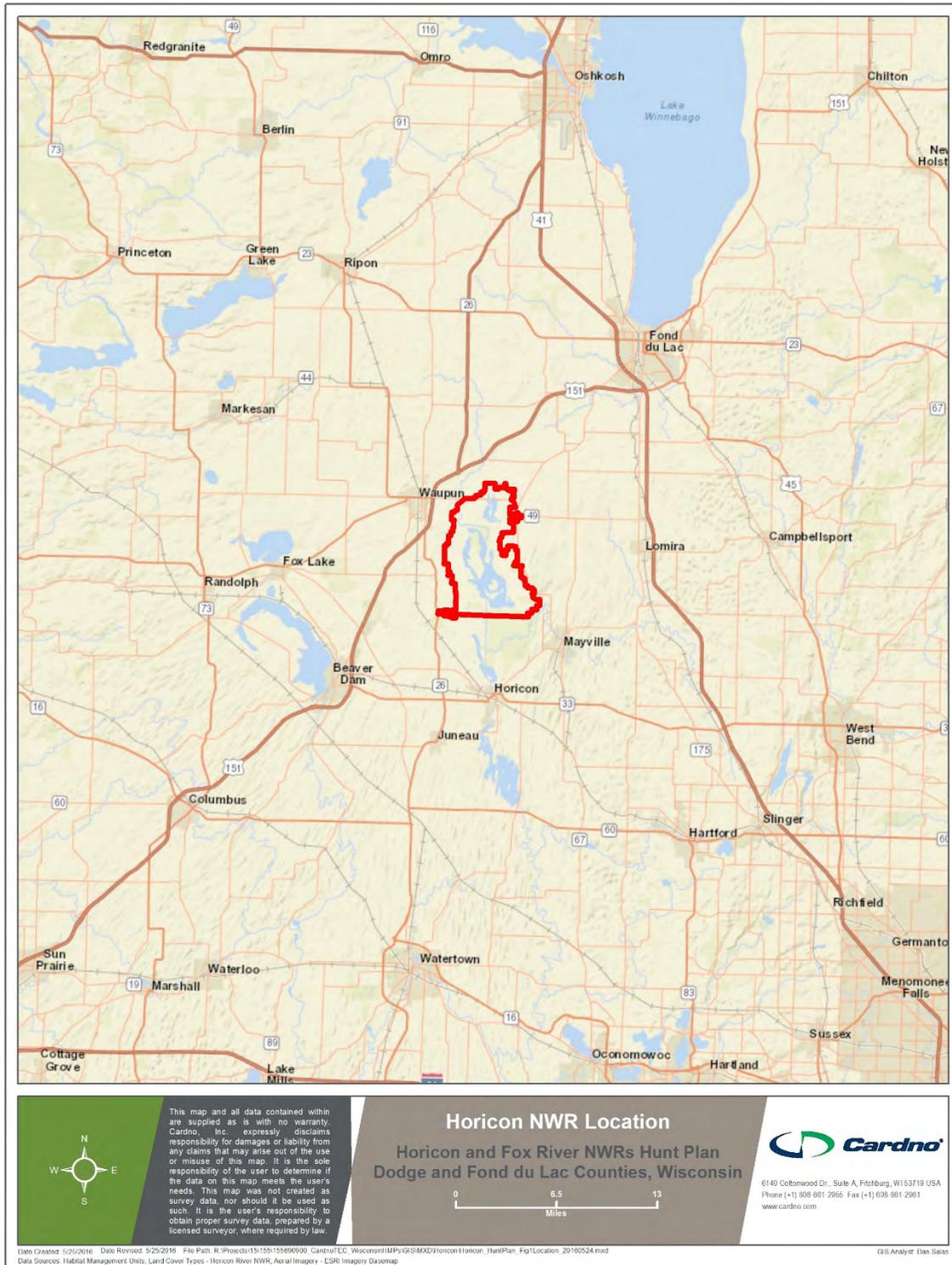
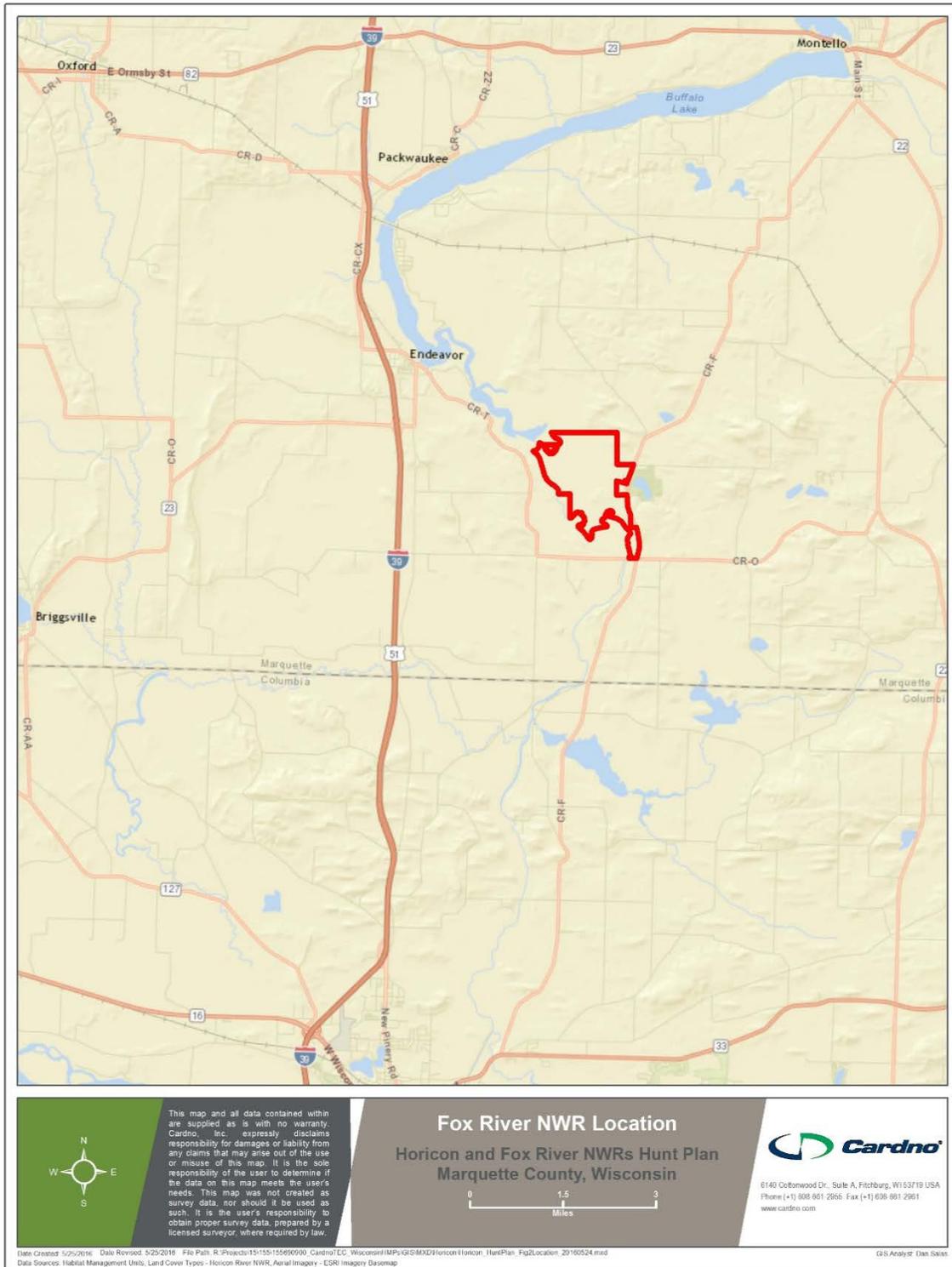


Figure 2: Location of Fox River NWR, Marquette County, Wisconsin



## **1.3 Background**

Horicon NWR and Fox River NWR are managed by the U.S. Fish and Wildlife Service under the Department of the Interior and is a unit of the National Wildlife Refuge System (NWRS).

### **1.3.1 National Wildlife Refuge System Mission and Goals**

The mission of the National Wildlife Refuge System is (National Wildlife System Administration Act of 1966, as amended [16 U.S.C. 668dd668ee]):

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

The National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) established several important mandates aimed at making the management of National Wildlife Refuges more cohesive. The legislation directs the Secretary of the Interior to ensure that the mission of the NWRS and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity and environmental health of the NWRS. The preparation of a Hunt Plan and corresponding EA helps fulfil this mandate.

The Refuge System’s mission is to:

- Conserve a diversity of fish, wildlife and plants and their habitats, including species that are endangered or threatened with becoming endangered.
- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography and environmental education and interpretation).
- Foster understanding and instill an appreciation of the diversity and interconnectedness of fish, wildlife and plants and their habitats.

### **1.3.2 Purpose of Horicon National Wildlife Refuge**

Horicon NWR, located 6 miles east of Waupun in southeastern Wisconsin, consists of more than 19,600 acres of marsh and 2,472 acres of associated upland habitat. Horicon NWR was established in 1941 under the authority of the Federal Migratory Bird Conservation Act of 1929. The purpose of the Refuge is “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds...”

### **1.3.3 Purpose of Fox River National Wildlife Refuge**

Fox River NWR, established in 1979, consists of 1,075 acres of land located 10 miles north of Portage, Wisconsin, along State Highway F. The Refuge is administered by staff at Horicon NWR, approximately 40 miles to the east. Fox River NWR was established under two legislative authorities:

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” Fish and Wildlife Act of 1956; and

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” Migratory Bird Conservation Act, February 18, 1929, 16 U.S.C. 715d.

### **1.4 Purpose of the Environmental Assessment**

The Purpose of this Environmental Assessment is to evaluate alternatives to the existing hunting program at these Refuges, as described in the 2016 Hunt Plan.

### **1.5 Need for Action**

The Improvement Act mandates six priority public uses be provided when feasible and compatible with the purpose of the Refuge. These priority uses include hunting, fishing, wildlife photography, wildlife observation, environmental education and interpretation. The need for action therefore revolves around hunting as a priority use. There is also a need to update Refuge regulations as a response to public interest and management needs observed by Service staff, as well as defining hunting regulations on 86 acres of newly acquired parcels. The combination of hunting and non-hunting areas balances the needs of hunters, who may want as much hunting land as possible, with the needs of the non-hunting public, and the biological needs of specific wildlife or groups of species. Other entities or interests affecting the management of hunting opportunities include adjacent land owners and adjacent State lands.

The Improvement Act specifically requires that people be provided the opportunity to enjoy, understand, and be part of wildlife conservation on refuges. The Improvement Act states that compatible, wildlife-dependent recreational uses involving hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are priority public uses of the Refuge System. The Service determines whether these uses are compatible for each individual refuge. A use is determined to be compatible if it does not interfere with the fulfillment of the mission of the Refuge System or the purpose of the individual refuge.

The Service’s Regional Director will select one of the alternatives analyzed in detail and will determine, based on the facts and recommendations contained herein, whether this EA is adequate to support a Finding of No Significant Impact (FONSI) or whether an Environmental Impact Statement (EIS) will be required.

The Horicon NWR and Fox River NWR CCP and associated EA determined that hunting would be allowed on both Refuges. It also provides guidance for the implementation of hunting at each Refuge. The Refuges are generally closed to migratory bird hunting, except for Learn to Hunt and special programs that limit take of only ducks and coots. The CCP and current USFWS policy (605 FW 2) also recognize that hunting is an important wildlife management tool that the

Service recognizes as a healthy, traditional outdoor pastime, deeply rooted in the American heritage. Hunting can instill a unique understanding and appreciation of wildlife, their behavior, and their habitat needs. Therefore, a no hunting (not to be confused with Current Management) alternative will not be considered in this EA.

The Service developed a strategic plan for implementing the Improvement Act called “Conserving the Future” (USFWS 2011). This plan clarifies the vision for the National Wildlife Refuge System and outlines strategies for improving delivery of the System’s mission. This vision was further refined to provide refuges implementation guidance for management actions, such as hunting (USFWS 2014). The proposed Hunt Plan is consistent with the priorities and strategies outlined in “Conserving the Future.”

This EA evaluates the Horicon NWR and Fox River NWR Hunt Plan, which is preceded by the CCP for Horicon NWR and Fox River NWR. The Visitor Services Plan for both Refuges is under development at the time of this draft.

Hunting will assist Refuge staff in managing wildlife populations at acceptable levels, maintaining diversity, promoting biological integrity and diversity, providing wildlife-dependent recreational opportunities for the public and promoting a better understanding and appreciation of marsh, savanna, forest, and prairie habitats and their associated wildlife resources. Implementation of the proposed actions will be consistent and compatible with the Refuge Recreation Act and the Refuge Administration Act.

## **1.6 Decisions That Need to be Made**

This EA includes an evaluation of the environmental effects of the action alternatives and provides information to help the Service fully consider environmental impacts. Using the analysis in this EA, the Service will decide whether there would be any significant effects associated with the alternatives that would require the preparation of an Environmental Impact Statement (EIS) or whether the Proposed Action should be adopted.

This EA evaluates the environmental consequences of several management actions as described in the 2016 Hunt Plan. Specifically,

At Horicon NWR,

- Opening portions of the Refuge to turkey hunting,
- Expanding the area closed to hunting around the visitor center,
- Formally open 86 acres, including two parcels acquired since 2006, to deer hunting consistent with Refuge regulations,
- Allow deer and small game hunting within the area formerly used only for special youth pheasant hunt programs,
- Update “special waterfowl hunts” to include programs such as Learn to Hunt (including first-time adults), disabled hunts, and other specially designated programs.
- Update “special waterfowl hunts” to include take of all waterfowl following state season and bag limits.

At Fox River NWR,

- Formally opening 80 acres of new land acquisitions, including three parcels acquired since 2006, to deer hunting following state regulations.

The Regional Director, U. S. Fish and Wildlife Service, Bloomington, Minnesota, is the official responsible for determining the action to be taken in the proposal by choosing an alternative. The Regional Director will also determine whether this EA is adequate to support a Finding of No Significant Impact (FONSI) decision, or whether there is a significant impact on the quality of the human environment, thus requiring the preparation of an Environmental Impact Statement (EIS).

## 1.7 Regulatory Compliance

This EA was prepared by the Service and represents compliance with applicable Federal statutes, regulations, Executive Orders, and other compliance documents, including the following:

- American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996).
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470).
- Clean Air Act of 1972, as amended (42 U.S.C. 7401 *et seq.*).
- Clean Water Act of 1972, as amended (33 U.S.C. 1251 *et seq.*).
- Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 *et seq.*).
- Executive Order 12898, Federal Action Alternatives to Address Environmental Justice in Minority Populations and Low Income Populations, 1994.
- Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661 *et seq.*).
- National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*).
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 *et seq.*).
- National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.*).
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 *et seq.*).
- Protection and Enhancement of the Cultural Environment (Executive Order 11593).

Further, this EA reflects compliance with applicable State of Wisconsin and local regulations, statutes, policies, and standards for conserving the environment and environmental resources, such as water and air quality, endangered plants and animals, and cultural resources.

## 1.8 Scoping and Public Participation

In preparation for this hunt plan, the Service held two open house events to solicit input and comments from the public:

Tuesday, February 16, 2016, 6-8 p.m.  
Horicon National Wildlife Refuge Visitor Center  
W4279 Headquarters Road, Mayville WI

Thursday, February 18, 2016, 6-8 p.m.  
Buffalo Town Hall  
W3205 County Road O Montello, WI 53949

The purpose of these open houses was to offer the public the opportunity to provide input regarding hunting activities on refuges managed under the Horicon National Wildlife Refuge / Leopold Wetland Management District Complex. The public was informed that the Waterfowl Production Areas within the Leopold Wetland Management District and Green Bay/Gravel Islands National Wildlife Refuge (which is also managed by staff based at Horicon NWR) will not be included in this planning phase.

Current CCPs for each of these refuges were made available through the following weblink:

- <http://www.fws.gov/midwest/planning/Horicon/index.html> (Horicon and Fox River NWRs)

If someone was unable to attend an open house and wanted to submit written comments for one or all of these refuges, comment forms were made available at the Horicon NWR headquarters office, (open Monday through Friday from 9-4), or online at <http://www.fws.gov/refuge/horicon/>. Comments were received through the March 25, 2016, comment deadline.

## 2 Affected Environment: Horicon NWR

Horicon NWR is located approximately 15 miles east of the City of Waupun, Wisconsin, along the Rock River. The entire Horicon Marsh (which includes both Horicon NWR and the Horicon State Wildlife Area) is 13 miles long, stretching from Oak Center Road in Fond du Lac County to the City of Horicon in Dodge County, and widens to nearly 5 miles in places. Ownership of the marsh is split, with the Wisconsin DNR managing the southern one-third and the Service managing the northern two-thirds (USFWS 2007). The area managed by the Service is approximately 22,072 acres (out of a total of more than 30,000 acres).

### 2.1 Biological Environment

#### 2.1.1 Habitat

The majority of the marsh basin is cattail marsh, dominated by hybrid cattail (*Typha x glauca*), or shallow marsh and wet meadow, dominated by reed canary grass (*Phalaris arundinacea*). Soft stem bulrush (*Schoenoplectus tabernaemontani*) and Giant bur-reed (*Sparganium eurycarpum*) also dominate areas of the 19,600 acre wetland. Water levels fluctuate in the impoundments both naturally and through the use of water control structures between the impoundments and, less often, with the help of pumping stations. Moist soil plants can dominate in and around the edges of open water areas during drought/low water conditions. Common plants include smartweeds (*Polygonum* spp.), pigweeds (*Amaranthus* spp.), beggars tick (*Bidens* spp.), Walter's millet (*Echinochloa walteri*), and rice cut grass (*Leersia oryzoides*). Lowland woodlands of willow (*Salix* spp.) and ash (*Fraxinus* spp.) occur on islands in the marsh and surrounding lands along with shrub swamps of willows, dogwoods (*Cornus* spp.) and alders (*Alnus* spp.) with an understory of reed canary grass and sedges. The most recent land cover classification analysis was completed in 2005, just prior to the CCP. This data was reviewed and updated by refuge staff in 2015. Land cover classes are mapped in Figure 3 below (refuge staff, personal communication November 2015, USFWS 2007).

The refuge also manages an upland buffer around the marsh of approximately 2,472 acres. Upland woods of oaks (*Quercus* spp.) and hickory (*Carya* spp.) as well as grasslands make up

the bulk of the upland area. Grassland units are broken up and described as being either cool-season or warm-season. Cool-season units are typically dominated by non-native invasive grasses such as quack grass (*Elymus repens*), smooth brome (*Bromus inermis*), and Kentucky bluegrass (*Poa pratensis*). Warm season units are typically seeded and managed for native prairie mixes that include big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), and native forbs such as black-eyed Susan (*Rudbeckia hirta*), wild bergamot (*Monarda fistulosa*), milkweeds (*Asclepias* sp.) and goldenrods (*Solidago* spp.). Oak savanna, a historically abundant community type in this region, is being actively restored in few areas of the refuge. Open grown bur oak (*Quercus macrocarpa*) typically occur at low densities with an understory that resembles typical upland prairie. This ecotype supports some savanna specialists such as the red-headed woodpecker that are in decline in the region (refuge staff, personal communication November 9-10, 2015, USFWS 2007).

Horicon Marsh is a diversity hotspot, especially for birds. The refuge's driving purpose is creating and maintaining habitat for migrating and nesting waterfowl. The refuge is a major destination in the Mississippi flyway, and it has attracted 267 different species over the years. This includes many shorebirds that fly through on a migration route many thousands of miles long to songbirds that travel to the southern U.S. and Central America from northern Wisconsin and Canada. The refuge serves as a haven and food source in an area that has been predominately turned into industrial agriculture over the last century (USFWS 2007).

Wildlife viewing is a major draw to the refuge each year. Over 300,000 visits each year are based on wildlife viewing, with birding being the most popular reason. This extra attention pushes Horicon Marsh into the public sphere more than many refuges, and has contributed to its being named a RAMSAR wetland of international importance among other designations (USFWS 2007).

### **2.1.2 Wildlife**

#### ***Waterfowl***

Horicon Marsh is a major migratory stop-over point for waterfowl (ducks, geese, and swans) of the Mississippi Flyway, with use-days reaching 6 to 12 million annually. Waterfowl production averages about 3,000 ducklings per year.

The marsh annually attracts Mississippi Valley Population (MVP) Canada Geese during their travels between Hudson Bay and southern Illinois/western Kentucky. The geese are on the marsh from late February to mid-April and from mid-September until freeze-up, with peak numbers in mid-October. The marsh is an important staging area that fuels their journey north and furnishes energy for reproduction.

Up to 1 million Canada Geese migrate through the Refuge each fall. On a peak fall day, there could be as many as 300,000 geese in the area. Most of the Canada Geese that stop at Horicon Marsh fly to their winter range in the area where the Ohio River joins the Mississippi River, about 450 miles away. The rest of the Mississippi Valley population of Canada geese that migrate through Michigan, Ohio, and Indiana join these birds on the wintering grounds located in southern Illinois, western Kentucky, Tennessee, and Missouri. From about the middle of March

until the end of April the birds pass through Horicon Marsh once more to rest and prepare for the flight to the nesting grounds near Hudson Bay in Canada.

Geese eat about a half-pound of food per day per bird when they are at Horicon NWR. They are grazers – they like soft shoots, leaves, and buds from meadow plants, grasses, wild rice, and cultivated crops. Goslings eat many insects as a supply of protein for rapid body growth. They also eat grain and other seed crops where they can find them. When geese are present for long periods of time in extremely large numbers they can cause a severe problem for some land owners. Geese will feed on the very same crops farmers in east-central Wisconsin grow – corn, alfalfa, and winter wheat. Assistance to farmers is provided by the U.S. Department of Agriculture and the State of Wisconsin through a program that charges a surtax on hunting licenses. The surtax is used to partially pay land owners for damage caused by geese. This program is administered by county governments.

Mallards are the principle species of ducks using the area, but green-winged and blue-winged teal, American wigeon, redheads, northern pintails, gadwalls, wood ducks, lesser scaup, and ruddy ducks are also abundant, with peak duck numbers traditionally reaching 60,000. The marsh is especially important to redheads, which have experienced a population decline nationwide. The marsh is among the largest nesting areas for redhead ducks in the eastern U.S., and is the primary nesting site for the species in Wisconsin. It is estimated that an estimated 2,000 to 3,000 birds using the marsh for this purpose (Houdek and Kreitinger 2013). Historically, a majority of the continent's canvasback population used the region during nesting or migration (Kahl 1985).

### ***Marsh Birds***

For centuries, marsh birds in particular have descended upon food-rich wetland stopover sites during their annual migration between Central and South America and their northern U.S., Canadian and Arctic breeding grounds. Horicon Marsh has provided an important link in their journey.

Common marsh and water birds on the Refuge include the pied-billed grebe, American bittern, great blue herons, black-crowned night herons, great egrets, common moorhen, sora, Virginia rails, and sandhill cranes. Tremendous numbers of shorebirds use low water pools with counts of a single species typically numbering over 5,000 (USFWS 1995).

### ***Other Birds***

Horicon NWR has documented 267 species of birds on the Refuge (see Appendix C for a complete list), including resident, migratory, and accidental species. Of the 267 species recorded on the Refuge, 223 are expected to be present while 44 birds are listed as “accidental,” meaning they are not normally expected to be present. Many birds are present for less than all four seasons, and they may be abundant, common, uncommon, or rare.

Although most famous as a fall stopover for hundreds of thousands of interior Canada geese, the vitality and versatility of the marsh is much better represented by the diversity of birds that use the Refuge and the marsh. An equal number of birds use the marsh in the spring as in fall, and some species are partial to grassland or upland habitats.

### ***Mammals***

The marsh supports an array of resident mammals including white-tailed deer, woodchuck, red fox, squirrel, raccoon, muskrat, skunk, mink, otter, opossum, and coyote. Mammals tend to be most abundant in and around the wetland habitat due to the abundant food and cover available. Muskrats play an important role in managing marsh vegetation and maintaining a mix of vegetated cover and open water in marsh areas.

According to the Refuge CCP (USFWS 2007), upland mammals of Horicon NWR, and their abundance (abundant, common, or uncommon), include:

#### Abundant

- Field mice
- Raccoon
- Eastern cottontail rabbit
- White-tailed deer

#### Common

- Opossum
- Thirteen-lined ground squirrel
- Eastern chipmunk
- Eastern gray squirrel
- Meadow vole
- Long tailed weasel
- Fox squirrel
- Woodchuck
- Little brown bat
- Big brown bat
- Striped skunk
- Red fox
- Coyote

#### Uncommon

- Deer mouse
- Ermine
- Least weasel

Similarly, the CCP (USFWS 2007) noted mammals at Horicon NWR closely associated with marsh and wetland areas:

#### Abundant

- Muskrat

#### Common

- Mink

#### Uncommon

- Beaver
- River otter

### ***Fish***

At one time Horicon Marsh supported a population of game fish that included northern pike, crappie, bluegill, and bass. However, due to habitat degradation associated with turbidity and filling in of the marsh, game fish populations have dramatically declined.

