

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

**Final (04/07)**

**for**  
**Proposed Hunting Plan for Agassiz National Wildlife Refuge**  
**Marshall County, Minnesota**

**Regional Director**  
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**Abstract:** The United States Fish and Wildlife Service proposes to provide additional hunting opportunities on the Agassiz National Wildlife Refuge in Marshall County, Minnesota that are compatible with the purpose of the Refuge. This environmental assessment evaluates three possible alternatives for hunting opportunities. The preferred alternative would offer compatible hunting opportunities while providing non-hunting visitors with other priority public use opportunities (i.e., wildlife observation, wildlife photography, environmental education and interpretation). The broad goals of the Agassiz NWR Hunting Plan are as follows:

- Provide the public with safe and enjoyable hunts that are compatible with the Refuge purpose.
- Provide quality hunting opportunities that minimize conflict with other public use activities.
- Provide the public with opportunities to hunt wildlife species consistent with the laws and regulations of the State of Minnesota, that don't adversely effect local wildlife populations, and are consistent