Carp populations have become a serious problem in the marsh due to their high number, aquatic plant diet, and habit of markedly increasing water turbidity during feeding. Carp are extremely prolific, spawning semi-annually, with females producing as many as 60,000 eggs per pound of fish. They retard the growth of aquatic vegetation by consuming it and by roiling the water so that increased turbidity reduces photosynthetic efficiency, which is essential for wetland food chains. Current management strategies at controlling carp include physical removal, water level manipulation, chemical eradication, and stocking of predators, especially northern pike (USFWS 2007).

### ***Amphibians and Reptiles***

Amphibians and reptiles are two natural and distinct classes of vertebrates common to the area. Several species of turtles and snakes are found in the area. Salamanders, newts, toads, and frogs depend on quality wetland habitat for their survival.

Amphibians recorded at Horicon NWR (USFWS 2007) include the following:

#### Abundant

- Western chorus frog
- Leopard frog
- Green Frog

#### Common

- American toad
- Wood frog
- Eastern gray treefrog

#### Uncommon

- Tiger salamander

Reptiles recorded at Horicon NWR (USFWS 2007) include the following:

#### Abundant

- Eastern gartersnake
- Painted turtle

#### Common

- Snapping turtle
- Red-bellied snake
- Western fox snake

#### Uncommon

- None

#### Rare

- Milk snake

### ***Federally Protected, Threatened, and Endangered Species***

At present, no Federally-listed threatened or endangered wildlife species are known to breed at Horicon NWR.

Bald eagles were placed on the Federal Endangered Species list in 1973, and were protected by both State and Federal laws. On August 9, 2007, the bald eagle was removed from the Federal list of threatened and endangered species. Bald eagles are now listed as Special Concern in Wisconsin and federally protected by the Bald & Golden Eagle Protection Act. They prefer large trees in isolated areas in proximity to large areas of surface water, large complexes of deciduous forest, coniferous forest, wetland, and shrub communities (WDNR 2016a).

The formerly listed Peregrine falcon has also been observed at Horicon NWR (listed as “rare” in spring, fall, and winter), but in a conservation success story, it was de-listed in 1999 due to continent-wide improvements in the status of peregrine populations, from 324 breeding pairs in 1975 to 2,000-3,000 breeding pairs by the late 1990s (USFWS no date). The peregrine falcon is listed as State-endangered by WDNR (WDNR 2016b).

## **2.2 Historical Properties and Cultural Resources**

As a federal conservation agency, the Service has a responsibility for the protection of the many known and undiscovered cultural resources located on Refuge lands. Cultural resources management in the Service is the responsibility of the Regional Director and is not delegated for the Section 106 process when historic properties could be affected by Service undertakings, for issuing archeological permits, and for Tribal involvement. The Regional Historic Preservation Officer (RHPO) advises the Regional Director about procedures, compliance, and implementation of cultural resources laws. The Refuge Manager assists the RHPO by informing the RHPO about Service undertakings, by protecting archeological sites and historic properties on Service managed and administered lands, by monitoring archeological investigations by contractors and permittees, and by reporting violations.

Land in the area of Horicon NWR and Fox River NWR was important to prehistoric peoples and to Euro-American settlers. The historic and pre-historic artifacts on the Refuge are limited and irreplaceable national treasures. Many of the sites have been identified but not researched. Combined, Horicon and Fox River NWRs have 16 completed cultural resources (archeological) studies. Based on these studies and information from the Wisconsin Historic Preservation Database and other sources, known cultural resources are considered when planning access within the context of the hunt plan (USFWS 2007).

## **2.3 Socio-Economic Conditions**

As summarized in the Refuge CCP (USFWS 2007), Horicon NWR is located in southern Wisconsin. Table 2-1 shows the area economy. The area population increased by 4 percent from 2001 to 2011, compared with a 6 percent increase for Wisconsin and a 9 percent increase for the U.S. as a whole. Area employment showed no change from 2001 to 2011, with Wisconsin showing a 3 percent increase and the U.S. a 6 percent increase. Area per capita income increased by 3 percent over the 2001-2011 period, while Wisconsin and the U.S. increased by 4 and 5 percent respectively.

**Table 2-1. Horicon NWR: Summary of Area Economy, 2011**

Source: Carter and Caudill (2013) citing U.S. Department of Commerce November 2012.

County	Population		Employment		Per Capita Income	
	2011	Percent change 2001-2011	2011	Percent change 2001-2011	2011	Percent change 2001-2011
Dodge	887,000	3%	484,000	2%	\$35,086	5%
Fond Du Lac	1,021,000	4%	581,000	-1%	\$36,897	0%
<b>Area Total</b>	<b>1,907,000</b>	<b>4%</b>	<b>1,065,000</b>	<b>0%</b>	<b>\$36,055</b>	<b>3%</b>
Wisconsin	57,118,000	6%	34,750,000	3%	\$39,575	4%
United States	3,115,919,000	9%	1,758,347,000	6%	\$41,560	5%

### 2.3.1 Economic Benefits of the Refuge

Table 2-2 summarizes the estimated recreation expenditures associated with visitor recreation to the Refuge. The economic area considered for the Refuge is Dodge and Fond du Lac Counties, Wisconsin. Carter and Caudill (2013) assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2011 are shown in Table 2-2. Total expenditures were \$6.3 million with non-residents accounting for \$2.8 million or 45 percent of total expenditures. Expenditures on non-consumptive activities accounted for 96 percent of all expenditures.

**Table 2-2: Horicon NWR: Visitor Recreation Expenditures (2011)**

Activity	Resident	Non-resident	Total
Non-Consumptive	\$32,087,000	\$27,869,000	\$59,956,000
Hunting	\$1,581,000	\$419,000	\$2,001,000
Fishing	\$562,000	\$157,000	\$719,000
<b>Total Expenditures</b>	<b>\$34,230,000</b>	<b>\$28,445,000</b>	<b>\$62,675,000</b>

Source: Carver and Caudill, 2013

## 3 Affected Environment: Fox River NWR

Fox River National Wildlife Refuge is located in Marquette County, approximately 3 miles southeast from the town of Endeavor. The 1,075 acre refuge lies in the upper reaches of the Fox River watershed, with the river itself forming the western boundary of the site and historic oxbows marking the interior. The refuge is primarily a floodplain for the Fox River and water levels on the site vary with the season and precipitation in the watershed. No water control structures exist on the site, so water level management is not influenced by refuge involvement. The most common wetland type on the refuge is sedge meadow, which transitions into shallow

marsh or wet prairie in areas. The sedge meadow communities are considered to be diverse and high-quality. Prescribed fire is the main management tool used by the refuge staff. Human use at Fox River NWR is much lower than at Horicon NWR, likely leading to fewer disturbance-based degradations such as invasive species introductions.

### **3.1 Biological Environment**

#### **3.1.1 Habitat**

Nine plant communities are recognized on the Refuge: upland deciduous forest, upland old field, lowland forest, low prairie, fen, sedge meadow, shrub-carr, shallow and deep marsh, and submerged aquatic plants in open water. Only two of these nine (upland deciduous forest and upland old field) are upland habitats; the others are lowland, wetland, or bottomland habitats with high moisture or saturated soils. Two features of the wetlands are acidic sands and alkaline seeps; in combination, they support the wetlands an unusual floristic diversity. The diversity and structure of the vegetation communities offer an outstanding variety of habitats for wildlife.

Another habitat feature that contributes to habitat diversity is a 40-acre upland island in the center of the marsh. This island is generally inaccessible and represents an excellent example of an undisturbed climax oak-hickory woodlot.

The majority of the Refuge consists of sedge meadow, wet prairie, and shallow marsh wetlands dominated by many species of sedges, grasses, and cattail. However, other wetland types such as fens, lowland forest, shrub-carr thickets, deep marsh, and open water occur on the Refuge as well.

In Wisconsin generally, sedge meadows are dominated by sedges, most of which belong to the genus *Carex*, growing on saturated soils. Other plants commonly found in sedge meadows include spike rushes (*Eleocharis* sp.), bulrushes (*Schoenoplectus* sp.) and nutgrasses (*Cyperus* sp.). Grasses (Poaceae) and true rushes (*Juncus* spp.) are also found in sedge meadows. The forb species are diverse but scattered and may flower poorly under intense competition with the sedges. Sedge meadows can often transition into shallow marshes, calcareous fens, low prairies and bogs (Epstein et al. 2002).

Fens are a very rare wetland type in Wisconsin and harbor many State-listed threatened and endangered plants. Shrub-carr thickets are a wetland community dominated by tall shrubs such as red-osier dogwood, meadow-sweet, and various willows. Canada bluejoint grass is often very common (Epstein et al. 2002).

Upland habitats consist of closed canopy upland deciduous forest dominated by white, black, and bur oak, upland dry prairie, and oak savanna. Three spring-fed creeks flow through the Refuge, adding to the diversity of the area. In 2003, the Service conducted surveys of six broad habitat types on the Refuge in order to monitor vegetation and wildlife communities, as well as abiotic conditions, namely the hydrologic regime.

#### ***Wet Prairie – Emergent Marsh***

This habitat type is very broad on the Refuge and includes most treeless wetland habitats, such as wet prairie, sedge meadow, and shallow emergent marsh. Wet prairie and sedge meadow are

difficult to differentiate, since these two habitats tend to mix together. Wet prairie is drier than the sedge meadows and is dominated by tussock sedge (*Carex stricta*), flat-top aster (*Aster umbellatus*), joe-pye weed (*Eupatorium maculatum*), goldenrod (*Solidago* spp.), wild iris (*Iris versicolor*), smartweed (*Polygonum* spp.), and sensitive fern (*Onoclea sensibilis*). Wet prairie also tends to be overgrown in many places with shrubs such as red-osier dogwood (*Cornus stolonifera*), willow (*Salix* spp.), and alder (*Alnus incana*). Many of the wet prairie sites are also fens, where rare plants characteristic of fens were documented in the 2003 survey, such as hedge nettle, swamp thistle, lousewort, obedient plants, sneezeweed, culvers root, water hemlock, downy willoweed, and St. John's wort, among others. There is rarely any surface water in the wet prairie, only moist soil.

Sedge meadow is dominated by plant species with more flooding tolerance. The sedge meadows are much more monotypic and have fewer forbs than the wet prairies. Shallow emergent marsh has generally deeper water depths, ranging from 0 – 30 inches, with a mean close to 15 inches. Shallow marsh tend to be dominated by cattail (*Typha* spp.), lake sedge (*Carex lacustris*), some blue joint grass (*Calamagrostis canadensis*), arrowhead (*Sagittaria* spp.), beggers-ticks (*Biden* spp.), dock (*Rumex* spp.), bulrushes (*Schoenoplectus* spp.), smartweed (*Polygonum* spp.), bur reed (*Sparganium eurycarpum*), and sweet flag (*Acorus calamus*).

A variety of wildlife species, from ducks to rails to songbirds, use this habitat type. Common breeding bird species in this habitat type include sandhill crane, mallard, blue-winged teal, wood duck, Canada goose, sedge wren, swamp sparrow, common yellowthroat, red-winged blackbird, northern harrier, American goldfinch, tree swallow, sora, American bittern, green heron, great blue heron, great egret, bobolink, eastern kingbird, and American crow. Only a few yellow and Virginia rails were seen during the summer 2003 survey; the yellow rail is a species of concern and is very rare. Species present in larger numbers during fall included sandhill crane, mallard, (USFWS 2003).

### **Wetland Shrub-Scrub**

These shrub-carr habitats are dominated by red osier dogwood, willows, alders, bog birch (*Betula pumila*), tamarack (*Larix laricina*), green ash (*Fraxinus pennsylvanica*), and some aspen (*Populus* spp.). The herbaceous community and hydrology is similar to that of wet prairie, and as a result fens occur in this shrub scrub habitat (USFWS 2003).

Common breeding birds include sandhill crane (in the more open shrub-scrub areas), song sparrow, yellow warbler, common yellowthroat, swamp Sparrow, Blue-winged Warbler, northern cardinal, alder and willow flycatcher, American crow, American goldfinch, woodcock, gray catbird, mourning dove, brown-headed cowbird, red-winged blackbird, cedar waxwing, veery, rufous-sided towhee, eastern kingbird, green heron, blue-gray gnatcatcher, blue jay, and indigo bunting. A few Bell's vireos were documented during the summer 2003 survey, a rare bird for this part of the United States and listed as Threatened in Wisconsin. Birds common during fall migration include sandhill crane, woodcock, yellow-rumped warbler, American goldfinch, gray catbird, golden-crowned kinglet, blue jay, downy woodpecker, cedar waxwing, sharp-shinned hawk, Cooper's hawk, eastern bluebird, palm warbler, song sparrow, American robin, and northern flicker (USFWS, 2003).

### ***Wetland Forest***

Dominant trees in this habitat type include tamarack, green ash, swamp white oak (*Quercus bicolor*), red maple (*Acer rubrum*), elm (*Ulmus americana*), and to a lesser extent, bur oak (*Quercus macrocarpa*). Midcanopy trees and shrubs include those mentioned previously, dogwood, bog birch, alder, and willow. Little, if any, surface water is present in wetland forest, but soil is very moist (USFWS 2003).

In terms of bird use, this is possibly the most diverse habitat type on the refuge. common breeding species in this habitat type include veery, house wren, American robin, cedar waxwing, yellow warbler, common yellowthroat, blue-winged warbler, red-bellied woodpecker, pileated woodpecker, rose-breasted grosbeak, downy woodpecker, indigo bunting, willow and alder flycatcher, gray catbird, Baltimore oriole, northern flicker, blue jay, eastern wood-pewee, red-eyed vireo, ovenbird, northern cardinal, mourning dove, yellow-throated vireo, black-capped chickadee, and blue-gray gnatcatcher. Species present in larger numbers during fall include American robin, cedar waxwing, American goldfinch, black-capped chickadee, yellow-rumped warbler, white-throated sparrow, white-breasted nuthatch, fox sparrow, and American crow. In the 2003 survey, a long-eared owl was documented in a tamarack forest in October (USFWS 2003).

### ***Upland Prairie***

In the 2003 survey, only four points were located in upland prairie (old agriculture fields). These points were dominated by monotypic cool season grass stands consisting of mainly smooth brome, quack grass, and Kentucky bluegrass. Goldenrods and common mullein were the only common wildflower species found.

In contrast to wetland forest, upland prairie likely had the lowest number of bird species surveyed in 2003. The habitat was very monotypic, likely causing low bird species richness. bird species documented in upland prairie included bobolink, northern bobwhite, wild turkey, common yellowthroat, tree swallow, eastern bluebird, field sparrow, song sparrow, eastern kingbird, sandhill crane, and European Starling (USFWS, 2003).

### ***Upland Savanna***

Upland savanna is similar to upland prairie on the Refuge, the only difference being that these sites have been invaded by small red cedar and white pine, thus creating an old field savanna. This savanna is not the goal of management and restoration efforts – the goal is true oak savanna. In the 2003 survey, these old field savannas did contain some good native plant species (in a limited amount) not found on upland prairie sites, such as big bluestem, little bluestem, whorled, common, and sand milkweed, wild raspberry, western ragweed, bush clover, needle grass, nutsedge, horsemint, blazing star, and butterfly milkweed.

Upland savanna has more species than upland prairie, likely because of the presence of small cedar and white pine in the prairie. In the 2003 survey, these species included sandhill crane, chipping sparrow, clay-colored sparrow, Henslow's Sparrow, common yellowthroat, American robin, field sparrow, rufous-sided towhee, mourning dove, American goldfinch, song sparrow, eastern bluebird, tree swallow, savanna sparrow, barn swallow, eastern kingbird, bobolink, turkey vulture, red-tailed hawk, and brown-headed cowbird (USFWS 2003).

### ***Upland Forest***

All of the upland forest on the Refuge was historically oak savanna, dominated by white, black, and bur oak. Now, it is a closed canopy forest with many tree species that are not fire tolerant. Many remnant savanna trees exist in these forests, obviously open grown, with broad, spreading, and drooping crowns. Dominant tree species were white oak, black oak, bur oak, black cherry, red cedar, elm spp., northern red oak, shagbark hickory, sugar maple, and some green ash. Mid-canopy trees and shrubs consisted of those dominant trees mentioned previously, plus mulberry, grape spp, winterberry, and dogwood spp. The herbaceous layer was dominated by huckleberry spp., wild raspberry, garlic mustard (not good), avans, nettle spp., grass spp., and burdock.

This habitat type is also very diverse in terms of bird use. Just a few of the most common breeding birds seen in the 2003 survey were pileated, red-bellied, and downy woodpecker, white-breasted nuthatch, scarlet tanager, rose-breasted grosbeak, ovenbird, eastern-wood pewee, black-capped chickadee, northern cardinal, gray catbird, hairy woodpecker, red-eyed vireo, northern flicker, great crested flycatcher, indigo bunting, blue jay, American crow, American goldfinch, cedar waxwing, blue-gray gnatcatcher, and mourning dove. Less common birds include ruffed grouse, chestnut-sided warbler, Lincoln's sparrow, yellow-throated vireo, black-billed cuckoo, and blue-headed vireo. Golden-crowned kinglet, wild turkey, American robin, yellow-rumped warbler, black-and-white warbler, white-throated sparrow, slate-colored junco, cedar waxwing, northern shrike, and fox sparrow are commonly observed on the Refuge during fall (USFWS, 2003).

### ***Open Water – Deep Marsh***

In the 2003 survey, this habitat type was not officially sampled with the methods used in the habitat types above. However, casual observations from open water/deep marsh wetlands on the Refuge are recorded here. Wild rice and a variety of submersed aquatic vegetation (SAV) were present on Refuge open water wetlands. SAV consisted of water lilies, Potamogeton spp., coontail, wild celery, and a variety of others not identified. Species using open water on the refuge during summer include mallard, blue-winged teal, wood duck, Canada geese, great blue heron, great egret, green heron, sandhill crane, American bittern, belted kingfisher, bald eagle, killdeer, black tern, and caspian tern. In addition to the birds listed above, fall migrants at fox river include ring-billed gull, tundra swan, osprey, western, pectoral, and least sandpiper, lesser and greater yellowlegs, long-billed dowitcher, green-winged teal, black duck, gadwall, and northern shoveler (USFWS, 2003).

## **3.1.2 Wildlife**

### ***Birds***

The Fox River NWR was originally recognized as important to nesting sandhill cranes and at one time had some of the most productive crane habitat in southern Wisconsin. The marsh still supports at least five breeding pairs each year. It is also a major staging area for sandhill cranes in southern Wisconsin and is used by 300 to 400 migrating cranes each autumn (USFWS 1979).

Due to its relatively undisturbed condition, the wooded island in the center of the marsh has historically supported a small rookery of herons, including great blue herons, great egrets, and black-crowned night herons (USFWS 1979). In addition to these colonial nesting herons,

American bitterns have been observed nesting in the marsh and least bitterns occur during the summer.

Waterfowl numbers in the area are relatively high, with fall censuses having counted approximately 3,000-5,000 ducks and 10,000 Coots on nearby Buffalo Lake. Ducks in the Refuge are mostly blue-winged teal and mallards. Estimates of breeding pairs per square mile have averaged five pairs of mallard and 27 pairs of blue-winged teal at the French Creek Wildlife Management area, which has waterfowl habitat similar to that found on Fox River NWR.

Altogether, approximately 100 species of birds representing 21 families have been observed at the Refuge. Nesting on the Refuge has been documented for 51 of these species.

### ***Mammals***

About 26 species of mammals have been recorded at the Refuge. One of them is Richardson's squirrel, typically a western prairie species. Furbearers include mink, muskrats, beaver, and raccoon. Marquette County has had high densities of white-tailed deer, up to 60 deer per square mile (USFWS 1979).

### ***Amphibians and Reptiles***

At least 15 species of amphibians and reptiles have been identified at the Refuge. This tally includes six species of frogs, five species of turtles, and four species of snakes (USFWS, 1979).

### ***Aquatic Life***

Fox River and nearby Buffalo Lake contain an abundance and diversity of fresh water aquatic plant and animal life. Portions of the river and the lake have been chemically treated at times to remove undesirable non-game fish and excessive aquatic vegetation. Game fish included perch, bass and northern pike. Six species of freshwater clams have been reported at the Refuge, providing food for many wildlife species (USFWS, 1979).

### ***Federally Protected, Threatened, and Endangered Species***

No species on the federal threatened and endangered species list are known to exist at Fox River NWR. However, several state-listed species are present, including the double-crested cormorant, great egret, red-shouldered hawk, wood turtle and Blanding's turtle.

## **3.2 Historical Properties and Cultural Resources**

See previous discussion regarding both refuges under Section 2.2.

## **3.3 Socio-Economic Conditions**

Marquette County has a substantially smaller population as well as a lower population density than either Dodge or Fond du Lac Counties. Its population has declined slightly since 2000, although it grew very rapidly in the 1990s, three times as quickly as the state did. Still, the county population density is only one-third of Wisconsin's average density (USFWS 2007).

### **3.3.1 Economic Benefits of the Refuge**

Economic benefits for Fox River NWR were not evaluated in detail described previously for Horicon NWR. As a result, the Refuge can only infer that some economic benefits, albeit to a

lesser magnitude compared to Horicon NWR, are likely the result of hunting access at the Refuge. Using the national estimates developed by Carver and Caudill (2013), the Service estimates that involvement in big game hunting on refuges for species like white-tailed deer in Region 3 (the Midwest) can equate to \$25 to 50 spent per person per day in local expenditures.

## 4 Proposed Action and Alternatives

This section explains how alternatives were formulated and eliminated from further study, describes alternatives, and identifies the preferred alternative.

This EA evaluates the environmental consequences of hunting alternatives on the two Refuges. For Horicon NWR, three alternatives were considered and are presented in this document:

- Alternative A: Allow areas to be hunted as permitted through the previous hunt plan (Current Management Alternative);
- Alternative B, Preferred Alternative: Expand Hunting Opportunities Where Minimal Conflicts with Other Public and Wildlife Uses Exist (Preferred Alternative); and
- Alternative C: Expand Hunting Opportunities Similar to Alternative B, but with a Modified Turkey Season

For Fox River NWR, two alternatives were considered and are presented in this document:

- Alternative A: Allow areas to be hunted as permitted through the previous hunt plan (Current Management Alternative) and
- Alternative B, Preferred Alternative: Expand deer hunting into newly acquired lands.

Factors considered in the development of alternatives were:

1. Compatibility with the purpose of the Refuge and the mission of the National Wildlife Refuge System.
2. Natural resources of the Refuge.
3. Demands and expectations of public use, with concerns for safety.
4. Issues identified in the Environment Assessment and CCP and comments from partners.
5. Requirements of the Refuge's establishment legislation and guidance provided Service policy and planning guidelines.

## **4.1 Alternatives Eliminated From Further Consideration**

### **4.1.1 No Hunting**

An alternative that would have closed either Horicon or Fox River NWRs to all hunting was not considered for detailed analysis because:

- The CCP identified hunting as a future use after an Environmental Assessment determined a Finding of No Significant Impact (FONSI).
- A No Hunting Alternative would conflict with the 1997 National Wildlife Refuge System Improvement Act, which mandates hunting opportunities be provided when feasible and compatible.
- Hunting is a useful management tool to manage wildlife populations at both Refuges.

### **4.1.2 Opening Hunting to All State Seasons and Regulations**

An alternative that would have opened either Horicon or Fox River NWRs to all statewide hunting seasons and regulations was also not considered for further consideration because:

- Hunting for species with year-round open seasons (such as coyote, opossum, and skunk) would create additional disturbance in sensitive habitats and conflict with biological needs of other wildlife, including protected species, using the Refuge. Additionally, access throughout the year would potentially disturb nesting migratory birds and other sensitive wildlife.
- Hunting during all State seasons available for other species such as waterfowl, and other migratory birds would similarly create additional disturbance and conflict with the Refuge's legislative purpose as an inviolate sanctuary and create conflicts with other priority public uses such as wildlife observation, and environmental education and interpretation.

## **4.2 Actions Common to all Alternatives**

All of the alternatives share some common actions. These actions are current practices or policies that would continue under all alternatives. Some of these actions are required by law or policy, or represent actions that have undergone previous NEPA analysis, public review, agency review, and approval. Others may be administrative actions that do not require public review, but are those that we want to highlight in this public document.

These actions that will continue include the following:

- Keep Horicon NWR closed to waterfowl hunting, except for special hunts (e.g. Learn to Hunt programs or similar).
- Post Refuge-specific hunting and fishing regulations on the Refuge Web site.
- Enhance public understanding of Refuge hunting opportunities by increasing the quality of maps, signs, and wording within brochures and on the Refuge web page.
- Increase visibility of Refuge law enforcement and hunter adherence to federal and state regulations to ensure quality, ethical hunting and encouraging fair chase pursuit.

- Allow access on dikes north of Ledge Road for all hunting seasons. A change from what was noted in the 2007 Horicon and Fox River NWR Comprehensive Conservation Plan.
- Limit access hours to one hour before and after legal hunting hours.
- Enforce currently prohibited activities (see Hunting Map and Brochure, 50CFR).
- Conduct informal survey/interact with hunters and listen to feedback on ways to improve hunt.
- Monitor for signs of habitat damage such as browse lines on the Refuge that would indicate further monitoring of deer population is needed to address negative impacts to habitat.
- In cooperation with the Wisconsin DNR:
  - Evaluate the health of individual animals and herds using standard monitoring techniques and
  - Submit diseased wildlife and/or carcasses for diagnostic and report any signs of diseased wildlife to the USGS National Wildlife Health Center and Wisconsin DNR.

### **4.3 Alternatives Carried Forward for Detailed Analysis: Horicon NWR**

#### **4.3.1 Alternative A – Current Management**

Alternative A is considered the Service’s “Current Management” alternative as it requires no decision or variance from the existing hunting program at Horicon NWR. This alternative describes the current management actions implemented in regards to hunting on the Refuge. The current management is described here to inform the decision making for the other alternatives considered and to characterize potential impacts of those decisions.

Each Refuge has an individual management objective that was developed as part of the CCP (USFWS 2007). The objectives are noted herein along with the management strategies that the Service is currently implementing to achieve the stated objective.

#### ***Current Hunting Objective***

Annually, provide no fewer than 2,000 quality hunting visits per year. Seventy-five percent of hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

#### ***Management Actions***

##### ***Access - Continue to:***

- Annually provide visitors access to hunting opportunities.
- Enforce currently prohibited activities (see Hunting Map and Brochure, 50CFR).
- Conduct hunter and vehicle counts, through staff and volunteers, at all hunting access points to gain an index on hunting pressure and collect additional hunting data.
- Provide “special hunts” consisting of youth and Learn to Hunt program in partnership with State and Ducks Unlimited.
- Allow disabled deer hunt in “special area” (E).
- Open auto tour route only during 9-day deer gun season and any additional statewide antlerless gun hunts (D).
- Provide Youth Pheasant Area in (F) only.

- Keep (D-F) closed except for special hunts.
- Provide no disabled waterfowl hunt on refuge.

***Facilities - Continue to:***

- Maintain 10 blinds and access to blinds for disabled deer hunts.

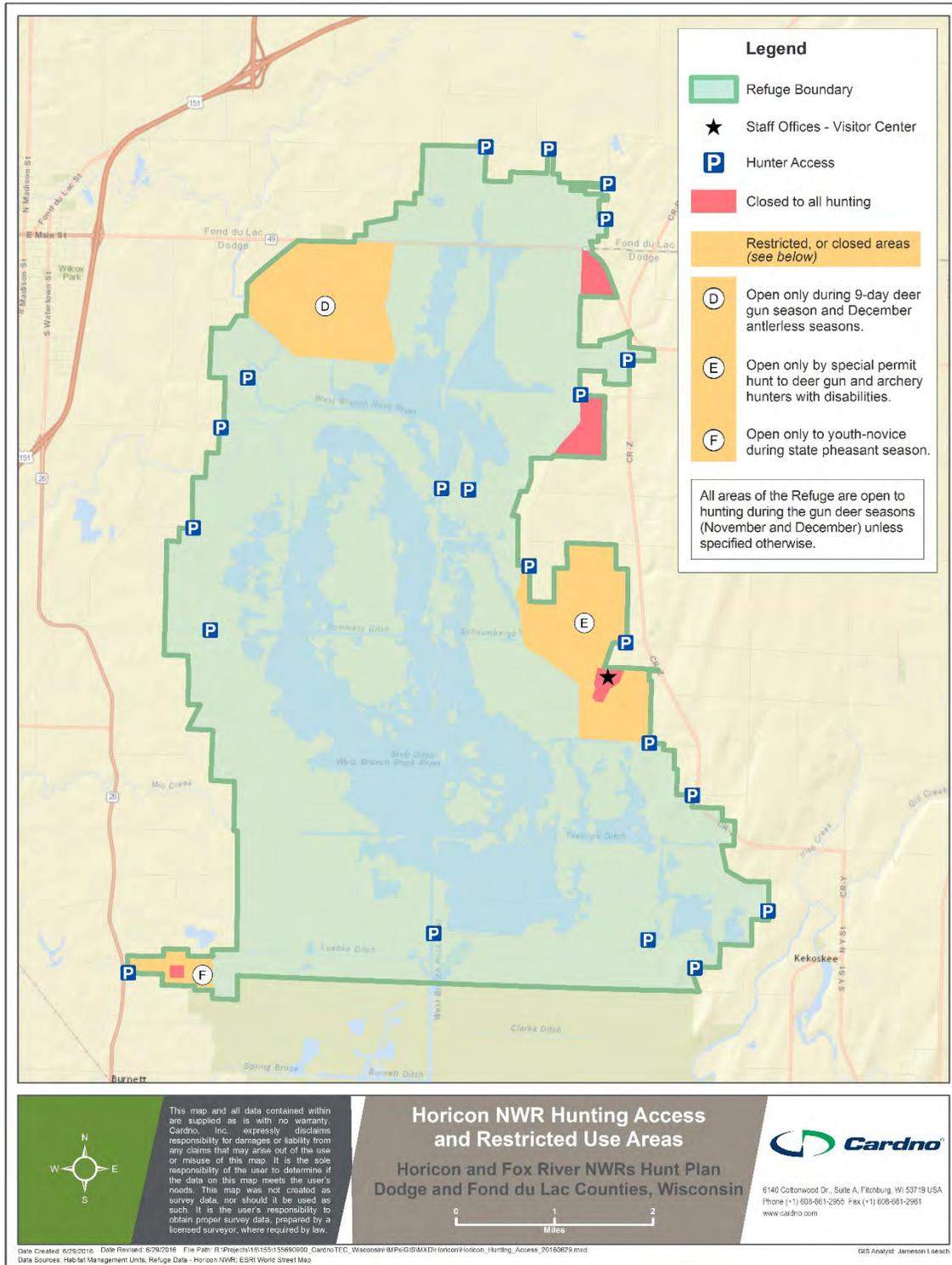
***Communication Resources - Continue to:***

- Maintain refuge website and Facebook page with information regarding refuge hunting regulations and seasons.
- Maintain information kiosks at public parking areas.

***Hunting Seasons***

- Deer Hunting - Continue to:
  - Keep all areas currently open following state regulations.
- Upland Game Hunting - Continue to:
  - Follow seasons for pheasant, gray partridge, rabbit, and squirrel hunting as outlined in the existing hunt plan.
  - Not allow hunting of bobwhite quail, grouse, or crows.
- Migratory Bird Hunting - Continue to:
  - Remain closed to migratory bird hunting except for Learn to Hunt and special programs that limit take of ducks and coots.
  - Remain closed to other migratory birds with seasons in state.
- Turkey Hunting - Continue to:
  - Not allow turkey hunting on the refuge.

Figure 3: Current hunting access at Horicon NWR



### **4.3.2 Alternative B – Preferred Alternative**

In addition to the actions that are common to all alternatives, Alternative B involves expanding the hunting opportunities on the Refuge where minimal conflicts would occur with other public and wildlife uses. Alternative B is considered the Service’s preferred alternative because it expands hunting opportunities where possible without impacting sensitive biological resources or interfering with other priority public uses. Expanding some hunting opportunities on the Refuges also helps promote greater use and builds individuals connections with nature.

#### ***Alternative B Hunting Objective***

Annually, provide no fewer than 2,000 quality hunting visits per year for white-tailed deer, limited upland game including turkey, and waterfowl during special hunt programs. Seventy-five percent of hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

#### ***Management Actions***

##### ***Access***

Same as Alternative A, plus:

- Define and improve public-facing signage and communication regarding regulations to open areas from closed areas (with hunting weapons and game)
- Amend restricted use hunting areas to expand hunting and avoid user conflicts where possible:
  - Areas D [update language to clarify seasons],
  - Area E [expanding closed area due to new trail, adjacent to visitor’s center from 45 to 84 acres],
  - Area F [convert to standard hunting regulations] on the Refuge hunting brochure map). Changes will be reflected in the Refuge Hunt Plan.
- Expand volunteer involvement in hunter and vehicle counts
- Formally open 86 acres, including two parcels acquired since 2006 to general hunting requirements
- Evaluate and Update “special waterfowl hunts” to include programs such as Learn to Hunt (including first-time adults), disabled hunts, and other specially designated programs.
- Evaluate adding a disabled turkey hunt to Area (E).

##### ***Facilities***

- Same as Alternative A, but consider additional blinds as public interest and funding allow.
- Adjust hunting/boundary signs to reflect changes in finalized Hunt Plan (e.g. Area F and disabled hunt boundary near visitor center).

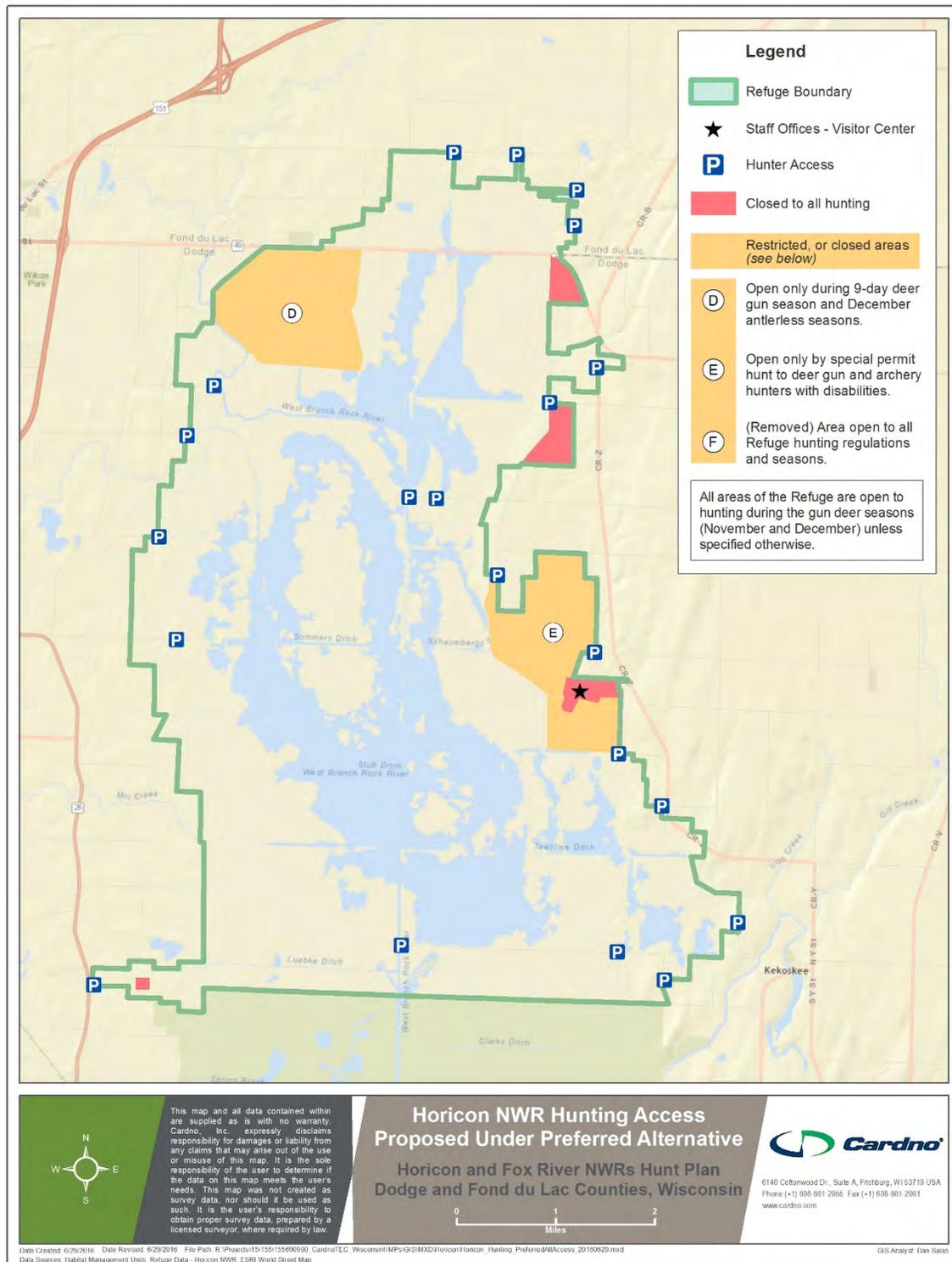
##### ***Communication Resources***

- Replace or install new information boards at hunter access points. Develop area regulation signs for information boards with updated information hunting access and regulations.
- Update refuge hunting map/brochure with the most current regulations and access.

### ***Hunting Seasons***

- Upland Game Hunting
  - Expand refuge-wide general regulations to include Zuelke 86 acres and current youth pheasant area (Area F).
- Migratory Bird Hunting
  - Add all waterfowl as defined by Wisconsin Migratory Bird Regulations to “special hunts,” following state season and bag limits.
- Turkey Hunting
  - Add turkey hunting under state regulations/seasons, with option to reevaluate after data from initial seasons is reviewed and a follow up assessment of impacts or conflicts is completed based on actual use.
- Deer Hunting
  - Same as Alternative A, plus add former youth pheasant area and Zuelke to deer hunting general regulations area.

Figure 4: Preferred alternative hunting zone map.



### **4.3.3 Alternative C: Expand with Modified Turkey Season**

In addition to the actions that are common to all alternatives, Alternative C also involves expanding hunting opportunities similar to Alternative B, but proposes a modified turkey season to include a spring-only turkey hunting season, with the option to reevaluate after data from initial seasons are reviewed. Aside from the modified turkey season, all other strategies would remain consistent with Alternative B.

## **4.4 Alternatives Carried Forward for Detailed Analysis: Fox River NWR**

### **4.4.1 Alternative A. Current Management (No-action Alternative)**

Alternative A is considered the Service's "Current Management" alternative as it requires no decision or variance from the existing hunting program at Fox River NWR. This alternative describes the current management actions implemented in regards to hunting on the Refuge. The current management is described here to inform the decision making for the other alternatives considered and to characterize potential impacts of those decisions.

Each Refuge has an individual management objective that was developed as part of the CCP (USFWS 2007). The objectives are noted herein along with the management strategies that the Service is currently implementing to achieve the stated objective.

#### ***Objective***

Annually, provide no fewer than 100 quality hunting visits per year. Seventy-five percent of hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

#### ***Management Actions***

##### **Access - Continue to:**

- Maintain restricted access to all public uses, except for deer hunting seasons.
- Access restricted to one hour before through one hour after legal hunting hours.

##### **Facilities - Continue to:**

- Post existing boundaries.

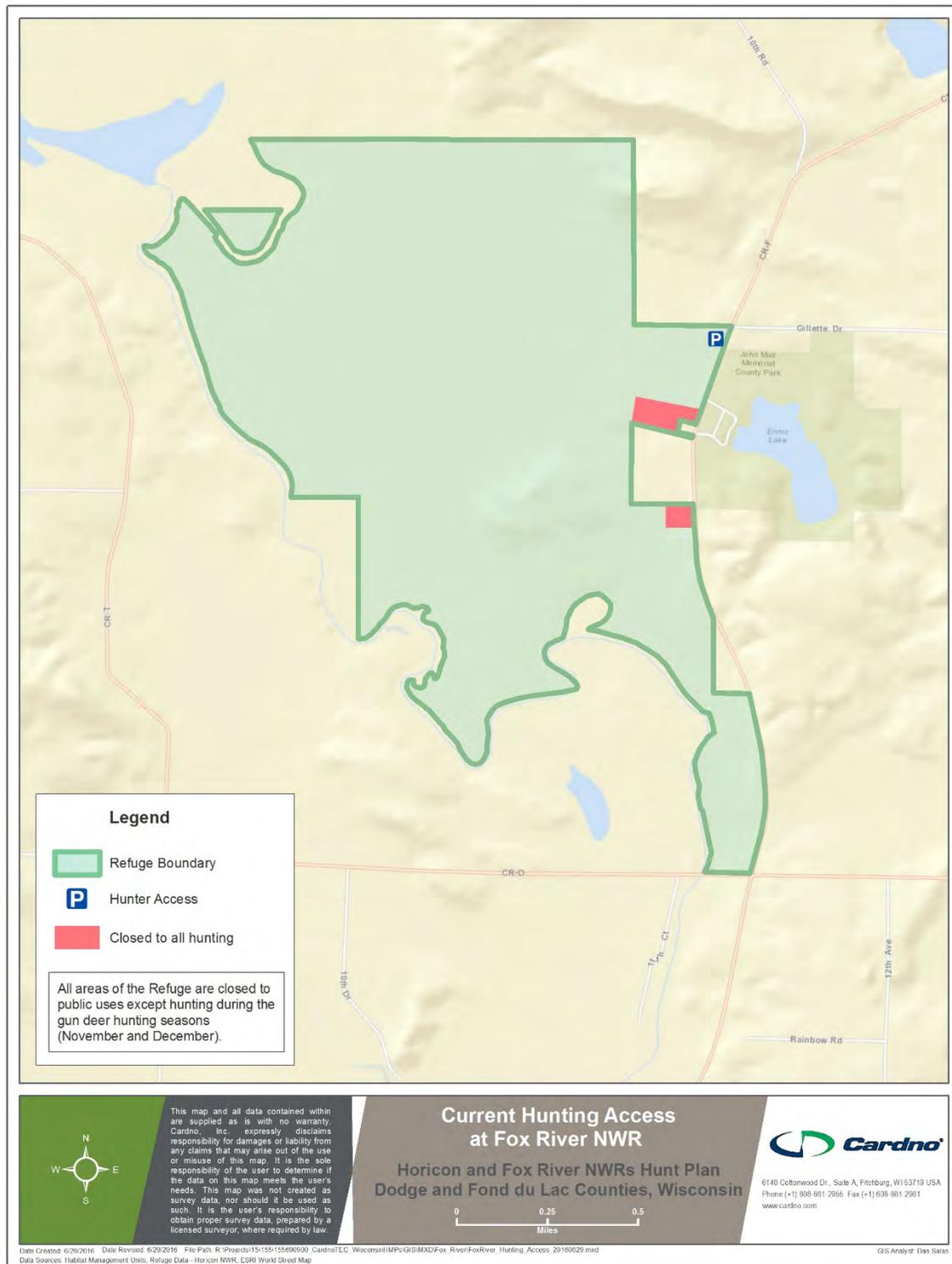
##### **Communication Resources - Continue to:**

- Maintain refuge website and Facebook page with information regarding refuge hunting regulations and seasons.
- Maintain information kiosk at public parking area.

##### **Hunting Seasons - Continue to:**

- Use regulated hunting every fall during all state deer hunting seasons, including archery/crossbow, gun, muzzleloader, and special hunts.

**Figure 4. Existing access for hunting at Fox River NWR**



#### **4.4.2 Alternative B – Preferred Alternative**

In addition to the actions that are common to all alternatives, Alternative B involves expanding the hunting opportunities on the Refuge into newly acquired tracts.

##### ***Objective***

Annually, provide no less than 100 quality deer hunting visits per year. Seventy-five percent of hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

##### ***Management Actions***

###### **Access**

Same as Alternative A, plus:

- Open new land acquisitions Owens (55 acres) and McCreath (25 total) properties to deer hunting following state regulations.

###### **Facilities**

- Maintain existing boundary signs

###### **Communication Resources**

- Continue to update and maintain web information links with new information.
- Update refuge hunting map/brochure with the most current regulations and access.

###### **Hunting Seasons**

- Same as Alternative A, plus:
  - Open the Owens and McReath properties to deer hunting.

#### **4.5 Alternatives Action Tables**

Table 1 below summarizes the actions that are anticipated under each alternative for Horicon NWR. Table 2 summarizes the actions that are anticipated under both alternatives for Fox River NWR. Detailed discussion of the environmental impacts of each alternative for each refuge can be found in Section 4. Some of the issues carried into the impact assessment are described in more detail in Section 4.

**Table 1: Alternative Action Table: Horicon NWR**

	Alternative A (Current Management Alternative)	Alternative B (Preferred Alternative)	Alternative C
Species that will be hunted	Pheasant, gray partridge, rabbit, squirrel, deer, limited take of ducks and coots	Same as Alternative A, plus includes turkey and all waterfowl in “special hunts.”	Same as Alternative B but limits turkey hunt to spring only.
Compatible with Refuge Goals and Purpose	Yes	Yes	Yes
Provides for Other Priority Public Uses	Yes	Yes	Yes

**Table 2: Alternative Action Table: Fox River NWR**

	Alternative A (Current Management Alternative)	Alternative B (Preferred Alternative)
Species that will be hunted	Deer	Same as Alternative A, plus opens the Owens and McReath properties to deer hunting
Compatible with Refuge Goals and Purpose	Yes	Yes
Provides for Other Priority Public Uses	Yes	Yes

## 5 Environmental Consequences: Horicon NWR

This chapter describes the foreseeable environmental consequences of implementing the three management alternatives. When detailed information is available, a scientific and analytic comparison between alternatives and their anticipated consequences is presented, which is described as “impacts” or “effects.” When detailed information is not available, those comparisons are based on the professional judgment and experience of Refuge staff and Service and State biologists.

### 5.1 Alternative A – Current Management

This action would utilize the parameters of hunting established by current regulations. Species hunted would be those allowed by the current regulations and in areas currently open to hunting.

#### 5.1.1 Habitat Impacts

Off trail use for hunting is allowed at Horicon NWR, but currently only a small number of visitors engage in these activities, and do so infrequently, primarily in late fall. Depending on the site conditions and extent of access, this could potentially result in higher levels of vegetation trampling, soil disturbance, and erosion, which in turn could potentially affect Refuge habitat quality by inhibiting local plant growth and increasing potential for erosion. This added access is expected to still be localized, infrequent, and primarily at a time of year when impacts to habitat are minimized.

We anticipate that short-term disturbances to vegetation would be offset by the increased awareness about the importance of native vegetation gained by Refuge visitors as part of interpretive and education programming and displays. No significant impacts are anticipated. Service staff will monitor hunting and potential habitat impacts as part of their law enforcement activities and monitoring.

### **5.1.2 Biological Impacts**

Hunters can cause some disturbance to wildlife, but the disturbance is minor and short term. Other wildlife not being harvested (including birds, mammals, reptiles, amphibians and invertebrates) may be temporarily disturbed by hunters approaching an animal's resting site and flushing or moving the wildlife as the animals try to avoid human contact. No long-term effects are expected for non-hunted species, including birds, mammals, reptiles and amphibians, because hunting does not occur during breeding season.

Because all of the hunting occurs in the fall and winter, nesting animals are not disturbed. During the deer gun hunting seasons, which attracts the largest number of hunters, most of the migrating waterfowl have left the Refuge. The exception to this is when the State offers a special gun hunt in October. Disturbance to waterfowl can be alleviated by closing sensitive areas on the Refuge to this particular hunt.

Another biological impact is the killing of animals, which is a negative impact to the individual animal. However, the harvesting of animals for hunting also creates positive benefits by promoting people's connection with nature, helping the Refuge in achieving its habitat management objectives, and maintaining quality habitat for other wildlife.

Under all alternatives, we would continue to offer opportunities for visitors to engage in hunting. Visitors who use the available infrastructure, including trails and parking areas, gain an improved understanding and appreciation for the numerous species that depend on the Refuge for breeding, foraging, and resting. Additionally, visitors would be more aware of biological facts upon which Service management is based and why these species are important to people and other wildlife. This outcome would help increase public support for Refuge management and habitat protection, as well as the Service and the Refuge System.

### **5.1.3 Federally Protected, Threatened, and Endangered Species**

No impacts to federally protected, threatened, or endangered species is expected due to hunting at Horicon NWR. The location and timing of hunting activities is outside of the locations used and timing needed for peregrine falcon and bald eagle nesting.

### **5.1.4 Historic Properties and Cultural Resources**

This alternative will result in no additional ground disturbance or disturbance to standing structures, and it would have no effect on any historic properties. Activities that might cause an effect to a historic property would be subject to a case by case Section 106 review.

### 5.1.5 Cumulative Impact Analysis of the Proposed Action

#### ***Anticipated Direct and Indirect Impact on Wildlife Species***

This alternative would have no additional effect on wildlife populations. Animal populations would be managed using the current hunting seasons and locations.

#### **Hunted Resident Wildlife**

*Small Upland Game (pheasant, gray partridge, rabbit, and squirrel)*

No harvest numbers are available from Wisconsin DNR for small game such as pheasant, gray partridge, rabbit, or squirrel.

The Refuge currently provides approximately 1,865 acres of upland grassland, 60 acres of oak savanna, and 235 acres of upland forests at Horicon NWR. The Refuge does not perform any management practices specifically for small game, although they may benefit from some of the habitat management practices and habitat restoration efforts undertaken on the Refuge.

The number of small game hunting visits is estimated to be very low. The Refuge requires non-toxic shot for upland game hunting. Current Refuge small game hunting regulations indicate that small game hunting as described under Alternatives A, B, and C will have minimal impacts on the regional populations. At this time no efforts exist to count the number of small game hunters or to estimate their success rate.

#### *Waterfowl, Marsh Birds, and Other Migratory Birds*

Migratory game birds are those bird species so designated in conventions between the United States and several foreign nations for the protection and management of these birds. Under the Migratory Bird Treaty Act (16 U.S.C.703-712), the Secretary of the Interior is authorized to determine when "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any ... bird, or any part, nest, or egg" of migratory game birds can take place and to adopt regulations for this purpose. These regulations are written after giving due regard to "the zones of temperature and to the distribution, abundance, economic value, breeding habits and times and lines of migratory flight of such birds and are updated annually" (16 U.S.C. 704(a)). This responsibility has been delegated to the U.S. Fish and Wildlife Service as the lead federal agency for managing and conserving migratory birds in the United States. Acknowledging regional differences in hunting conditions, the Service has administratively divided the nation into four Flyways for the primary purpose of managing migratory game birds. Each Flyway (Atlantic, Mississippi, Central, and Pacific) has a Flyway Council, a formal organization generally composed of one member from each State and Province in that Flyway. Horicon NWR is located in the Mississippi Flyway.

Because the Service is required to take an abundance of migratory birds and other factors into consideration, the Service undertakes a number of surveys throughout the year in conjunction with the Canadian Wildlife Service, State and Provincial wildlife-management agencies, and others. To determine the appropriate framework for each species, the Service considers factors such as population size and trend, geographical distribution, annual breeding effort, the condition of breeding and wintering habitat, the number of hunters, and the anticipated harvest. After frameworks are established for season lengths, bag limits, and areas for migratory game bird hunting, migratory game bird management becomes a cooperative effort of State and Federal

Governments. After Service establishment of final frameworks for hunting seasons, the States may select season dates, bag limits, and other regulatory options for the hunting seasons. States may always be more conservative in their selections than the Federal frameworks but never more liberal. Season dates and bag limits for National Wildlife Refuges open to hunting are never longer or larger than the State regulations. In fact, based upon the findings of an environmental assessment developed when a National Wildlife Refuge opens a new hunting activity, season dates and bag limits may be more restrictive than the State allows.

Waterfowl hunting at Horicon NWR is currently limited to coots and ducks harvested only during a special Learn to Hunt program. Otherwise, the Refuge is closed to waterfowl hunting as an inviolate sanctuary during breeding and migration. Therefore, no adverse impacts to waterfowl or other migratory populations on Refuge are expected.

#### *Big Game (white-tailed deer)*

Wisconsin DNR has tracked total deer harvested Statewide since 1966 (WDNR 2015a). Each year, hundreds of thousands of deer are hunted across the State. Each year, the number of animals that can be harvested without adversely affecting the population are monitored. Since 1977, Statewide deer harvest totals during the gun season alone have consistently remained over 600,000 annually. The few thousand deer harvested in Dodge and Fond du Lac counties have a minimal contribution to this number. This minimal contribution, plus the number of deer harvested annually for nearly four decades, indicates the deer population is being maintained at a sustainable level.

The Refuge does not perform any management practices specifically for white-tailed deer, although they may benefit from some of the habitat management practices and habitat restoration efforts undertaken on the Refuge. Browse by white-tailed deer is a management concern on limited areas of the Refuge as it impacts forest developmental processes and vegetation composition and species diversity. This, in turn, can affect entire ecosystems and habitats for species such as migratory waterfowl or grassland bird species. Current Refuge deer hunting regulations and low hunter harvest and density indicate that deer hunting as described under Alternatives A, B, or C will have minimal impacts on the regional populations.

#### *Turkey*

Wisconsin DNR tracked 40,975 turkeys harvested during the spring hunting season in 2015 (WDNR 2015). Despite increasing permits being issued for turkey hunting, the total harvest has maintained around 40,000 for the past 15 years (WDNR 2015b). Horicon NWR is currently closed to turkey hunting. Therefore, no impact to the local turkey population is expected except for hunting on private property from adjacent property owners.

#### *Furbearers (coyote, raccoon, skunk)*

The Refuge is currently closed to all furbearer hunting although some are harvested through the Refuge's trapping program. Trapping is addressed outside of this plan in the Refuge Furbearer Management Plan.

#### **Access Impacts on Wildlife**

In general, the presence of humans disturbs most wildlife, which typically results in a temporary displacement without long-term effects on individuals or populations. Disturbance varies by

wildlife species involved and the type, level, frequency, duration, and the time of year the activities occur. Disturbance can cause shifts in habitat use, abandonment of habitat, and increased energy demands on affected wildlife (Knight and Cole 1991).

In some cases there is a clear link between the extent of disturbance and either the survival or reproductive success of individuals (e.g. Schultz and Stock 1993), but in many cases disturbance acts in a more subtle way, by reducing access to resources such as food supplies or nesting sites (Gill et al. 1996). The potential for any animal to flee its nest generally increases when the perceived threat approaches more directly (Burger and Gochfeld 1981, 1990, Cooper 1997, 1998). Brief absence by parent birds can lead to missed feedings, predation on eggs or young, or exposure to overheating, chilling, or dehydration of eggs or young (Suter and Jones 1981). Species like the ferruginous hawks tend to desert their nests if adults are exposed to human activity during incubation (White and Thurow 1985).

Bird flight in response to disturbance can lower reproductive success by exposing individuals and nests to predators. Wildlife disturbance may be compounded by seasonal needs. For example, some species, like warblers, could be negatively affected by disturbance associated with bird watching particularly during the breeding season. When visitors approach nests too closely, they often cause the adult bird to flush exposing the eggs to weather conditions or predators (Banks and Bryant 2007; Miller et al. 2001). Overall, effects of hunting access should not be significant, because both refuges already experience minimal public use in off-trail use in areas open to hunting. In addition, the time of year at which hunting occurs generally avoids disturbance to wildlife and their breeding periods.

### ***Anticipated Direct and Indirect Impact on Refuge Programs, Facilities and Cultural Resources***

#### **Other Refuge Wildlife-Dependent Recreation**

Hunting is a priority public use for the Service and a way for the public to gain an increased awareness of Horicon NWR and the National Wildlife Refuge System. However, surveys conducted at Horicon NWR in the past (Sexton et al. 2012) have shown that hunting is a small proportion to all public use at the Refuge. In 2010 and 2011 surveys were conducted at the Refuge. A total of 334 visitors agreed to participate in the survey during the two sampling periods at Horicon NWR. Of this total, 6% of respondents had participated in big game hunting and 5% of respondents participated in upland/small-game hunting. By comparison, 81% of respondents had participated in bird watching and 79% in wildlife observation.

Visitor satisfaction was evaluated as part of Horicon NWR's data included in the National Wildlife Refuge Visitor Survey 2010/2011 (Sexton et al. 2012). This report provides a summary of surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Horicon NWR. The results of this survey found that all refuge services and facilities fell in the "Keep Up the Good Work" quadrant, which is the maximum satisfaction level possible in the survey. Nearly all refuge recreational opportunities fell in the "Keep Up the Good Work" quadrant except fishing and hunting opportunities, which fell into the "Look Closer" quadrant. This means that users are generally satisfied with opportunities at the Refuge, but that the importance of the activity to some users may require additional consideration for future opportunities.

Because of the relatively low participation rate in hunting, the potential for conflict with other uses is minimized. Therefore, the effects of hunting access on other public uses should be minimal, because Horicon NWR already experiences minimal public use in off-trail use in areas open to hunting.

### **Refuge Facilities**

No significant impacts to Refuge facilities (roads, parking lots, trails) will occur with this alternative. Under the Current Management Alternative, approximately 21,808 acres would remain open to hunting (those approved through the 2007 CCP and EA and the current 50 CFR). As noted, survey results from Sexton et al. (2012) found that all refuge facilities fell in the “Keep Up the Good Work” quadrant, which is the maximum satisfaction level possible in the survey.

Maintenance or improvement of existing roads and parking areas will cause minimal short term impacts to localized soils and may cause some temporary wildlife disturbance or temporary limitations in public use.

### **Cultural Resources**

The Current Management Alternative will not have any additional impacts to cultural resources. Activities that might cause an effect to a historic property would be subject to a case-by-case Section 106 review.

### ***Anticipated Direct and Indirect Impact on Refuge Environment and Community***

The Current Management Alternative will have little if any impact on soils, air quality, water quality or solitude. Vegetation, as stated above, could be minimally affected in limited areas by herbivore activity as well as localized trampling and compaction due to hunter access.

### ***Other Past, Present, Proposed and Reasonably Foreseeable Hunts and Anticipated Impacts***

The Current Management Alternative would have no additional anticipated impacts from hunting.

### ***Anticipated Impacts If Individual Hunts are Allowed to Accumulate***

National Wildlife Refuges, including Horicon NWR, conduct hunting programs within the framework of State and Federal regulations. By maintaining hunting regulations that are consistent with or more restrictive than the State, individual Refuges ensure that they are maintaining seasons which are supported by management on a regional basis.

## **5.1.6 Environmental Justice**

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment and to provide minority and low-income communities’ access to public information and participation in matters relating to human

health or the environment. This assessment has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. None of the alternatives will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

Alternative A will not disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low income populations.

Hunting opportunities proposed on Horicon NWR already exist on State, Federal and other public lands in the area where the Refuge is located. The Refuge Recreation Act of 1962 (16 U.S.C. 460K) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668-ddee) provide authorization for hunting on National Wildlife Refuges. The effects of hunting on Refuges have been examined in several environmental review documents, including the Final Environmental Impact Statement on the Operation of the National Wildlife Refuge System (1976), Recommendations on the Management of the National Wildlife Refuge System (1978) and the Draft Environmental Impact Statement on the Management of the National Wildlife Refuges (1988). Nothing in the establishing authority for Horicon NWR precludes hunting on the Refuge.

## **5.2 Alternative B – Proposed Hunt Plan (Preferred Alternative)**

Alternative B involves expanding the hunting opportunities in addition to the actions that are common to all alternatives where minimal conflicts would occur with other public and wildlife uses. Alternative B is considered the Service’s preferred alternative because it expands hunting opportunities where possible to do without impacting sensitive biological resources or interfering with other priority public uses. Expanding some hunting opportunities on the Refuges also helps promote greater usership and builds individuals connections with nature.

### **5.2.1 Habitat Impacts**

Habitat impacts would be similar to those described previously under Alternative A. The addition of turkey hunting, plus expansion of hunting into 86 acres of newly acquired lands, would likely slightly increase the amount and frequency of access compared to Alternative A. For the purposes of evaluating the impacts of a turkey hunt within this EA, the Service defines “slight increase in hunting participation” as a few dozen hunting visits or less annually spread across the upland habitats of the Refuge.

Depending on the site conditions and extent of access, this could potentially result in higher levels of vegetation trampling, soil disturbance, and erosion, which in turn could potentially affect Refuge habitat quality by inhibiting local plant growth, increasing potential for erosion. This added access is expected to still be localized, infrequent, and primarily at a time of year when impacts to habitat are minimized. No significant impacts are anticipated.

### **5.2.2 Biological Impacts**

Similar to Alternative A, other wildlife not being harvested (including birds, mammals, reptiles, amphibians, and invertebrates) may be temporarily disturbed by hunters approaching an animal’s site and flushing or moving the wildlife as the animals try to avoid human contact. No long-term

effects are expected for non-hunted species, including birds, mammals, reptiles and amphibians, since hunting largely occurs outside of the breeding season of species at the Refuge. However, a new spring turkey hunt season may potentially conflict with breeding use by migratory birds. Access for turkey hunting would occur exclusively within the upland habitats of the Refuge, thereby avoiding the most biologically sensitive areas of the Refuge (e.g. the marsh). At this time, the Service envisions that participation in the spring turkey hunt season will be minimal due to limited suitable habitat on the Refuge available to turkeys. If this low level of participation and infrequent use is consistent with Service expectations, Refuge staff expect negligible conflicts with breeding birds at Horicon NWR. The Refuge staff will evaluate participation in the turkey hunt seasons to verify participation levels, where the use is occurring, and ensure that potential conflicts with breeding birds are avoided. Future closures may be considered if potential conflicts with breeding birds becomes a habitat management concern.

The harvest of Refuge wildlife species will be in accordance with Refuge-specific regulations, Federal regulations, and Wisconsin bag limits. Other wildlife not being harvested will be disturbed by hunters approaching an animal's site and flushing or moving the wildlife as the animals try to avoid human contact. This disturbance will be similar to the disturbance non-hunted animals experience on adjacent Refuge lands by non-consumptive users and will be minimal and temporary in nature.

### **5.2.3 Federally Protected, Threatened, and Endangered Species**

For the bald eagle and peregrine falcon, the actions in Alternative B and this EA are considered not likely to adversely affect federally protected, threatened, and endangered species. All hunting activities and seasons currently avoid known nest site locations and breeding periods. If new nest sites are identified, the Refuge will take action accordingly to temporarily close access near nest sites to avoid impacts to these species.

### **5.2.4 Historic Properties and Cultural Resources**

Similar to Alternative A, this alternative will result in no additional ground disturbance or disturbance to standing structures, and it would have no effect on any historic properties. Activities that might cause an effect to a historic property would be subject to a case-by-case Section 106 review.

### **5.2.5 Cumulative Impact Analysis of the Proposed Action**

#### ***Anticipated Direct and Indirect Impact on Wildlife Species***

##### **Hunted Impacts on Wildlife**

For all game hunted at Horicon NWR, the Refuge's hunt program is consistent with Federal and State regulations for annual harvest levels and seasons by species. For example, waterfowl regulations are set by the Service for each state based on what harvest levels can be sustained for a species without adversely affecting its overall population. As such, hunting results in individual losses, but the projected cumulative harvest would not jeopardize the viability of any harvested species' population. Some disturbance to non-target wildlife species may occur; however, those impacts should be minimal, because hunting pressure is low and occurs outside the breeding season.

*Small Upland Game (pheasant, gray partridge, rabbit, and squirrel)*

Direct impacts to hunted small upland game would be similar to Alternative A. Opportunities for small game hunting would be expanded to the newly acquired 86 acres at Horicon NWR and in the area formerly set aside as a youth pheasant hunting only area (See Area F on the Refuge hunting map). This would improve access for those users interested in hunting small game. Historically, there has been minimal interest in small game hunting at the Refuge. Therefore, we do not anticipate this expanded access to cause any significant impact on small upland game beyond the current condition.

*Waterfowl, Marsh Birds, and Other Migratory Birds*

Protections afforded to waterfowl, marsh birds, and other migratory birds would be similar to Alternative A. Given the Refuge's original purpose as an inviolate sanctuary and the opportunity for waterfowl hunting on nearby State and private lands, the Refuge intends to remain a sanctuary for migratory birds, including waterfowl.

Under Alternative B, waterfowl hunting at Horicon NWR would still be limited to special Learn to Hunt programs. Currently, the Learn to Hunt programs are only authorized to take ducks and coots. Under Alternative B, the Refuge would allow the take of any waterfowl. No adverse impacts to waterfowl or other migratory populations on Refuge are expected due to the infrequent and limited opportunity associated with the Learn to Hunt programs offered.

*Big Game (white-tailed deer)*

Deer hunting at Horicon NWR would be consistent with the locations and seasons currently allowed under Alternative A. In addition to the current opportunities, the Refuge would expand deer hunting opportunities to include the newly acquired 86 acres, plus allow deer hunting in the area formerly set aside as a youth pheasant hunting only area (See Area F on the Refuge hunting map).

These added areas would expand the opportunities available to users interested in deer hunting at Horicon NWR. By expanding access to these areas, the Refuge helps achieve its habitat management objectives in these habitats. The expanded opportunities in these areas would likely result in the harvest of a few more additional deer each year at the Refuge. Compared to the overall deer harvest in Dodge and Fond du Lac counties, the direct impacts associated with this expansion are minimal.

*Turkey*

Alternative B would allow turkey hunting on the Refuge according to State regulations, seasons, and bag limits. Turkey hunting at the Refuge would be allowed in upland areas excluding those already posted as closed for hunting. Turkey hunting has increased on private lands surrounding the Refuge as turkey populations have grown in recent decades. Expanding access for turkey hunting at the Refuge affords other members of the public an opportunity to hunt where they might not otherwise have access to private lands.

The Service anticipates only a slight increase in visitation directly associated to turkey hunting. As a result, associated impacts on resident turkey are likely to result in additional take of turkey. Wisconsin DNR estimates an average success rate of 6.8% for turkey hunting Statewide (harvest

compared to permits issued, WDNR 2015c). Due to the uncertainty of actual participation, combined with the low success rate, the slight increase in hunting participation spread across the upland habitats of the Refuge, is likely to only have a minimal impact on the local turkey population. The Refuge will evaluate interest and participation levels in the activity during the turkey season to ensure impacts are avoided or minimized.

*Furbearers (coyote, raccoon, skunk)*

The Refuge would remain closed to all furbearer hunting. Harvesting of furbearers will be limited to those harvested through the Refuge's trapping program under the existing Refuge Furbearer Management Plan.

**Access Impacts on Wildlife**

Compared to Alternative A, this alternative would increase the amount of off-trail access for turkey hunting during the early spring (March through May). Allowing additional access in these upland areas may potentially increase disturbance to wildlife associated with human interaction. However, the Refuge anticipates only a slight increase in users accessing specifically for turkey hunting. Access for turkey hunting will also be limited to the upland areas such as prairies, forest, and savanna, which avoids impacts to the majority of migratory birds passing through the Refuge during this timeframe. As noted, the slight increase anticipated would consist of a few dozen hunting visits or less annually spread across the 2,472 acres of upland habitat. Given the infrequent and short duration of this activity, we do not anticipate any substantial or long-term impacts to wildlife.

***Anticipated Direct and Indirect Impact on Refuge Programs, Facilities and Cultural Resources***

**Other Refuge Wildlife-Dependent Recreation**

Similar to Alternative A, the Refuge does not experience any repeated or reoccurring conflicting uses. The relatively low participation rate in hunting, along with the time of year at which the activity is engaged in, help to avoid conflicts between users. With the addition of turkey hunting, the Service anticipates a slight increase in hunting use resulting in a few dozen more participants annually periodically spread throughout the Refuge's 2,472 acres of upland habitat.

At this time, the Service envisions that participation in the spring turkey hunt season will be minimal due to the limited suitable habitat available to turkey on the Refuge. If this low level of participation and infrequent use is consistent with Service expectations, Refuge staff expect negligible conflicts with other public uses at Horicon NWR. The Refuge staff will evaluate participation in the turkey hunt seasons to verify participation levels, where the use is occurring, and ensure that potential conflicts with other users are avoided. Future closures may be considered if potential conflicts with other public uses becomes a habitat management concern.

**Refuge Facilities**

Similar to Alternative A, the Refuge does not anticipate construction of additional facilities associated with the proposed Hunt Plan. The Service also does not expect a substantial increase in public use as a result of the proposed Hunt Plan. As noted, survey results from Sexton et al. (2012) found that all refuge facilities fell in the "Keep Up the Good Work" quadrant, which is the maximum satisfaction level possible in the survey.

### **Cultural Resources**

Alternative B will not have any additional impacts to cultural resources. Activities that might cause an effect to a historic property would be subject to a case-by-case Section 106 review.

### ***Anticipated Direct and Indirect Impact on Refuge Environment and Community***

Alternative B will have little if any impact on soils, air quality, water quality or solitude. Vegetation, as stated note previously, could be minimally affected in limited areas by herbivore activity as well as localized trampling and compaction due to hunter access.

### ***Other Past, Present, Proposed and Reasonably Foreseeable Hunts and Anticipated Impacts***

No other hunts are planned or anticipated at this time. Additional hunts and seasons would be considered in a future revision to the Refuge hunt plan.

### ***Anticipated Impacts If Individual Hunts are Allowed to Accumulate***

Similar to Alternative A. National Wildlife Refuges, including Horicon NWR, conduct hunting programs within the framework of State and Federal regulations. By maintaining hunting regulations that are consistent with or more restrictive than the State, individual Refuges ensure that they are maintaining seasons which are supported by management on a regional basis.

## **5.2.6 Environmental Justice**

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment and to provide minority and low-income communities’ access to public information and participation in matters relating to human health or the environment. This assessment has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. None of the alternatives will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

Alternative B will not disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low income populations.

Hunting opportunities proposed on Horicon NWR already exist on State, Federal and other public lands in the area where the Refuge is located. The Refuge Recreation Act of 1962 (16 U.S.C. 460K) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668-ddee) provide authorization for hunting on National Wildlife Refuges. The effects of hunting on Refuges have been examined in several environmental review documents, including the Final Environmental Impact Statement on the Operation of the National Wildlife Refuge System (1976), Recommendations on the Management of the National Wildlife Refuge System (1978) and the Draft Environmental Impact Statement on the Management of the National

Wildlife Refuges (1988). Nothing in the establishing authority for Horicon NWR precludes hunting on the Refuge.

### **5.3 Alternative C – Other Hunt Plan Actions Considered**

Alternative C involves expanding the hunting opportunities outlined previously in Alternative B. In contrast, the only difference between Alternative B and C is that under Alternative C, the Refuge would allow only a modified turkey hunt, rather than follow the full State season.

Current State seasons for turkey hunting include a spring season (April through May) and fall season (September through December). Under Alternative C, the Refuge would be limited only to a spring turkey hunt (April through May).

#### **5.3.1 Habitat Impacts**

Same as Alternative B, except that a turkey season limited to spring only would result in slightly less potential for impact. However, the Service believes the difference in potential habitat impacts between Alternatives B and C are negligible due to the low number of individuals likely involved in this activity.

#### **5.3.2 Biological Impacts**

Same as Alternative B, except that that a turkey season limited to spring only would result in slightly less potential for impact to migratory birds. In general, the presence of humans disturbs most wildlife, which typically results in a temporary displacement without long-term effects on individuals or populations. Disturbance varies by wildlife species involved and the type, level, frequency, duration and the time of year activities occur. Disturbance to wildlife can cause shifts in habitat use, abandonment of habitat, and increased energy demands on affected wildlife (Knight and Cole 1991). By limiting hunting to the spring only, disturbance impacts to migratory birds using the Refuge for stopover rest and foraging in the fall and early winter (September through December) would be avoided. However, the Service believes the difference in potential habitat impacts between Alternatives B and C are negligible due to the low number of individuals likely involved in this activity as well as the limited locations in which this activity would likely occur at the Refuge.

#### **5.3.3 Federally Protected, Threatened, and Endangered Species**

Same as Alternative B.

#### **5.3.4 Historic Properties and Cultural Resources**

Same as Alternative B.

#### **5.3.5 Cumulative Impact Analysis of the Proposed Action**

##### ***Anticipated Direct and Indirect Impact on Wildlife Species***

Same as Alternative B, except that a turkey season limited to spring only would result in slightly less potential for impact. However, the Service believes the difference in potential direct and indirect impacts on wildlife between Alternatives B and C are negligible due to the low number of individuals likely involved in this activity.

***Anticipated Direct and Indirect Impact on Refuge Programs, Facilities and Cultural Resources***

Same as Alternative B, except the modified hunt season would potentially add confusion regarding allowable hunting seasons on the Refuge. Allowing a modified season also is less desirable according to Service policy. Allowing a modified season (compared to the State season) would require additional communications and law enforcement to ensure proper use.

***Other Refuge Wildlife-Dependent Recreation***

Same as Alternative B, except that a turkey season limited to spring only would result in slightly less potential for impact. However, the Service believes the difference in potential recreation impacts between Alternatives B and C are negligible due to the low number of individuals likely involved in this activity. Alternative B adheres to the State seasons, which includes both a spring and fall turkey season. Alternative C would only allow a spring season. However, the fall turkey season traditionally has less participation than the spring hunt. Additionally, the latter portion of the fall turkey season coincides with deer hunting seasons. As a result, users engaged in hunting are already participating in the activity on the Refuge.

At this time, the Service envisions that participation in the spring turkey hunt season will be minimal, which is consistent with expectations made in Alternative B. If this low level of participation and infrequent use is consistent with Service expectations, Refuge staff expect negligible conflicts with other public uses at Horicon NWR. The Refuge staff will evaluate participation in the turkey hunt seasons to verify participation levels, where the use is occurring, and ensure that potential conflicts with other users are avoided. Future closures may be considered if potential conflicts with other public uses becomes a habitat management concern

***Refuge Facilities***

Same as Alternative B.

***Cultural Resources***

Same as Alternative B.

***Anticipated Direct and Indirect Impact on Refuge Environment and Community***

Same as Alternative B.

***Other Past, Present, Proposed and Reasonably Foreseeable Hunts and Anticipated Impacts***

Same as Alternative B.

***Anticipated Impacts If Individual Hunts are Allowed to Accumulate***

Same as Alternative B.

**5.3.6 Environmental Justice**

Same as Alternative B.

## **6 Environmental Consequences: Fox River NWR**

### **6.1 Alternative A – Current Management**

This action would utilize the parameters of hunting established by current regulations. Species hunted would be those allowed by the current regulations and in areas currently open to hunting.

#### **6.1.1 Habitat Impacts**

Similar to Horicon NWR, off trail use for hunting is allowed at Fox River NWR, but currently only a small number of visitors engage in these activities, and do so infrequently, primarily in late fall during deer hunting season. We anticipate that short-term disturbances to vegetation would be negligible due to the limited use. Service staff monitor hunting and potential habitat impacts as part of their law enforcement activities and monitoring.

#### **6.1.2 Biological Impacts**

Hunters can cause some disturbance to wildlife, but the disturbance is minor and short term. Other wildlife not being harvested (including birds, mammals, reptiles, amphibians and invertebrates) may be temporarily disturbed by hunters approaching an animal's resting site and flushing or moving the wildlife as the animals try to avoid human contact. No long-term effects are expected for non-hunted species, including birds, mammals, reptiles and amphibians, because hunting does not occur during breeding season.

Because all of the hunting occurs in the fall and winter, nesting animals are not disturbed. During the deer gun hunting seasons, which attracts the largest number of hunters, most of the migrating waterfowl have left the Refuge. The exception to this is when the State offers a special gun hunt in October.

Another biological impact is the killing of animals, which is a negative impact to the individual animal. However, the harvesting of animals for hunting also creates positive benefits by promoting people's connection with nature, helping the Refuge in achieving its habitat management objectives, and maintaining quality habitat for other wildlife.

Under all alternatives, we would continue to offer opportunities for visitors to engage in hunting. By allowing hunting access, visitors would be more aware of biological facts upon which Service management is based and why these species are important to people and other wildlife. This outcome would help increase public support for Refuge management and habitat protection, as well as the Service and the Refuge System.

#### **6.1.3 Federally Protected, Threatened, and Endangered Species**

No species on the federal threatened and endangered species list are known to exist at Fox River NWR. Therefore, no impacts are expected. Should the presence of a federally protected species be identified at the Refuge, the Service will evaluate its use onsite and protect it according to the species needs.

#### **6.1.4 Historic Properties and Cultural Resources**

This alternative will result in no additional ground disturbance or disturbance to standing structures, and it would have no effect on any historic properties. Activities that might cause an effect to a historic property would be subject to a case by case Section 106 review.

#### **6.1.5 Cumulative Impact Analysis of the Proposed Action**

##### ***Anticipated Direct and Indirect Impact on Wildlife Species***

This alternative would have no additional effect on wildlife populations. Animal populations would be managed using the current hunting seasons and locations.

##### **Hunted Resident Wildlife**

###### *Small Upland Game (pheasant, gray partridge, rabbit, and squirrel)*

No harvest numbers are available from Wisconsin DNR for small game such as pheasant, gray partridge, rabbit, and squirrel. Fox River NWR supports 128 acres of upland grassland and 67 acres of oak savanna.

The Refuge is currently closed to hunting of all small upland game due to the minimal amount of suitable upland game habitat available on the Refuge.

###### *Waterfowl, Marsh Birds, and Other Migratory Birds*

No waterfowl or migratory bird hunting is allowed on Fox River NWR. Therefore, no adverse impacts to waterfowl or other migratory populations on Refuge are expected.

###### *Big Game (white-tailed deer)*

Deer hunting and limited guided wildlife observation and environmental interpretation are the only public access currently allowed at Fox River NWR. Similar to Horicon NWR, the few thousand deer harvested in Marquette County have a minimal contribution to the number of deer harvested Statewide. This minimal contribution, plus the number of deer harvested annually for nearly four decades, which has been consistently more than 600,000, indicates the deer population is being maintained at a sustainable level.

The Refuge does not perform any management practices specifically for white-tailed deer, although they may benefit from some of the habitat management practices and habitat restoration efforts undertaken on the Refuge. Browse by white-tailed deer is a management concern on limited areas of the Refuge as it impacts forest developmental processes and vegetation composition and species diversity. This, in turn, can affect entire ecosystems and habitats for species such as migratory waterfowl or grassland bird species. Current Refuge deer hunting regulations and low hunter harvest and density indicate that deer hunting as described under Alternatives A and B will have minimal impacts on the regional populations.

###### *Turkey*

No turkey hunting is allowed on Fox River NWR. Therefore, no adverse impacts to turkey populations on Refuge are expected.

*Furbearers (coyote, raccoon, skunk)*

No furbearer hunting is allowed on Fox River NWR. Therefore, no adverse impacts to furbearer populations on Refuge are expected.

**Access Impacts on Wildlife**

The potential impacts to wildlife associated with access for hunting was described previously for Horicon NWR under Section 5.1.5. Overall, effects of hunting access should not be significant, because Fox River NWR already experiences minimal public use. In addition, the time of year at which hunting occurs generally avoids disturbance to wildlife and their breeding periods.

***Anticipated Direct and Indirect Impact on Refuge Programs, Facilities and Cultural Resources***

**Other Refuge Wildlife-Dependent Recreation**

Fox River NWR is closed to public access (except hunting and limited guided wildlife observation and environmental interpretation) and therefore attracts fewer than 100 visitors annually. Hunting is one of the priority public uses and compatible with the purposes for which the Refuge was established. Hunting is also a way for the public to gain an increased awareness of Fox River NWR and the National Wildlife Refuge System.

No user surveys have been conducted at Fox River NWR. Public use on the Refuge is limited and therefore no conflicts with other is expected.

**Refuge Facilities**

Aside from a parking area, Fox River NWR does not maintain any trails, kiosks, or other access facilities for users. Therefore, Alternative A would not impact use for hunting as a management tool for managing deer densities around the Refuge. It also maintains the status quo for other wildlife-dependent recreation by maintaining limited guided access for all other uses.

**Cultural Resources**

The Current Management Alternative will not have any additional impacts to cultural resources. Activities that might cause an effect to a historic property would be subject to a case by case Section 106 review.

***Anticipated Direct and Indirect Impact on Refuge Environment and Community***

The Current Management Alternative will have little if any impact on soils, air quality, water quality or solitude. Vegetation, as stated above, could be minimally affected in limited areas by herbivore activity as well as localized trampling and compaction due to hunter access.

***Other Past, Present, Proposed and Reasonably Foreseeable Hunts and Anticipated Impacts***

The Current Management Alternative would have no additional anticipated impacts from hunting.

***Anticipated Impacts If Individual Hunts are Allowed to Accumulate***

National Wildlife Refuges, including Fox River NWR, conduct hunting programs within the framework of State and Federal regulations. By maintaining hunting regulations that are consistent with or more restrictive than the State, individual Refuges ensure that they are maintaining seasons which are supported by management on a regional basis.

### **6.1.6 Environmental Justice**

The directive for considering environmental justice was described previously under Horicon NWR in Section 5.1.6. This assessment has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. None of the alternatives will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

Alternative A will not disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low income populations. Hunting opportunities proposed on Fox River NWR also already exist on State, Federal and other public lands in the area where the Refuge is located.

## **6.2 Alternative B – Proposed Hunt Plan (Preferred Alternative)**

Alternative B involves maintaining the hunting opportunities in a manner similar to the actions that are common to Alternative A (Current Management) where minimal conflicts would occur with wildlife uses. Alternative B is considered the Service’s preferred alternative because it maintains hunting opportunities where possible to do without impacting Refuge staffing resources and sensitive biological resources. This alternative also expands access opportunities on the Refuge, which helps promote greater use and builds individuals connections with nature.

### **6.2.1 Habitat Impacts**

Impacts would potentially have a slight increase compared to Alternative A for Fox River NWR. By allowing opportunity for additional public access, individuals involved with one of the wildlife-dependent recreational activities could potentially increase wildlife disturbance depending on location and time of year.

However, the Refuge would minimize the risk of this disturbance by not expanding any facilities for public access.

### **6.2.2 Biological Impacts**

Biological impacts would potentially have a slight increase compared to Alternative A for Fox River NWR. However, as noted, the Refuge would minimize the risk of this disturbance by not expanding any facilities for public access.

### **6.2.3 Federally Protected, Threatened, and Endangered Species**

No species on the federal threatened and endangered species list are known to exist at Fox River NWR. Therefore, no impacts are expected. Should the presence of a federally protected species be identified at the Refuge, the Service will evaluate its use onsite and protect it according to the species needs.

### **6.2.4 Historic Properties and Cultural Resources**

This alternative will result in no additional ground disturbance or disturbance to standing structures, and it would have no effect on any historic properties. Activities that might cause an effect to a historic property would be subject to a case-by-case Section 106 review.

## 6.2.5 Cumulative Impact Analysis of the Proposed Action

### ***Anticipated Direct and Indirect Impact on Wildlife Species***

This alternative would have no additional effect on wildlife populations. Animal populations would be managed using the current hunting seasons and locations.

#### **Hunted Resident Wildlife**

##### *Small Upland Game (pheasant, gray partridge, rabbit, and squirrel)*

Same as Alternative A, Fox River NWR would continue to remain closed to all upland game and seasons. Therefore, no adverse impacts to small game on the Refuge are expected.

##### *Waterfowl, Marsh Birds, and Other Migratory Birds*

Same as Alternative A, no waterfowl or migratory bird hunting is allowed on Fox River NWR. Therefore, no adverse impacts to waterfowl or other migratory populations on the Refuge are expected.

##### *Big Game (white-tailed deer)*

Deer hunting at Fox River NWR would be consistent with the locations and seasons currently allowed under Alternative A. In addition to the current opportunities, the Refuge would expand deer hunting opportunities to include the newly acquired 80 acres.

These added areas would expand the opportunities available to users interested in deer hunting at Fox River NWR. By expanding access to these areas, the Refuge helps achieve its habitat management objectives in these habitats. The expanded opportunities in these areas would likely result in the harvest of a few more additional deer each year at the Refuge. Compared to the overall deer harvest in Marquette county, the direct impacts associated with this expansion are minimal.

##### *Turkey*

Same as Alternative A, no turkey hunting is allowed on Fox River NWR. Therefore, no adverse impacts to turkey populations on Refuge are expected.

##### *Furbearers (coyote, raccoon, skunk)*

Same as Alternative A, no furbearer hunting is allowed on Fox River NWR. Therefore, no adverse impacts to furbearer populations on Refuge are expected.

#### **Access Impacts on Wildlife**

The potential impacts to wildlife associated with access for hunting was described previously for Horicon NWR under Section 5.1.5. Overall, effects of hunting access should not be significant, because Fox River NWR already experiences minimal public use. In addition, the time of year at which hunting occurs generally avoids disturbance to wildlife and their breeding periods.

Allowing limited access for additional public uses, besides hunting, such as fishing, wildlife observation and photography, and environmental education and interpretation would potentially allow for disturbance to nesting wildlife at Fox River NWR. As a result, the Service anticipates minimal public use and access at Fox River NWR.

***Anticipated Direct and Indirect Impact on Refuge Programs, Facilities and Cultural Resources***

**Other Refuge Wildlife-Dependent Recreation**

Same as Alternative A.

**Refuge Facilities**

Same as Alternative A.

**Cultural Resources**

Same as Alternative A.

***Anticipated Direct and Indirect Impact on Refuge Environment and Community***

Same as Alternative A.

***Other Past, Present, Proposed and Reasonably Foreseeable Hunts and Anticipated Impacts***

Same as Alternative A.

***Anticipated Impacts If Individual Hunts are Allowed to Accumulate***

Same as Alternative A.

**6.2.6 Environmental Justice**

Same as Alternative A. Alternative B will not disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low income populations. Instead, it would allow access for other public use at Fox River NWR and thereby provide recreational opportunity for everyone.

## **7 Regulatory Compliance**

The Refuge Recreation Act of 1962 (16 U.S.C 460k) authorizes the Secretary of the Interior to administer National Wildlife Refuges for public recreation as an appropriate incidental or secondary use (1) to the extent that is practicable and consistent with the primary objectives for which an area was established and (2) provided that funds are available for the development, operation and maintenance of permitted recreation.

The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 688dd-ee) authorizes the Secretary of the Interior to permit the use of any area within the NWR System for any purpose, including but not limited to hunting, fishing and public recreation whenever those uses are determined to be compatible with the purposes for which the area was established.

The Improvement Act of 1997 is the latest amendment to the NWR System Administration Act. It supports the NWR System Administration Act's language concerning the authorization of hunting and other recreational uses on Refuge lands. The Improvement Act substantiates the need for the NWR System to focus first and foremost on the conservation of fish, wildlife and plant resources and their habitats and states that other uses will only be authorized if they are determined to be compatible with this mission statement and the purposes for which the Refuge was established.

Hunting was identified in the 2007 CCP for Horicon and Fox River NWRs as being a priority public uses that would be authorized on the Refuge. The Service has determined (i.e., Compatibility Determination included with the 2007 CCP) that these uses are compatible with the purpose of the Refuge and the mission statement of the NWR System. Annual changes to the hunting program will be included in the Hunt Plan and updated in the Code of Federal Regulations.

## **8 Consultation and Coordination with Others**

The DNR was contacted to ensure Refuge recreational and management hunts are conducted in accordance with State laws and recommendations. The DNR was consulted regarding the proposed changes to Refuge areas and hunts. DNR requests were taken into consideration into the development of the Hunt Plan and EA.

## **9 Public Comment on Environmental Assessment and Response**

Complete once comments received.

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## **Appendix A**

### **Summary of Public Comments, For the Draft Hunt Plan and Environmental Assessment for the Horicon National Wildlife Refuge and Fox River National Wildlife Refuge**

# Horicon and Fox River National Wildlife Refuges

## HUNT PLAN

**June 2016**

**Prepared By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Submitted By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Concurred By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Approved By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

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## **1. INTRODUCTION**

This Hunt Plan formulates the general concept for hunting opportunities as identified in the Comprehensive Conservation Plan (CCP) for Horicon and Fox River National Wildlife Refuges (Refuges) dated March 16, 2007.

### **1.1. Horicon National Wildlife Refuge**

Horicon National Wildlife Refuge (Horicon NWR) was established in 1941 for the protection and preservation of migratory birds. It is located on the west branch of the Rock River in southeastern Wisconsin, 43 miles west of Lake Michigan and 65 miles northwest of Milwaukee, in Dodge and Fond du Lac Counties (Figure 1). Horicon NWR comprises the northern two thirds (22,072 acres) of the almost 33,000 acre Horicon Marsh; Wisconsin Department of Natural Resources (DNR) manages the southern third as a wildlife area and fur farm.

In 1990, Horicon Marsh was designated a “Wetland of International Importance” by the Ramsar Convention, an intergovernmental treaty that obligates 45 signatory nations to consider wetland conservation through land use planning, wise use of wetlands, establishment of wetland reserves, and wetland research and data exchange. In 1997, Horicon Marsh was accepted as a Globally Important Bird Area in American Bird Conservancy’s United States Important Bird Areas program. The marsh received this recognition especially because more than 50 percent of the Mississippi Flyway Canada geese migrate through the marsh during the fall, and 2 percent of the biogeographic population of mallards migrates through during the fall, with impressive numbers of other waterfowl. In the fall of 2004, Horicon Marsh was recognized by the State of Wisconsin as an Important Bird Area.

### **1.2. Fox River National Wildlife Refuge**

The Fox River National Wildlife Refuge (Fox River NWR), established in 1979, consists of 1,075 acres of land located 10 miles north of Portage, Wisconsin, along State Highway F (Figure 2). The Refuge is administered by staff at Horicon NWR, approximately 40 miles to the east. The majority of the Refuge is shallow marsh, sedge meadow, fen, or wet prairie wetlands. Upland prairie and forest is also present on Fox River NWR. The matrix of wetland and upland habitat provides excellent habitat for both wetland and upland associated wildlife, such as ducks, sandhill cranes, herons, rails, songbirds, deer, turkey, and bobwhite quail. More than 300 cranes use Fox River NWR as a staging area during fall migration.

### **1.3. Purposes of the Refuges**

Horicon NWR was established in 1941 under the authority of the Federal Migratory Bird Conservation Act of 1929. The purpose of the Refuge is: “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds...”

Fox River NWR was established in 1979 under two legislative authorities:

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” Fish and Wildlife Act of 1956

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”  
Migratory Bird Conservation Act, February 18, 1929, 16 U.S.C. 715d

Horicon NWR provides hunting opportunities for some small upland game (pheasant, gray partridge, rabbit and squirrel), big game (white-tailed deer), and limited waterfowl (only during special programs with take limited to ducks and coots) during the State seasons.

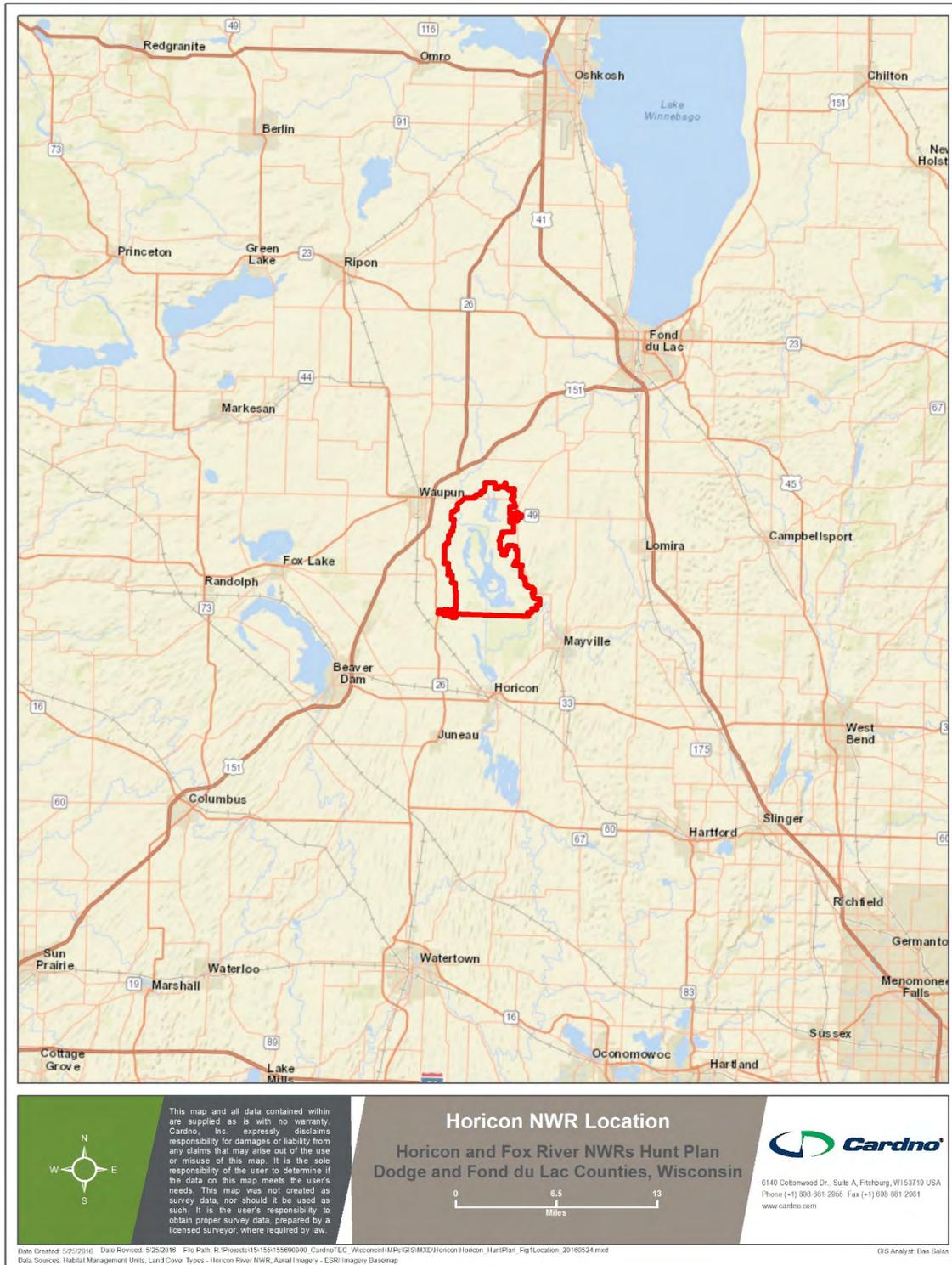
Fox River NWR currently provides big game hunting only for white-tailed deer during State seasons. The Refuge is closed to all other State-regulated hunting seasons.

#### **1.4. Hunt Plan Purpose**

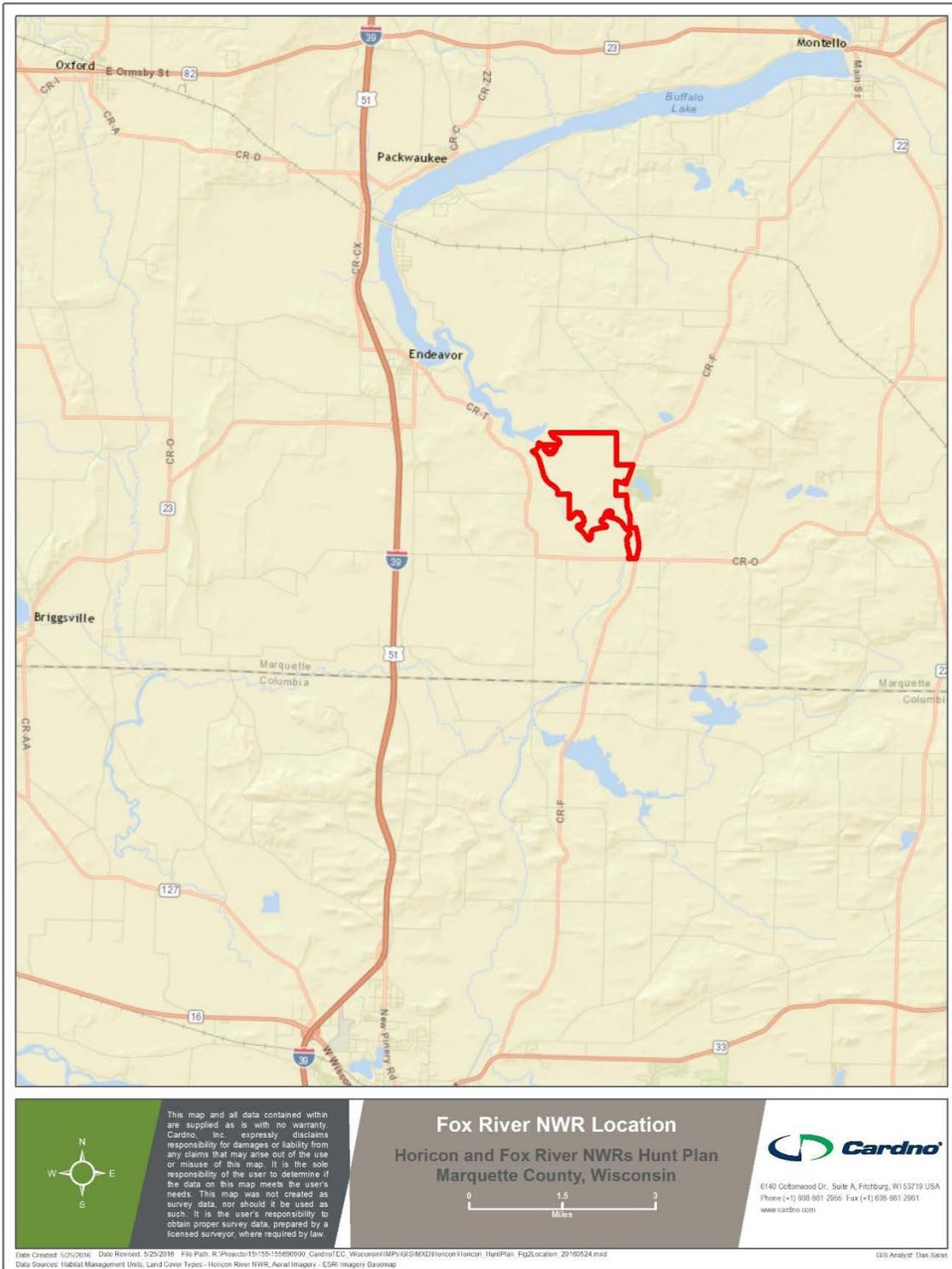
This Hunt Plan describes, in detail, the current and future hunting opportunities, how hunting will be conducted, and conflict resolution with other management objectives for both Refuges. This Hunt Plan is a step-down plan of the overall Visitor Services Plan, which will be completed in 2017.

The 2007 CCP identified hunting as a priority public use that would be authorized on most upland units of Horicon and Fox River NWRs where conflicts with other users or biological needs are avoided or minimized. The Service has determined that these uses are compatible with the purposes of Horicon and Fox River NWRs and the mission statement of the National Wildlife Refuge System. (i.e., Compatibility Determination included with the 2007 CCP).

**Figure 1: Location of Horicon NWR, Dodge and Fond Du Lac Counties, Wisconsin**



**Figure 2: Location of Fox River NWR, Marquette County, Wisconsin**



## 2. CONFORMANCE WITH STATUTORY AUTHORITIES

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 that “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 involving hunting, fishing, wildlife observation, wildlife photography, and 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 U.S. Fish and Wildlife 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.

Prior to the Improvement Act, refuge lands were authorized to allow hunting through two previous acts of Congress:

**The Refuge Recreation Act of 1962** authorized the Secretary of the Interior to administer national wildlife refuges for public recreation as an appropriate incidental or secondary use to the extent that it is compatible with the primary objectives for which the area was established.

**The National Wildlife Refuge System Administration Act of 1966** (Refuge Administration Act) further authorized uses on refuges for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever the Secretary determines that such uses are compatible with the major purposes for which the areas were established.

Hunting on the Refuges will allow refuge staff to manage wildlife populations at acceptable levels, provide wildlife-dependent recreational opportunities for the public, and promote a better understanding and appreciation of natural habitats and their associated fish and wildlife resources. Implementation of the proposed actions will be consistent with the Refuge Recreation Act and the Refuge Administration Act, and will be compatible with Refuge purposes.

## **2.1. Relationship to Other Plans and Documents**

### **2.1.1. Previous Refuge Hunt Plans**

The first Hunt Plan for Horicon NWR was approved in 1984, with multiple amendments to the plan through 2000. In addition, the Refuge completed compatibility determinations for public uses, including hunting. Hunting was determined to be compatible with the mission of the Refuge and has minimal impact on Refuge resources.

### **2.1.2. Comprehensive Conservation Plan (CCP)**

For both Horicon and Fox River NWRs, hunt plans were drafted prior to developing the CCP. These draft plans were used to inform CCP as it was developed. For both Refuges, this Hunt Plan is a step-down from the Comprehensive Conservation Plan (CCP) completed in 2007; during the CCP planning process hunting was determined to be compatible (USFWS 2007) with the mission of both Refuges and the Refuge system. Upon completion and adoption of the Hunt Plan and Final Environmental Assessment, the Service will publish in the Federal Register a Proposed Rule that updates the hunting program on both Refuges. Following the comment period on the Proposed Rule, a determination will be made to implement hunting as outlined in this plan. Subsequently, a Final Rule will be published outlining opportunities on the Refuges.

### **2.1.3. Service Policy Regarding Hunting (605 FW 2)**

As part of its policy for consistent management of the National Wildlife Refuge System (Refuge System), the Service provides managers with policy and guidance for implementing hunting on refuges. This policy is intended to govern the management of recreational hunting programs on national wildlife refuges. This policy was developed alongside guidance for all wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, environmental education and interpretation) presented in the Service Manual chapter 605 FW 1. For the Horicon and Fox River NWRs Hunt Plan, these policies provide guidance and ensure a degree of consistency between how hunting is considered, evaluated, and implemented on refuges.

### **2.1.4. USFWS Strategy to Increase Quality Hunting and Fishing on National Wildlife Refuges (USFWS 2014)**

In 2011 the Service, working with partners, developed a strategic plan for implementing the Improvement Act called “Conserving the Future” (USFWS 2011). This plan clarifies the vision for the National Wildlife Refuge System and outlines strategies for improving delivery of the System’s mission. This vision was further refined to provide refuges implementation guidance for management actions, such as hunting (USFWS 2014).

To the extent possible, the Service has incorporated recommendations from this implementation strategy when and where practically feasible and compatible at Horicon and Fox River NWRs.

### 3. STATEMENT OF OBJECTIVES

Objectives for the hunting program for both Refuges include:

- Providing the public with safe and enjoyable hunts that are compatible with the Refuge purpose;
- Providing quality hunting opportunities that minimize conflict with other public use activities;
- Promoting public understanding of and increase public appreciation for the Refuge's and surrounding area's natural resources; and
- Maintaining wildlife populations at levels compatible with the refuge habitat.

The overall objective of the hunting program is to provide safe, quality hunting opportunities for the visiting public. Hunting guidelines and regulations will be based on sound biological principles. The hunting program on both Refuges will be compatible with refuge objectives and will not interfere with other approved forms of public use and wildlife management objectives.

Quality hunting is an element to the Refuge's hunting objectives. For the purposes of Horicon and Fox River NWRs Hunt Plan, the refuge staff define "quality" hunting according to the US Fish and Wildlife Service definition of quality as noted in the Service Manual (605 FW 1, Section 1.6):

- A. Promotes safety of participants, other visitors, and facilities;
- B. Promotes compliance with applicable laws and regulations and responsible behavior;
- C. Minimizes or eliminates conflict with fish and wildlife population or habitat goals or objectives in an approved plan;
- D. Minimizes or eliminates conflicts with other compatible wildlife-dependent recreation;
- E. Minimizes conflicts with neighboring landowners;
- F. Promotes accessibility and availability to a broad spectrum of the American people;
- G. Promotes resource stewardship and conservation;
- H. Promotes public understanding and increases public appreciation of America's natural resources and our role in managing and conserving these resources;
- I. Provides reliable/reasonable opportunities to experience wildlife;
- J. Uses facilities that are accessible to people and blend into the natural setting; and
- K. Uses visitor satisfaction to help define and evaluate programs.

## **4. ASSESSMENT**

### **4.1. Horicon NWR**

Since 1953 the Refuge has provided public hunting and administered a hunting program. Hunting and fishing opportunities are abundant within the Refuge and surrounding area. The Refuge includes a diversity of habitats, including grasslands, woodlands, and marsh. These areas support waterfowl, deer, turkey, squirrels, rabbits, and other game species. Waterfowl and resident wildlife are monitored by Refuge and Wisconsin DNR staff. Waterfowl assessments are based upon the distribution, abundance, and flight routes of migratory birds. The annual Waterfowl Population Status Report (USFWS 2015) includes the most current breeding and production information available and is a result of cooperative efforts of the U.S. Fish and Wildlife Service, Canadian Wildlife Service, and State and private conservation organizations. This report has been used to aid in the development of waterfowl harvest regulations for Wisconsin, as well as the rest of the United States for the hunting season. Wisconsin DNR collects data on resident species through a variety of annual surveys, harvest data, population indices, and historical information, which are used to determine hunting guidelines for each species. Recent assessments of game species hunted (i.e. white-tailed deer, waterfowl, other migratory birds, and turkey) in the vicinity of the Refuge indicate that there are no declines (DNR 2012).

#### **4.1.1. Waterfowl**

Despite the generally dry conditions across important duck breeding areas in Wisconsin in recent years, the total breeding duck numbers in Wisconsin appear to be near the average of the last 10 years. The DNR predicts fair to good duck production within the State, and encouraging numbers continentally. The information on the yearly waterfowl breeding conditions is used to determine the fall season structure each year in Wisconsin.

The Wisconsin Breeding Waterfowl Survey was completed in April and May, and is very significant because a large proportion of the ducks harvested in Wisconsin are also raised in Wisconsin. The second source of information is a cooperative survey of Canada geese, the Mississippi Valley Population (MVP) Breeding Survey, organized by the Ontario Ministry of Natural Resources. The final piece is the U.S. Fish and Wildlife Service breeding waterfowl survey for the northern U.S., Canada, and Alaska, which was released in early July.

The Refuge provides important undisturbed resting habitat for migratory waterfowl, but is open for a Learn to Hunt Waterfowl program, where youth are paired with an experienced hunter who teaches them how to hunt. This hunt occurs on several weekend days during the duck season. In this Hunt Plan, the Service is proposing additional hunting opportunities by adding additional species (geese) and allowing first-time adults to participate in the Learn to Hunt Waterfowl Program.

#### **4.1.2. Deer**

Horicon NWR is located in the Wisconsin Central Farmland Deer Management Zone. In 2015, the Central Farmland Zone comprised nearly 60 percent of the State's total deer harvest for all seasons, recording over 183,000 deer harvested out of the State-wide total of nearly 309,000 in

2015. Of these totals, deer harvests in 2015 for all seasons in Dodge County totaled 4,916, while Fond du Lac County recorded 4,587.

Deer hunting, especially during the deer gun seasons, has always been a popular activity on the Refuge. The most significant use of hunting as a management tool involves regulating the deer population at levels compatible with the habitat. This type of regulation prevents destruction of refuge habitat, which is evident by obvious browse lines; alleviates crop depredation on neighboring lands; reduces the chance for starvation and spread of disease, such as Chronic Wasting Disease, within the deer population; and reduces the vehicle/deer collisions on adjacent roads. In 1992, the Refuge staff closed all hunting within the 980-acre hiking trail area off of Highway 49, but within two years was pressured to open it again when the neighboring apple orchard had a major loss due to depredation by deer. Refuge staff amended the hunt plan to open this particular area during the nine day deer gun season, as well as for the December antlerless hunt, and it has remained that way to this day.

#### **4.1.3. Pheasant and Partridge**

Among the “small game” hunting that is allowed on the Refuge, pheasant hunters comprise the majority of the small game hunters. The DNR stocks about 71 public hunting grounds with approximately 54,000 game farm pheasants. No stocking is conducted on the Refuge, but pheasants are regularly observed.

Partridge hunting has always been included among the small game hunting allowed on the Refuge, but the Gray Partridge is an uncommon bird on the Refuge. Historical accounts from the annual Refuge narratives report partridges as being common in the 1940s. After 1950, every narrative report states that very few partridges are being seen, which holds true today as well. It is doubtful that the bird is sought after during the present day hunting season. In this Hunt Plan, the Service is proposing to eliminate the designated area (F), which is currently open only to youth-novice pheasant hunting. With the implementation of this Hunt Plan, hunting in area F would be concurrent with all other areas of the refuge without special restrictions.

#### **4.1.4. Squirrel**

Squirrels are a popular game species and can provide some great early season hunting opportunities, especially for beginning hunters. Squirrel production and resulting harvest opportunities are strongly tied to the previous year’s mast production, so hunters usually key into these locations when choosing a site to hunt squirrels. The number of hunters specifically targeting squirrels on the Refuge is small, probably due to the small acreage of woodlands.

#### **4.1.5. Cottontail Rabbit**

Cottontail rabbits are a very popular small game animal and typically provide for great recreational opportunities across the state and on the Refuge. Rabbits are extremely prolific and their annual reproduction is usually dependent upon local weather conditions during the breeding seasons. Portions of the state with adequate rainfall, resulting in plenty of green, succulent vegetation, usually have good rabbit production and good hunting opportunities, although the number of hunters on the Refuge specifically targeting rabbits is small. However, Dodge County, which is where most of the Refuge is located, was one of the counties recording the most harvest Statewide in 2012 (DNR 2013).

#### **4.1.6. Turkey**

The wild turkey is truly one of Wisconsin's wildlife management success stories. Since wild turkeys were first successfully reintroduced into Wisconsin in 1976, population levels continue to increase and expand, both Statewide and on the Refuge. In the 1990s, turkey was not even on the Refuge bird list, but within 10 years, the species has become so prolific that they are commonly seen on a daily basis when driving around the Refuge. Turkeys are now so abundant that Wisconsin spring turkey harvests rank among the largest in the nation. They have also proven surprisingly tolerant of harsh winter weather, with populations established throughout the northern part of the state. After 20 years of rapidly increasing turkey populations and turkey harvests, turkeys in Wisconsin now seem to be stabilizing at levels suitable to the available habitat on the landscape. Turkey numbers and, in turn, turkey harvests, will now likely ebb and flow in response to natural factors such as weather and food availability. The goal of the Wisconsin wild turkey management program is to maintain a secure population capable of supporting a safe, high-quality hunting experience with a reasonable chance of success. The season framework is set to minimize interference among hunters, as well as to reflect wild turkey population densities and distribution (DNR 2013). Currently turkey hunting is not offered on the Refuge. In this hunt plan, the Service is proposing additional public hunting opportunities. Turkey hunting will mimic state seasons and regulations as appropriate considering the Service's responsibilities.

### **4.2. Fox River NWR**

Hunting opportunities are abundant within the surrounding area. The Refuge includes a diversity of habitats, including grasslands, woodlands, and marsh. These areas support waterfowl, deer, turkey, squirrels, rabbits, and other game species. Wisconsin Department of Natural Resources (DNR) collects data on resident species through a variety of annual surveys, harvest data, population indices, and historical information which are used to determine hunting guidelines for each species. Recent assessments of game species hunted (i.e. white-tailed deer, waterfowl, other migratory birds, turkey) in the vicinity of the Refuge indicate that there are no declines (DNR 2013).

#### **4.2.1. Deer**

Similar to Horicon NWR, the Fox River NWR is located in the Central Farmland Deer Management Zone. In 2015, the Central Farmland Zone comprised nearly 60 percent of the State's total deer harvest for all seasons, recording more than 183,000 deer harvested out of the State-wide total of nearly 309,000 in 2015. Of these totals, deer harvests in 2015 for all seasons in Marquette County totaled 6,335.

The most significant use of hunting as a management tool involves regulating the deer population at levels compatible with the habitat. This type of regulation prevents destruction of refuge habitat, which is evident by obvious browse lines; alleviates crop depredation on neighboring lands; reduces the chance for starvation and spread of disease, such as Chronic Wasting Disease, within the deer population; and reduces the vehicle/deer collisions on adjacent roads.

## **5. CURRENT HUNTING PROGRAM**

### **5.1. Horicon NWR Seasons, History, and Accessibility**

#### **5.1.1. Seasons and History**

Currently, hunting opportunities on the Refuge include ring-necked pheasant, gray partridge, cottontail rabbit, squirrel, and deer. In addition, ducks are hunted during a supervised Learn to Hunt Waterfowl program. All hunting activities are planned and operated with the Refuge's primary goals and objectives as the guiding principles. Hunting is conducted in accordance with the State regulations and seasons. However, there are exceptions to following applicable state laws when the Refuge administers further restrictions to ensure compatibility within the Refuge's mission. This exception includes the use of non-toxic shot, which is required by hunters while in the field, including shot shells used for hunting small game. The Refuge does have a "Hunting Map and Regulations" brochure, which includes both the Horicon National Wildlife Refuge and the Horicon Marsh State Wildlife Area. This brochure lists the species, signs, and regulations pertinent to each area (see Appendix 1).

When the Refuge was established in 1941, very few deer were around at that time. The Refuge narrative reports noted that many people drove out to the Refuge with their families in hopes of showing their kids a deer. It was not until 1951 that the State had an established season. The first deer hunting on the Refuge was a bow and arrow season in 1953. By 1957, the first shotgun hunt for deer was opened on the Refuge and has continued every year (Refuge annual narrative reports). In 2013, the State allowed the use of rifle for the entire State, which included the Refuge.

Hunting of pheasant, rabbit, and squirrel, along with fox and raccoon, was allowed on the Refuge from 1956 to 1960. It was discontinued because Refuge staff felt the populations were declining. By 1976, pheasant and rabbit hunting were allowed again. Interestingly, the hunts were established in the hopes of providing disturbance to the geese which were becoming a problem at that time. Partridge and rabbit were added in 1983 (Refuge annual narrative reports).

#### **5.1.2. Hunting Accessibility**

Most of the 22,072 acre Refuge, approximately 21,768 acres, is open to hunting during the gun deer seasons. A few areas are closed to all hunting, including the Viewing Area and Interpretive Displays on Highway 49, the Bud Cook Hiking Area (131 acres), and a small area around the Office/Visitor Center (84 acres). The Auto Tour Route/Hiking Trail Complex (980 acres) is closed to all hunting except during the two deer gun seasons (November and December); a 950-acre area around the Office/Visitor Center is closed to all hunting except for special hunts for hunters with disabilities in the fall; and a 145-acre area on the west side is closed to all hunting except for youth and novice pheasant hunters. The Refuge is closed to migratory bird hunting, other than a supervised Learn to Hunt Youth Waterfowl program. Refer to Figure 3 and Appendix 1 for locations of access available and restricted areas.

The Auto Tour/Hiking Trail Complex off of Highway 49 is open to deer hunting only during the nine-day deer gun season in November and the four-day antlerless deer hunt in December. The Auto Tour is closed to vehicles during the hunt. Hikers and other users are still allowed to be in

the area but must wear blaze orange. Prior to the hunt, signs are placed in the parking lot alerting people to the upcoming deer hunt and the requirement to wear blaze orange. Traditionally, it was never a problem as this time of year was usually cold and sometimes snowy, so not many hikers were out. However, in recent years there have been times when the weather was almost summer-like, which has attracted hikers and birdwatchers to the area. Fortunately, there has never been a safety incident. As an alternative, people can use the Bud Cook Hiking Area, which is closed to all hunting. However, Refuge staff recommends wearing blaze orange when outdoors in any area, whether open to hunting or not, during the deer gun seasons. When the Visitor Center is open, visitors may borrow orange vests to use while hiking.

Goose and duck hunting were allowed on the perimeter of the Refuge in coordination with the State from 1953 to 1966. It started out as an experimental hunt, with more than 16,000 hunters using the established blinds that first year. About 655 geese and 1,709 ducks were harvested that year. By 1967, waterfowl hunting was no longer allowed on the Refuge. It was at this time that the State adopted the tag system and set up the Horicon Zone, which still exists today. The Intensive Zone, an area surrounding the perimeter of the Refuge requiring hunters to be in blinds, was also set up at this time to help control hunter overcrowding and unsafe practices. However, the Intensive Zone was eliminated in 2006. Currently, hunters on private land surrounding the Refuge have to be at least 75 yards away while shooting at any waterfowl (Refuge annual narrative reports). This requirement is governed by regulations for State waterfowl hunting: “Placement of decoys or shooting at waterfowl that are within 75 yards of the Horicon NWR boundary is allowed, provided the hunter is at least 75 yards away from the refuge when shooting at any waterfowl.”

Access is provided for hunting through parking lots around the Refuge. Access is restricted to an hour before to an hour after legal hunting hours. No ATVs or boats are allowed on the Refuge. All vehicles are restricted to existing county roads or refuge access roads, such as the eastern half of Main Dike Road (when open). Hunters participating in the disabled hunts are allowed to drive vehicles on designated paths that lead to the blinds.

Scouting prior to the hunting season is not allowed unless it is already an open area for other approved forms of public use. If the area is closed, then hunters must wait until the hunting season opens and scout at that time.

### ***Hunters with Disabilities***

Since 1994, Horicon NWR has been hosting a disabled gun hunt during the nine-day deer gun season in Wisconsin on a 950-acre area near the office/visitor center. The acreage for this disabled hunt was originally 600 acres; in 2003 it was expanded to its current size. Also, additional blinds have been added over the years for a total of 10 blinds currently. The nine-day season is currently split into two time periods, especially as popularity for the hunt grew over the years and Refuge staff wanted to be able to accommodate all the hunters who applied. The hunters are allowed to have assistants, who are allowed to hunt, which was decided due to it being an open season for deer hunting. However, the assistant can only hunt when the person with the disability is hunting. Hunters are not restricted to the blind. Depending on their disability, some of them walk around, some use portable blinds, and others hunt from their vehicles. Starting with the 2013 season, only assistants who are hunting are charged a \$10.00

administrative fee (previously the hunter with the disability was also charged \$10.00). The criteria for participating in this hunt are that the hunter must have a Class A, B, or C disability permit from the Wisconsin DNR. No ATVs are allowed. All the blinds are accessible with a vehicle.

Every year the Wisconsin DNR offers an extra opportunity for hunters with disabilities to hunt deer by setting aside the first nine days in October as a gun season. Landowners, including the Refuge, can sign themselves up as a sponsor to allow hunters on their land. Since 2000, Horicon National Wildlife Refuge has offered this hunt in the same 950-acre area. The nine-day season is currently split into three 3-day seasons so that more hunters could be accommodated as the hunt gained in popularity over the years. Each 3-day season is limited to 15 hunters and their assistants, who are not allowed to hunt due to State rules. Ten blinds are available for their use, but hunters are not restricted to the blind. Many of them set up portable blinds or hunt from their vehicle. Criteria for participating in this hunt is the same as the November hunt; however, the State does not allow hunters with Class B permits that are valid for less than one year to participate.

Since 2010, the disabled hunt program was expanded to include a nine-day archery hunt for disabled hunters, set for the end of October so that it is timed with the rut. This program has been slowly building. Usually fewer than 20 hunters have applied for this hunt each year so far. The hunt is held in the same area that the gun hunts are held, with the criteria being that they must have a Class A, B, C, or crossbow permit in order to be eligible. However, they do not necessarily have to use a crossbow in the hunt. Beginning in 2014, State regulations changed so that all hunters can now use crossbows; therefore the criteria will change to the hunter having a Class A, B, or C permit in order to be eligible. They are allowed one assistant who is not allowed to hunt.

Previously, this 950-acre area was open to all hunters during the 4-day antlerless only hunt in December. When the area was expanded from 600 acres to 950 acres in 2003, there was so much opposition from hunters who traditionally hunted in the expanded area that in 2004, Refuge staff decided to open it up for everyone for the December hunt. This change appeased the hunters and because it was after the disabled hunts, it had no effect on those hunts. However, it has caused some confusion because the current signs surrounding this area say "Hunting by Permit Only...Special Regulation in Effect-Consult Manager." The hunters in the disabled hunts have "permits," but no permits are given out in December when it is open to everyone. Therefore, beginning in 2013, the December antlerless hunt was changed so that the area is only open to hunters with disabilities, through the current application process that is set up for the other three disabled hunts.

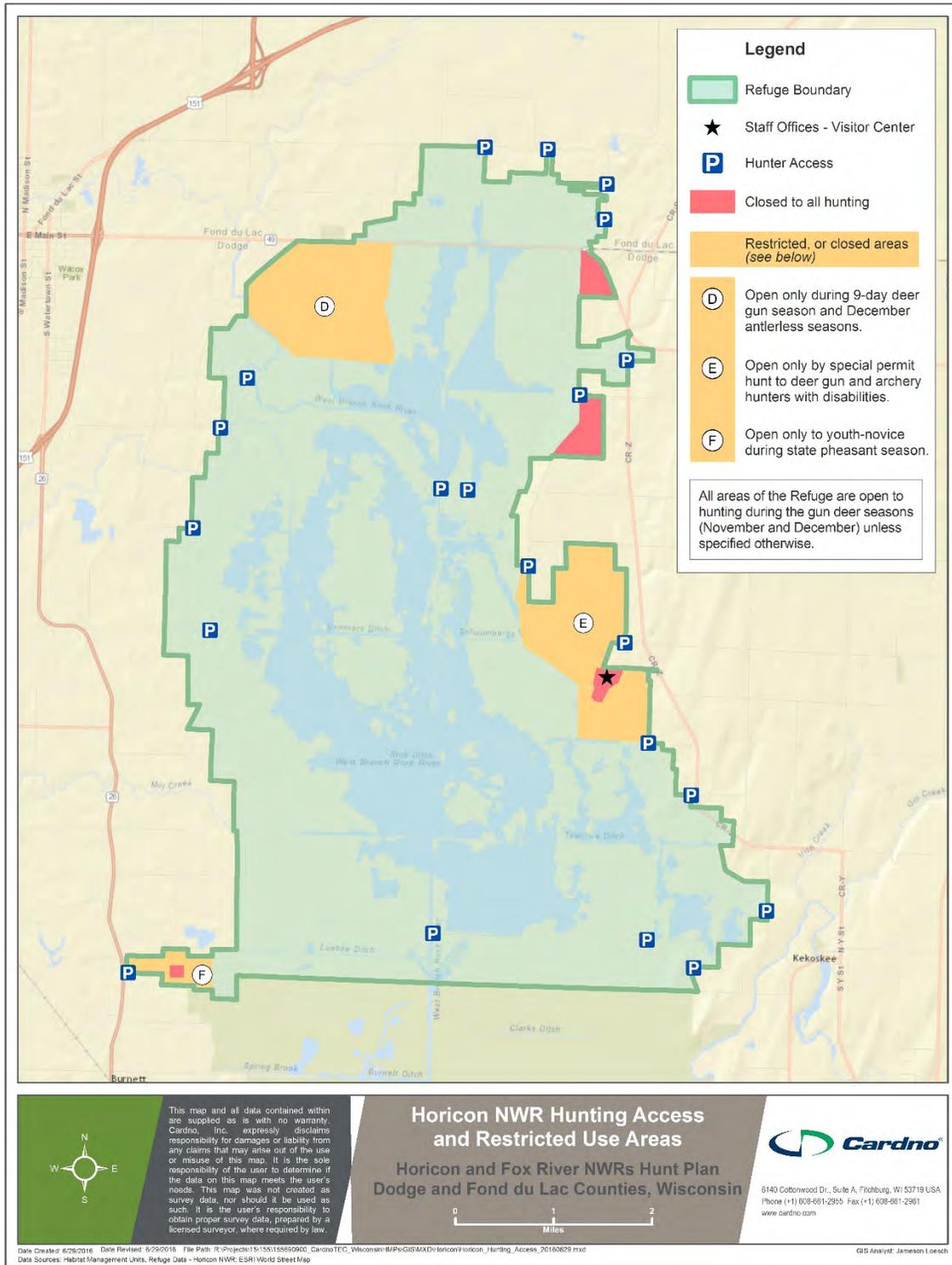
### ***Youth and Novice Hunting***

In 1984, a supervised youth duck hunt was established on the Refuge. Youth between the ages of 12 and 17 were selected by random drawing to participate in a pre-hunt orientation and then were assigned to hunt a specific area on the Refuge during the duck season, specifically targeting ducks and coots only. The program was very successful, but had its problems too. The "supervisor" of the youth was often a parent who knew nothing about waterfowl hunting. When the State's "Learn to Hunt" programs evolved in the mid-2000s, Refuge staff decided to change

the Youth Duck Hunt program to be more in line with this State program. In addition, the Refuge initially partnered with the Wisconsin Waterfowl Association (and now with Ducks Unlimited) and the local Wisconsin DNR staff based at the State-managed Horicon State Wildlife Area. One major difference in the structured Learn to Hunt program is that the youth are paired with an experienced waterfowl hunter who serves as their mentor during the hunt. Refuge staff decided to retain the criteria of 12 through 17 years of age for the actual hunt, but they do include the 10 to 11 year olds and novice hunters in the classroom experience. However, their actual hunt takes place on State land.

Shortly after acquiring the former Stensaas tract on the west side of the Refuge, staff decided to designate the area as a youth/novice pheasant hunt area in a partnership with Wisconsin DNR and Pheasants Forever in 1999. A private inholding still exists within the middle of this 145-acre tract, with a small closed area around the property. Dike Road, accessed from Highway 26 on the west side of the Refuge, originally crossed the middle of the inholding, which was one reason Refuge staff did not allow access into the youth/novice pheasant area from this road. In addition, no parking was available. The road was eventually re-routed to go around the inholding and a parking lot was established in 2012. Prior to this, parking was only available at the State parking lot, Island Road, which is south of Dike Road. Hunters had to walk a rough and oftentimes, wet path in order to access the hunting area. This path was also shared by hunters who were deer or small game hunting on the Refuge, east of the youth/novice pheasant hunt area. Even with the addition of the new parking lot, the area has not been popular among youth or novice pheasant hunters; only a handful of hunters use the area each year. In addition to this specific area for youth and novice hunting, the Refuge also allows hunting for the State Youth Deer hunt in October, in all general hunting areas, except disabled hunting Area E and Auto Tour.

**Figure 3: Existing Horicon NWR Hunting Access and Restricted Use Areas**



## 5.2. Horicon NWR Current Hunt Program Overview

### 5.2.1. General

Horicon NWR is open for hunting of duck and coot on designated areas of the refuge in accordance with State regulations, subject to the following conditions:

1. Permits are required.
2. Only participants in the Learn to Hunt (Young Wildfowlers and Special Programs) are allowed to hunt.

Hunting of ring-necked pheasant, gray partridge, squirrel, and cottontail rabbit is allowed on designated areas of the refuge in accordance with State regulations during the State seasons, subject to the following conditions:

1. Shotgun hunters may possess only approved nontoxic shot while hunting upland game species.
2. Hunting in the youth/novice pheasant hunt area (Area F) is for youth who are 12-15 years of age, and by permit.

Hunting of white-tailed deer is allowed on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. Hunting is allowed during the State archery, muzzleloader, and State firearms seasons.
2. Construction and use of permanent blinds, platforms, or ladders is not allowed.
3. All stands must be removed from the refuge following each day's hunt. Hunting from any stand left up overnight is prohibited.
4. Hunting in the area surrounding the office/visitor center (Area E) is by permit only.
5. Hunting in the Auto Tour/hiking trail complex (Area D) is open only during the State firearms deer season.
6. Any ground blind used during any gun deer season must display at least 144 square inches of solid blaze-orange material visible from all directions.

The Refuge is closed to all other game and State seasons. Opportunities for hunting other game are available nearby on the adjacent State-owned lands.

### 5.2.2. Prohibited Activities

In addition to the prohibited activities listed in the Wisconsin Hunting Regulations pamphlets, the following are also prohibited on both the Horicon National Wildlife Refuge and the Horicon Marsh State Wildlife Area:

- Overnight camping or parking
- Open fires
- Blocking access to gates with vehicles
- Use of horses
- Use of motorized vehicles or ATVs
- Baiting

- Construction of permanent blinds or damage to trees
- Leaving portable blinds overnight,
- and hunting from stands left up overnight
- Use or possession of alcoholic beverages while hunting
- Target practice

The following activities are also prohibited on Horicon NWR:

- Toxic shot when hunting small game
- Shining
- Boats
- Scouting

The following activities are also prohibited on the Horicon Marsh State Wildlife Area: Toxic shot when hunting mourning doves.

### **5.2.3. Access on Horicon National Wildlife Refuge**

Access to the Refuge is restricted to an hour before to an hour after legal shooting hours.

### **5.2.4. Special Regulations**

Placement of decoys or shooting at the Refuge boundary is allowed, provided the hunter is at least 75 yards away from the refuge when shooting at any waterfowl.

## **5.3. Fox River NWR Background and Seasons**

The Refuge has provided public hunting and administered a hunting program for deer beginning in 1984. For almost 20 years, deer hunting was conducted via a permit system for at least part of the deer season, which required a lot of staff time to manage. Finally in 2003, Refuge staff stopped the permit hunts and allowed deer hunting at Fox River NWR according to the State seasons (Refuge Annual Narrative Reports). The only “State” season that the Refuge has not allowed at Fox River NWR is the October antlerless gun hunts, which were common several years ago.

A hunting pamphlet is prepared each year that lists the season dates and other rules/regulations pertinent to the hunt (see Appendix 2).

Access is provided for hunting through two parking lots off of County Road F on the east side of the Refuge. Access is restricted to an hour before to an hour after legal hunting hours. No ATVs or boats are allowed on the Refuge; however, boats are allowed on the river itself to access the west side of the Refuge.

Scouting prior to the hunting season is not allowed because the Refuge is not open for any other uses. Hunters must wait until the hunting season opens and scout at that time.

## **5.4. Fox River NWR Current Hunt Program Overview**

### **5.4.1. General**

The Refuge is located within the Central Farmland Deer Management Zone. It is open to hunting only white-tailed deer, on designated areas of the refuge, subject to the following conditions:

1. Refuge permits and a State hunting license are required during designated time periods.
2. Hunting is allowed only during the State archery, muzzleloader, and firearms seasons and during a designated time period of the archery season.
3. Construction or use of permanent blinds, platforms, or ladders is not allowed.
4. All stands must be removed from the refuge following each day's hunt. Hunting from any stand left up overnight is prohibited.
5. Refuge access is one hour before to one hour after legal shooting hours.
6. Any ground blind used during any gun deer season must display at least 144 square inches of solid blaze-orange material visible from all directions.

### **5.4.2. Prohibited Activities**

Other prohibited activities include scouting, camping, fire in any form, littering, baiting, and shining to locate or harvest deer.

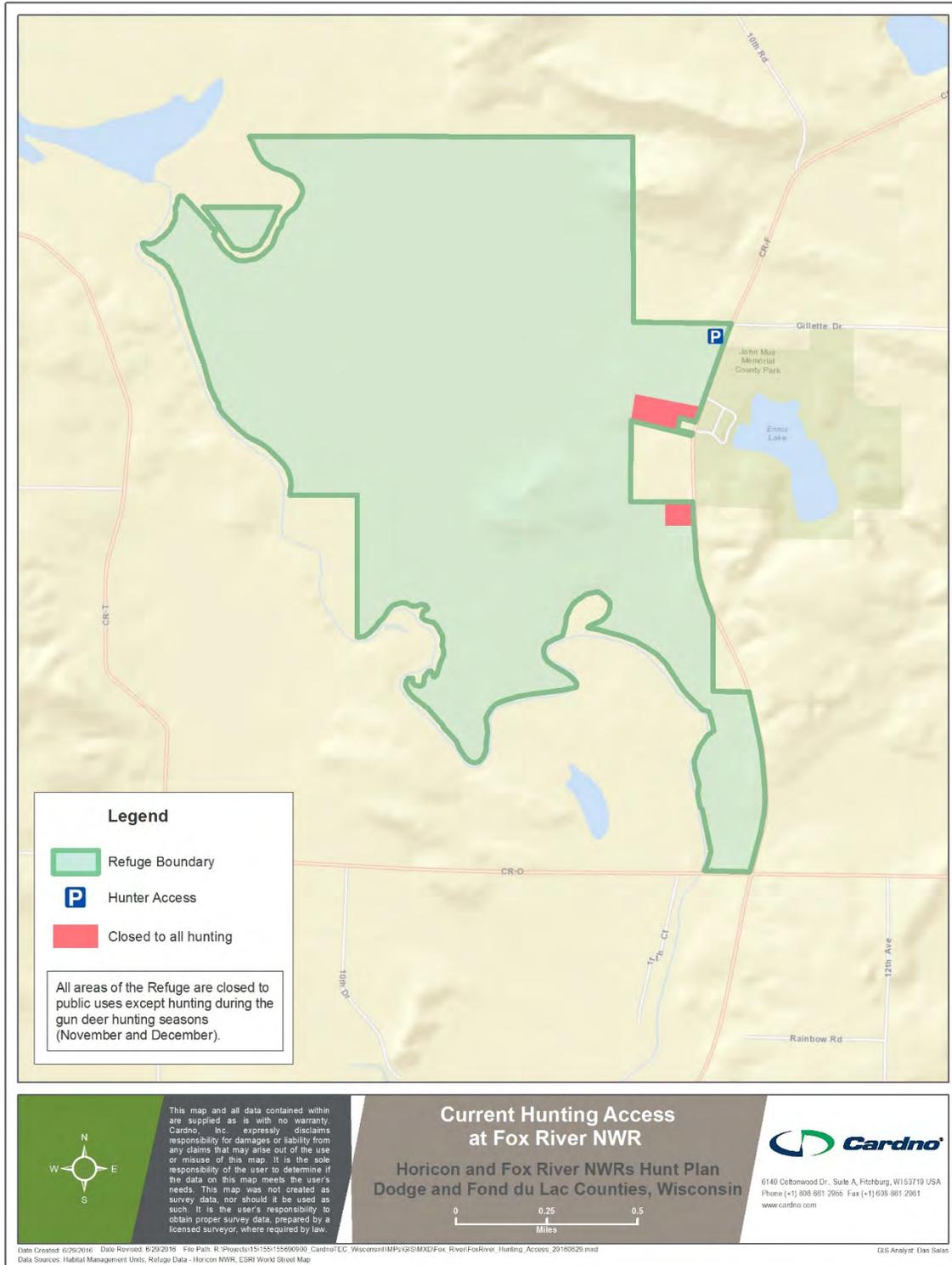
### **5.4.3. Access on Fox River National Wildlife Refuge**

Access is restricted to an hour before to an hour after legal hunting hours. Parking is allowed in designated parking lots only. Boats are prohibited on the refuge, but they may be used on the river to access the west side of the refuge.

### **5.4.4. Special Regulations**

Hunters may not enter areas posted as "NO HUNTING ZONE."

**Figure 4. Existing access for hunting at Fox River NWR**



## 5.5. Current Refuge Hunting Regulations and Opportunities

Refuge managers open national wildlife refuges to hunting according to State seasons where and when those seasons comply with the three primary purposes for with hunting regulations on refuges: conserving the resource, assisting in managing the resources, and ensuring safety. However, if State regulations do not completely address these criteria, Refuge-specific regulations may be necessary. Refuge-specific regulations should focus primarily on the management of fish and wildlife resources and be enforceable. Refuge managers work cooperatively with State fish and wildlife agencies to develop and implement refuge-specific regulations. The following sections describe Refuge-specific regulations for Horicon and Fox River NWRs.

### 5.5.1. Horicon NWR

#### *Federal Regulations (50CFR32.69)*

##### Section A. Migratory Game Bird Hunting

We allow hunting of duck and coot on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. We require permits.
2. We allow only participants in the Young Wildfowlers and Special Programs to hunt.

##### Section B. Upland Game Hunting

We allow hunting of ring-necked pheasant, gray partridge, squirrel, and cottontail rabbit on designated areas of the refuge in accordance with State regulations during the State seasons subject to the following conditions:

1. Shotgun hunters may possess only approved nontoxic shot while hunting upland game species.
2. Hunting in the youth/novice pheasant hunt area (Area F) is for youth who are 12-15 years of age, and by permit.

##### Section C. Big Game Hunting

We allow hunting of white-tailed deer on designated areas of the refuge in accordance with State regulations subject to the following conditions:

1. We allow hunting during the State archery, muzzleloader, and State firearms seasons.
2. We do not allow the construction and use of permanent blinds, platforms, or ladders.
3. You must remove all stands from the refuge following each day's hunt.
4. Hunting in the area surrounding the office/visitor center (Area E) is by permit only.
5. Hunting in the Auto Tour/hiking trail complex (Area D) is only open during the State firearms deer season.

6. Any ground blind used during any gun deer season must display at least 144 square inches (936 square centimeters) of solid-blaze orange material visible from all directions.

### ***Consultation and Coordination with the State***

Since 1993, the Refuge and Wisconsin DNR have worked together to provide the public with a combined hunting map for the entire Horicon Marsh, which explains the different regulations for each area (see Appendix 1). Following the adoption of this revised plan, the Refuge will consult and coordinate with Wisconsin DNR to address annual implementation of hunting activities.

### ***Methods of Control and Enforcement***

Law enforcement of Refuge and State hunting regulations, trespass and other violations associated with management of the Refuge is the responsibility of a commissioned Refuge Law Enforcement Officer, who works closely with the Wisconsin DNR game wardens. On-going coordination and communication is conducted throughout the year.

### ***Funding and Staffing Requirements***

The hunting program is designed to be administered with minimal refuge resources. The annual costs of enforcing a hunting program on the Refuge comes out of the Refuge's annual budget. Expenses include boundary posting, signage, brochures, parking lot construction, facility maintenance, gate installation, and other hunting specific activities.

## **5.5.2. Fox River NWR**

### ***Federal Regulations (50CFR32.69)***

Section A. Migratory Game Bird Hunting (Reserved).

Section B. Upland Game Hunting (Reserved).

Section C. Big Game Hunting. We allow hunting of white-tailed deer on designated areas of the refuge subject to the following conditions:

1. We require refuge permits during designated time periods.
2. We do not allow the construction or use of blinds, platforms, or ladders.
3. We allow hunting only during the State firearms season and during a designated time period of archery season.

Section D. Sport Fishing (Reserved).

### ***State Regulations (§32.69 Wisconsin.)***

The following refuge units have been opened to hunting and/or fishing, and are listed in alphabetical order with applicable refuge-specific regulations.

Fox River National Wildlife Refuge

Section A. Migratory Game Bird Hunting. [Reserved]

Section B. Upland Game Hunting. [Reserved]

Section C. Big Game Hunting. We allow hunting of white-tailed deer on designated areas of the refuge in accordance with State regulations and seasons, and subject to the following conditions:

1. We prohibit the construction or use of permanent blinds, platforms, or ladders.
2. We allow hunting during the State archery, crossbow, muzzleloader, and firearms seasons.
3. You must remove all stands from the refuge following each day's hunt. We prohibit hunting from any stand left up overnight.
4. Refuge access is from 1 hour before to 1 hour after legal shooting hours.
5. Any ground blind used during any gun deer season must display at least 144 square inches (929 square centimeters) of solid, blaze-orange material visible from all directions.

Section D. Sport Fishing. [Reserved]

#### ***Consultation and Coordination with the State***

The Refuge Law Enforcement Officer and the Wisconsin DNR Conservation Wardens have always worked closely together in enforcement at Fox River National Wildlife Refuge. With Fox River Refuge being an hour from the Horicon Refuge office, staff has relied on Wisconsin DNR for a variety of issues. Following the adoption of this revised plan, the Refuge will consult and coordinate with Wisconsin DNR to address annual implementation of hunting activities.

#### ***Methods of Control and Enforcement***

Law enforcement of Refuge and State hunting regulations, trespass and other violations associated with management of the Refuge is the responsibility of a commissioned Refuge Law Enforcement Officer, who works closely with the Wisconsin DNR game wardens. On-going coordination and communication is conducted throughout the year.

#### ***Funding and Staffing Requirements***

The hunting program is designed to be administered with minimal refuge resources. The annual costs of enforcing a hunting program on the Refuge comes out of the Refuge's annual budget. Expenses include boundary posting, signage, brochures, parking lot construction, facility maintenance, gate installation, and other hunting specific activities.

## **6. PROPOSED CHANGES TO HUNTING PROGRAM**

This hunt plan presents a hunting program for both Refuges with updates from the current program. While many elements of the current hunt program remain in place, opportunities to expand the hunting program where minimal conflicts with other public and wildlife uses exist have been provided.

## **6.1. General Elements of Current Hunt Program to Continue**

Horicon NWR will continue to be closed to waterfowl hunting, except for special hunts (e.g. Learn to Hunt programs or similar). The refuge-specific hunting and fishing regulations will be summarized on the Refuge Web site. Public understanding of Refuge hunting opportunities will be enhanced by increasing the quality of maps, signs, and wording within brochures and on the Refuge web page. To ensure quality, ethical hunting encouraging fair chase pursuit, Refuge staff will increase visibility of Refuge law enforcement and hunter adherence to federal and state regulations.

In addition, staff at Horicon NWR will continue to:

- Allow access on dikes north of Ledge Road for all hunting seasons (change from what was noted in the 2007 Horicon and Fox River NWR Comprehensive Conservation Plan).
- Limit access hours to 1-hour before and after legal shooting hours.
- Enforce currently prohibited activities (see Hunting Map and Brochure, 50CFR).
- Conduct informal survey/interact with hunters and listen to feedback on ways to improve hunt.
- Monitor for signs of habitat damage such as browse lines on the Refuge that would indicate further monitoring of deer population is needed to address negative impacts to habitat.

In cooperation with the Wisconsin DNR, continue to:

- Evaluate the health of individual animals and herds using standard monitoring techniques,
- Submit diseased wildlife and/or carcasses for diagnostic and report any signs of diseased wildlife to the USGS National Wildlife Health Center and Wisconsin DNR.

## **6.2. New Hunting Program: Horicon NWR**

### **6.2.1. Access**

Continue to:

- Annually provide visitors access to numerous hunting opportunities.
- Enforce currently prohibited activities (see Appendix 1, Hunting Map and Brochure, 50CFR)
- Conduct hunter and vehicle counts, through staff and volunteers, at all hunting access points to gain an index on hunting pressure and collect additional hunting data.
- Allow “special hunts” consisting of youth and Learn to Hunt program in partnership with State and Ducks Unlimited.
- Provide Disabled deer hunt allowed in “special area” (E)
- Allow Auto Tour route open only during 9-day gun season and any additional Statewide antlerless gun hunts (D)

Plus:

- Define and improve public-facing signage and communication regarding regulations to open areas from closed areas (with hunting weapons and game)
- Amend restricted use hunting areas to expand hunting or avoid user conflicts where possible:
  - Areas D [update language to clarify seasons],
  - Area E [expanding closed areas to include the 45 acres around the Refuge office/visitor center due to new trail, adjacent to visitor's center],
  - Area F [convert to standard hunting regulations] on the Refuge hunting brochure map).
- Expand volunteer involvement in hunter and vehicle counts
- Open 86 acres, including two parcels acquired since 2006 to general hunting requirements
- Evaluate and Update “special waterfowl hunts” to include programs such as Learn to Hunt (including first-time adults), disabled hunts, and other specially designated programs.
- Evaluate adding a disabled turkey hunt to Area (E).

#### 6.2.2. **Facilities**

Continue to:

- Maintain 10 blinds and access to blinds for disabled deer hunts.

Plus:

- Consider additional blinds as public interest and funding allow.
- Adjust hunting/boundary signs to reflect changes in finalized Hunt Plan (e.g. Area F and disabled hunt boundary near visitor center).

#### 6.2.3. **Communication Resources**

Continue to:

- Update and maintain web information links with new information.

Plus:

- Replace or install new information boards at hunter access points. Develop area regulation signs for information boards with updated information hunting access and regulations.
- Update refuge hunting map/brochure with the most current regulations and access.

#### 6.2.4. **Hunting Seasons**

- Upland Game Hunting
  - Expand refuge-wide general regulations to include Zuelke 86 acres and current youth pheasant area (Area F).
- Migratory Bird Hunting
  - Add all waterfowl to “special hunts”, following state season and bag limits.

- Turkey Hunting
  - Add turkey hunting under state regulations/seasons, with option to reevaluate after data from initial seasons is reviewed and a follow up assessment of impacts or conflicts is completed based on actual use.
  - Add turkey hunting under state regulations/seasons and by special permit for disabled hunters in Area 3.
- Deer Hunting
  - Maintain existing access and regulations, plus add former youth pheasant area and Zuelke to deer hunting general regulations area.

### **6.3. New Hunting Program: Fox River NWR**

#### **6.3.1. Access**

Continue to:

- Maintain restricted access to all public uses, except for deer hunting seasons.
- Enhance public understanding of Refuge hunting opportunities by increasing the quality of maps, signs, and wording within brochures and on the Refuge web page.

Plus:

- Restrict access to one hour before through one hour after legal hunting hours.
- Formally open new land acquisitions Owens (55 acres) and McCreath (25 total) properties to deer hunting following state regulations.

#### **6.3.2. Facilities**

Continue to maintain existing boundary signs.

#### **6.3.3. Communication Resources**

Continue to:

- Update and maintain web information links with new information.

Plus:

- Update refuge hunting map/brochure with the most current regulations and access.

#### **6.3.4. Hunting Seasons**

Continue to:

- Use regulated hunting every fall during all state seasons, including archery and crossbow, gun, muzzleloader, and special hunts.
- Not allow Upland Game, Migratory Bird, Turkey, or furbearer hunting

Plus:

- Formally open the Owens and McReath properties to deer hunting.

## **6.4. New Hunting Regulations and Opportunities**

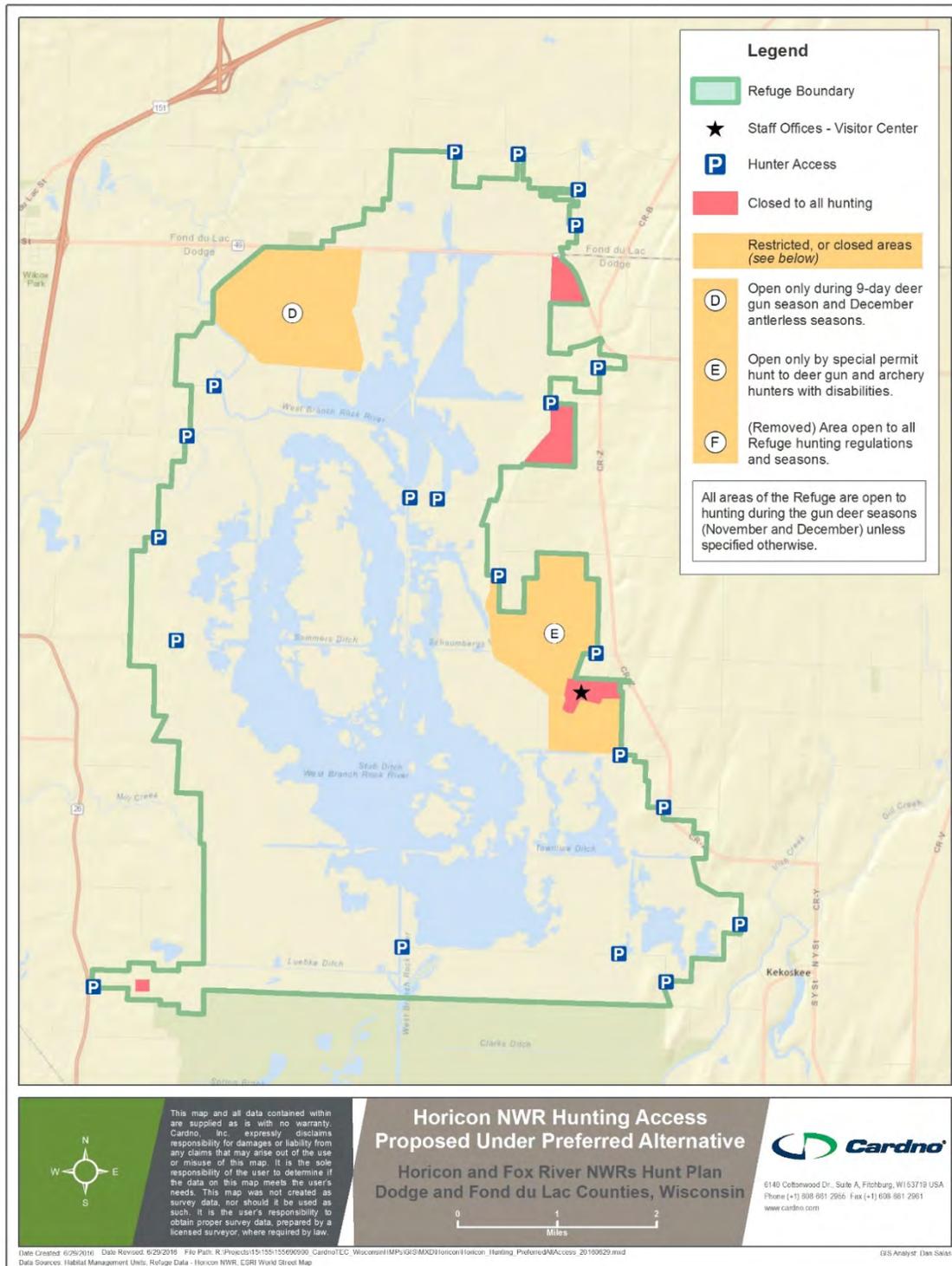
### **6.4.1. Horicon NWR - New Opportunities and Revisions Proposed to Current Regulations**

Within the Learn to Hunt Waterfowl program, participants are currently allowed to shoot ducks and coot. Refuge staff would like to add geese as a species that the youth hunters can also have the opportunity to shoot.

The youth/novice pheasant hunt area on the west side of the Refuge has received little use in the past 14 years and has restricted access for hunters who are wanting to hunt on the west side of the refuge. Opening this area to all hunters for pheasant, rabbit, partridge, squirrel and deer hunting like the rest of the 21,768 acres would allow for better access to the west side of the refuge across Dike Road. There is also a small parking lot built in 2012. Currently hunters can only access one of the dead-end township roads north of Dike Road (Peachy, Milligan, Neitzel, or Sommers Roads) in order to access the refuge on the west side. Sommers Road is 3.5 miles north of Dike Road, with no access in between these two roads due to private property. Without Dike Road as an access, the only other access point to the Refuge is by parking at the State parking lot, about 1/2 miles south of Dike Road and walking a rough path north to Dike Road. The private inholding in the middle of the 145 acres is surrounded by a buffer of “no hunting.”

Turkeys have become so abundant on the Refuge that it is common to see them when driving around the Refuge. Under this updated hunt plan, the Refuge would allow turkey hunting under state regulations/seasons. Refuge staff expect turkey hunting participation at Horicon NWR to generally be low due to limited suitable habitat on the refuge for turkey. However, given the uncertainty of the actual use, the Refuge is including the option to reevaluate after data from initial seasons is reviewed and a follow up assessment of impacts or conflicts is completed based on actual use. All other state regulations would be in effect.

**Figure 4: Proposed Horicon NWR Hunting Access and Restricted Use Areas**



**6.4.2. Horicon NWR - Updated Regulations Proposed to 50CFR32.69**

Regulations will be updated after public review/comment period and will be included in Final Hunt Plan.

**6.4.3. Fox River NWR - Updated Regulations Proposed to 50CFR32.69**

Regulations will be updated after public review/comment period and included in the Final Hunt Plan.

## **7. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT OBJECTIVES**

### **7.1. Horicon NWR**

Hunting has shown no measureable environmental impact to the Refuge, its habitats, or wildlife species. The Refuge hunting program follows all applicable laws, regulations and policies; including Migratory Bird Conservation Act, 50 CFR, National Wildlife Refuge System Manual, and the National Wildlife Refuge System goals and objectives. The hunting program supports primary objectives of the Horicon National Wildlife Refuge and does not interfere with the Refuge's ability to meet habitat goals. It has been determined compatible with the purpose of the Refuge and the National Wildlife Refuge System Mission.

Hunting is a priority public use listed in the National Wildlife Refuge System Improvement Act. By facilitating this use on the Refuge, visitors' knowledge and appreciation of wildlife is increased which can result in increased public support for wildlife and their habitats. Increased public stewardship complements the U.S. Fish and Wildlife Service's actions to accomplish the Refuge's purposes and the mission of the National Wildlife Refuge System.

#### **7.1.1. Biological Conflicts**

The Refuge avoids potential conflicts related to biological resources by adopting the "wildlife first" principle explicitly stated in the Improvement Act. Staff along with Wisconsin DNR and other wildlife professionals monitors wildlife population trends to ensure that target species can be hunted at the refuge without adversely affecting the species. These monitoring activities include direct observation of populations, consultation with state and federal resource specialists, and review of current species survey information and research. Although not proposed in this plan, the Refuge, in the future, could limit or exclude hunting activities on portions of the Refuge to avoid conflicts related to biological resources.

In specific reference to the Refuge purpose, "for the protection and preservation of migratory birds," disturbance is minimal. Hunters are accessing mostly uplands in the fall in search of pheasant, partridge, rabbit, squirrel, turkey, and deer. Uplands are used by migratory birds as well. Hunters are not in the wetlands inhabited by migratory birds during their nesting seasons. However the time of year in which hunting occurs generally avoid disturbance to nesting birds. Boats and ATVs are not allowed. Vehicles are only allowed on the Auto Tour or the eastern half of Main Dike Road. However, the Auto Tour route is closed to vehicles during the gun deer seasons. Hunters are only allowed to walk or ride a bicycle to access hunting.

#### **7.1.2. Public Use Conflicts**

Public uses are developed to complement each other and reduce conflict. Wildlife observation, photography, environmental education, interpretation, hunting and fishing are current activities at the Refuge. No conflicts are expected but if conflicts arise, Refuge management may limit hunting or restrict other public uses during the hunting season to ensure public safety.

Currently the majority of the Refuge boundary is posted with boundary signs. Areas closed to hunting are clearly marked with the "No Hunting Zone" signs. The disable hunt area is posted with signs that read "Hunting by Permit Only" and the Auto Tour/Hiking Trail Complex is

posted with signs that read “Closed to Hunting Except the State 9-Day Gun Season.” Note, these signs need to be replaced to say “rifle” rather than “deer gun.” The area is not open for muzzleloader season and some would consider muzzleloader a “deer gun” season. Currently, the Refuge closes the Auto Tour/Hiking Trail Complex to other public uses during the Central Farmland Hunt around December 10-13.

As stated earlier in this document, there is a potential conflict with hikers and other users who want to use the Auto Tour/Hiking Trail Complex during the two shotgun seasons when it is open to hunters. They are still allowed to use the area, but must wear blaze orange; as an alternative, the Bud Cook Hiking Area is closed to all hunting.

### **7.1.3. Administrative Conflicts**

At this time, no administrative conflicts are anticipated. As the hunt program evolves over the years, Refuge-specific regulations may change at Refuge Manager’s discretion.

## **7.2. Fox River NWR**

Hunting has shown no measureable environmental impact to the Refuge, its habitats, or wildlife species. The Refuge hunting program follows all applicable laws, regulations and policies; including 50 CFR, National Wildlife Refuge System Manual, and the National Wildlife Refuge System goals and objectives. The hunting program supports primary objectives of the Fox River National Wildlife Refuge and does not interfere with the Refuge’s ability to meet habitat goals. It has been determined compatible with the purpose of the Refuge and the National Wildlife Refuge System Mission.

Hunting is a priority public use listed in the National Wildlife Refuge System Improvement Act. By facilitating this use on the Refuge, visitors’ knowledge and appreciation of wildlife is increased which can result in increased public support for wildlife and their habitats. Increased public stewardship complements the U.S. Fish and Wildlife Service’s actions to accomplish the Refuge’s purposes and the mission of the National Wildlife Refuge System.

### **7.2.1. Biological Conflicts**

The Refuge avoids potential conflicts related to biological resources by adopting the “wildlife first” principle explicitly stated in the Improvement Act. Staff along with Wisconsin DNR and other wildlife professionals monitors wildlife population trends to ensure that target species can be hunted at the refuge without adversely affecting the species. These monitoring activities include direct observation of populations, consultation with state and federal resource specialists, and review of current species survey information and research. Although not proposed in this plan, the Refuge, in the future, could limit or exclude hunting activities on portions of the Refuge to avoid conflicts related to biological resources.

In specific reference to the Refuge purpose, “for the protection and preservation of migratory birds”, disturbance is minimal. Hunters are accessing mostly uplands in the fall in search of deer; the hunters are not in the wetlands inhabited by the migratory birds. Boats and ATVs are not allowed. Vehicles are only allowed in the parking lots.

### **7.2.2. Public Use Conflicts**

Public uses are developed to complement each other and reduce conflict. The only public use on the refuge is refuge authorized interpretive hikes. Wildlife observation and photography are available from County Road F, but fishing is not yet allowed. No conflicts are expected.

Currently the majority of the Refuge boundary is posted with boundary signs. Areas closed to hunting are clearly marked with the “No Hunting Zone” signs.

One of the Refuge access roads crosses through an adjacent landowner’s property. Years ago there were conflicts when hunters would drag deer down the road, causing the landowner’s dog to become agitated. At the request of the landowner, Refuge staff posted the area as closed.

Conflicts would also arise due to a private inholding right in the middle of the Refuge, creating trespass problems with hunters, as well as access problems for the landowners. However, the inholding has recently been sold to the Refuge.

### **7.2.3. Administrative Conflicts**

At this time, no administrative conflicts are anticipated. As the hunt program evolves over the years, Refuge-specific regulations may change at Refuge Manager’s discretion.

## 8. CONDUCT OF THE HUNTING PROGRAM

### 8.1. Hunting Regulations

Regulations pertaining to hunting on all National Wildlife Refuges are found in the Code of Federal Regulations (CFR) 50 CFR 32.2. Copies of the CFR can be found online and in area libraries; in addition Refuge specific regulations are available on the Refuge's website. National Wildlife Refuge regulations are included below:

§ 32.2 What are the requirements for hunting on areas of the National Wildlife Refuge System?

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.

## **8.2. Horicon NWR**

### **8.2.1. Anticipated Public Reaction to the Hunt**

For many years hunting has been an accepted and popular activity on the Refuge. User conflicts between hunting and non-hunting visitors have been minimal; however, adjacent private landowners have had issues with trespassing. The trespass issue is most prevalent on the inholding on the west side. These concerns have been dealt with by law enforcement and management on a case-by-case basis in the past. Several neighbors who live close to the Refuge boundary have expressed concern over the years regarding their safety due to hunters hunting close to their homes/property. But overall, public hunting on the Refuge is viewed as a positive and accepted use of Refuge property.

### **8.2.2. Hunter Application and Registration**

For general hunting activities, no special application or registration process is required. An application process is required for the disabled hunts and for the Learn to Hunt Waterfowl program/hunt.

### **8.2.3. Hunter Selection**

For general hunting activities, there is no special hunter selection process. Hunters who are eligible to hunt under Wisconsin law are allowed to hunt on the Refuge. To date, a selection process has not had to be initiated for the disabled hunts. As popularity has increased over the years, the season has been split so as to accommodate all the hunters. However, sometimes hunters don't necessarily get their first preference for the time period that they have selected as that is filled by a first come, first serve basis, but they are always able to hunt. Because so few hunters apply for the disabled archery/crossbow hunt, there is currently no set limit. All applicants in the Learn to Hunt Waterfowl program were accommodated this past year, but future years may require that first time applicants be given priority.

#### **8.2.4. Announcing and Publicizing Hunts**

A general news release about hunting on the Refuge is sent to local newspapers each year. In addition, a news release is sent out for the disabled hunt programs and the Learn to Hunt Waterfowl program.

Regarding this Hunting Plan, a public notice will be sent to all local newspapers. Information will also be posted at the Horicon National Wildlife Refuge office, the local Wisconsin DNR office, and on websites and Facebook pages for the above. Upon completion, this plan will be available for public review for 30 days.

#### **8.2.5. Hunting Orientation and Safety**

Hunter orientation to Refuge lands and property within the Horicon National Wildlife Refuge is provided through an annual news release to area papers and through Refuge signs, brochures, and maps. The Refuge does not require specific orientation or safety training for individuals participating in general hunting activities; however, the state of Wisconsin has requirements for hunter education and safety training and offers an annual course schedule. First time participants in the disabled hunt program are given a one hour tour of the area, along with an orientation to the rules and regulations. The Learn to Hunt Waterfowl program includes a four hour classroom session, which includes safety and hunting techniques.

#### **8.2.6. Entry and Access Procedures**

There are no special entry or access procedures for hunters using the Refuge. All hunters are restricted to an hour before to an hour after legal hunting hours.

#### **8.2.7. Hunter Requirements**

There are no special requirements 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 an additional reporting program be implemented, the Refuge will use appropriate forms approved by the Office of Management and Budget. Hunters participating in the disabled hunts and Learn to Hunt Program follow strict reporting requirements.

All shotgun hunting (excluding deer hunting) must use non-toxic ammo, including turkey. Hunting dogs may be used for hunting small game and migratory birds; the Refuge may not be used for dog training not associated with an actual hunt. Target shooting, camping and camp fires are prohibited on the Refuge. No motorized vehicles are allowed within the Refuge unless authorized through a special use permit issued by Refuge management.

## **8.3. Fox River NWR**

### **8.3.1. Anticipated Public Reaction to the Hunt**

Deer hunting has been an accepted and popular activity on the Refuge. User conflicts between visitors hunting and neighboring private landowners have been minimal; however, adjacent private landowners have had issues with trespassing. These concerns have been dealt with by law enforcement and management on a case-by-case basis in the past. Overall, public hunting on the Refuge is viewed as a positive and accepted use of Refuge property.

### **8.3.2. Hunter Application and Registration**

For general hunting activities, no special application or registration process is required.

### **8.3.3. Hunter Selection**

There is no special hunter selection process. Hunters who are eligible to hunt under Wisconsin law are allowed to hunt on the Refuge.

### **8.3.4. Announcing and Publicizing Hunts**

A general news release about hunting on the Refuge is sent to local newspapers each year.

Regarding this Hunting Plan, a public notice will be sent to all local newspapers. Information will also be posted at the Horicon National Wildlife Refuge office, the local Wisconsin DNR office, and on websites and Facebook pages for the above. Upon completion, this plan will be available for public review for 30 days.

### **8.3.5. Hunting Orientation and Safety**

Hunter orientation to Refuge lands and property within the Horicon National Wildlife Refuge is provided through an annual news release to area papers and through Refuge signs, brochures, and maps. The Refuge does not require specific orientation or safety training for individuals participating in general hunting activities; however, the state of Wisconsin has requirements for hunter education and safety training and offers an annual course schedule.

### **8.3.6. Entry and Access Procedures**

There are no special entry or access procedures for hunters using the Refuge. All hunters are restricted to an hour before to an hour after legal hunting hours.

### **8.3.7. Hunter Requirements**

There are no special requirements to hunt on the Refuge. The refuge does not require hunters to report on hunting activities. Should an additional reporting program be implemented, the Refuge will use appropriate forms approved by the Office of Management and Budget.

## 9. REFERENCES

Fox River NWR Annual Narrative Reports, 1979 through 2012.

Horicon NWR Annual Narrative Reports, 1941 through 2012.

U.S. Fish and Wildlife Service. 1987. Fox River National Wildlife Refuge: Policy Compliance Document. March.

U.S. Fish and Wildlife Service. 2007. Horicon National Wildlife Refuge Comprehensive Conservation Plan. U.S. Dept. of Interior, Fish and Wildlife Service, Region 3, Fort Snelling, MN.

U.S. Fish and Wildlife Service. 2012. Waterfowl Population Status, 2012. U.S. Department of Interior, Washington D.C.

U.S. Fish and Wildlife Service. 2014. Strategy to Increase Quality Hunting and Fishing on National Wildlife Refuges. U.S. Dept. of Interior, Fish and Wildlife Service, Washington D.C.

Wisconsin DNR. Wisconsin DNR Website. <http://dnr.wi.gov/topic/hunt>. Last accessed May 24, 2016.

# Appendix 1. Horicon NWR Hunting Map and Brochure, 2015

## Prohibited Activities

In addition to the prohibited activities listed in the Wisconsin Hunting Regulations pamphlets, the following are also prohibited on both the **Horicon National Wildlife Refuge** and the **Horicon Marsh State Wildlife Area**:

- Overnight camping or parking
- Open fires
- Blocking access to gates with vehicles
- Use of horses
- Use of motorized vehicles or ATVs
- Baiting
- Construction of permanent blinds or damage to trees
- Leaving portable blinds overnight, and hunting from stands left up overnight
- Use or possession of alcoholic beverages while hunting
- Target practice

The following activities are also prohibited on the **Horicon National Wildlife Refuge**:

- Toxic shot when hunting small game
- Shining
- Boats
- Scouting

The following activities are also prohibited on the **Horicon Marsh State Wildlife Area**:

- Toxic shot when hunting mourning doves

## Special Regulations

- Placement of decoys or shooting at of the Horicon National Wildlife Refuge boundary is allowed, provided the hunter is at least 75 yards away from the refuge when shooting at any waterfowl.
- Access on Horicon National Wildlife Refuge is restricted to an hour before to an hour after legal hunting hours.

## The Horicon Marsh

The 33,000 acre Horicon Marsh is divided into the **Horicon National Wildlife Refuge** (managed by the U.S. Fish and Wildlife Service) and the **Horicon Marsh State Wildlife Area** (managed by the Wisconsin Department of Natural Resources). The two areas have different regulations and different season dates. You are responsible for knowing the boundaries and abiding by these regulations. Make sure to check zones and acquire the proper tags for the areas you will be hunting. For more info on state-wide hunting zones visit <http://dnr.wi.gov>.

## Horicon National Wildlife Refuge

The **Horicon National Wildlife Refuge** is only open for hunting of squirrel, pheasant, partridge, rabbit and deer in accordance to all current statewide seasons and regulations. Refer to the map for areas that are restricted or closed.

## Horicon Marsh State Wildlife Area

The **Horicon Marsh State Wildlife Area** is open for hunting of all species in accordance with all current statewide hunting seasons and regulations. Refer to the map for areas that are restricted or closed.

The State area is located in Turkey Zone 2 and Deer Management Unit 68B.

Horicon National Wildlife Refuge  
W4279 Headquarters Road  
Mayville, WI 53050

Phone: 920/387 2658 Refuge Warden: 920/948 2579  
People with hearing disabilities may contact the refuge via the Federal Information Relay System at 1 800/877 8333

Website:  
<http://www.fws.gov/refuge/horicon>



Horicon Marsh State Wildlife Area  
N 7725 Highway 28  
Horicon, WI 53032-1060  
Phone: 920/387 7860  
Report Violations: 1-800-TIP-WDNR

Website:  
[www.dnr.wi.gov/topic/lands/WildlifeAreas/horicon](http://www.dnr.wi.gov/topic/lands/WildlifeAreas/horicon)



U.S. Fish & Wildlife Service

**Horicon**  
*National Wildlife Refuge  
& Horicon Marsh State  
Wildlife Area*



*Hunting Map  
& Regulations*

Printed August 2014

## Signs on Horicon National Wildlife Refuge Know Their Meaning!



No hunting is allowed



Refuge Boundary Sign  
Hunting is an authorized use of the refuge in designated areas.



This area is open by special permit to deer gun and archery hunters with disabilities. (Area E on map)



This area is open only during the nine-day deer shotgun season in November and to the antlerless seasons in December. (Area D on map)

## Signs on Horicon Marsh State Wildlife Area Know Their Meaning!



Closed to pheasant hunting after 2 p.m. in accordance with the dates on the sign.



Open for hunting in accordance with statewide hunting seasons and regulations.



This area (around Burnett Impoundment) is closed to all hunting or trapping except during gun deer season.



## Appendix 2. Fox River Hunting Brochure and Map, 2015

### REGULATIONS

- Fox River National Wildlife Refuge is not open for any public use at this time except deer hunting.
- The Refuge is located within the Central Farmland Deer Management Zone; all Wisconsin state regulations for this unit are in effect. No special refuge permits are required.
- The Refuge is open in accordance to current statewide seasons and regulations. Regulations. Refer to the 2015 Wisconsin Deer Hunting Regulations Publication (PUB-WM-431 2015). Additional regulations pertaining to National Wildlife Refuges can be found on page 38.
- 2015 state seasons are as follows:
  - **Archery: Sept. 12– Jan. 3**
  - **Gun: Nov. 21 – 29  
Dec. 10 – 13 (Antlerless Only)**
  - **Muzzleloader: Nov. 30 – Dec. 9**
  - **Youth Gun Hunt: Oct. 10 - 11**
- Access is restricted to an hour before to an hour after legal hunting hours.
- Parking allowed in designated parking lots only.
- Boats are prohibited on the refuge but may be used on the river to access the west side of the refuge.
- Foot travel only.
- Hunters may not enter areas posted as "NO HUNTING ZONE."

- Portable tree stands may be used but cannot be left overnight.
- Construction or use of permanent blinds or tree stands is prohibited.
- Other prohibited activities include: scouting, camping, fires in any form, littering, baiting, and shining to locate or harvest deer.
- Hunters must not trespass onto private land. The refuge boundary is clearly posted with white "National Wildlife Refuge" signs.
- Practice firearm safety at all times
- Report all accidents or injuries to Refuge Wildlife Officer.

### OTHER INFORMATION

Fox River National Wildlife Refuge was purchased in 1979 to protect wetland habitat for the greater sandhill crane and other migratory wetland birds. For more information visit the refuge webpage. [http://www.fws.gov/refuge/fox\\_river/](http://www.fws.gov/refuge/fox_river/)

Call Federal Wildlife Officer for questions or to report a violation

Refuge Officer John Below  
Horicon National Wildlife Refuge  
W4279 Headquarters Rd.  
Mayville, WI 53050  
920-387-2658 ext. 116  
(920) 948-2579 cell

## Fox River National Wildlife Refuge

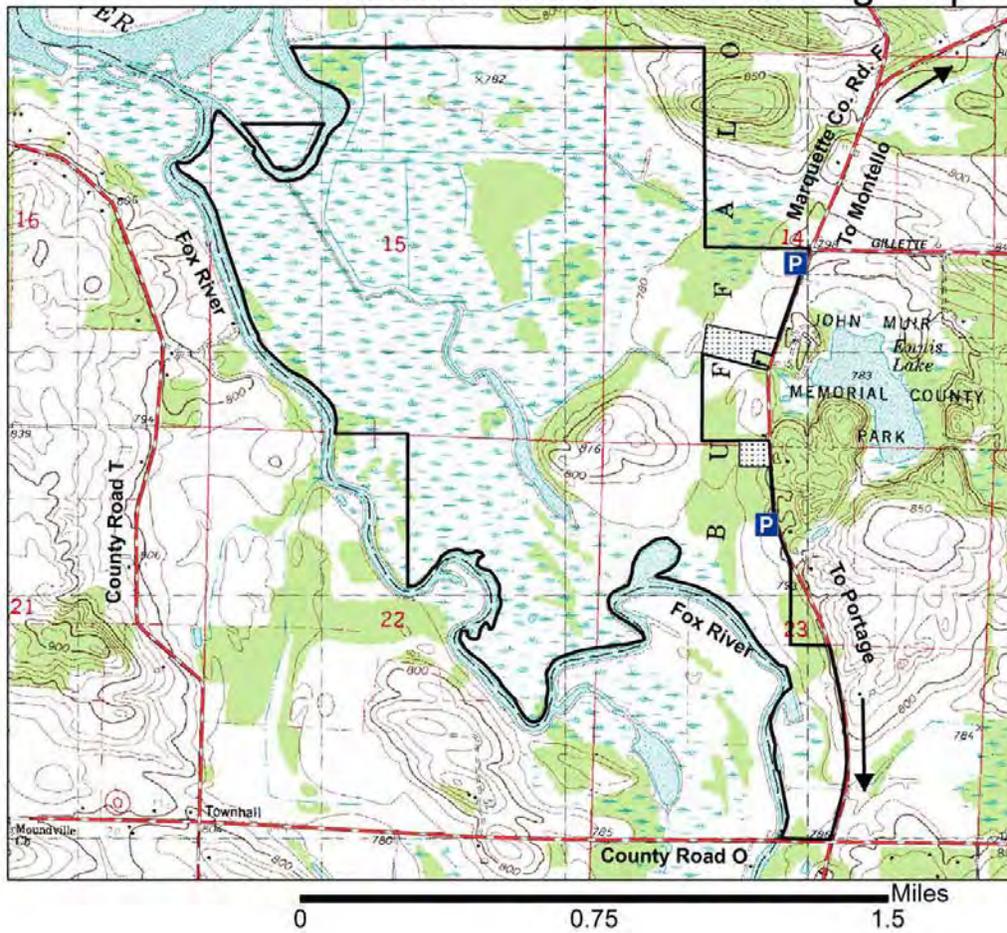
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### 2015 Deer Hunting Map And Regulations

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### Fox River NWR Deer Hunting Map



#### Legend

- Parking
- No Hunting Zone
- Refuge Boundary
- Wetland
- Forest

Fox River  
National Wildlife Refuge  
Marquette County  
Wisconsin

United States  
Fish and Wildlife Service  
Department of Interior



1,075 Acres

T14N R9E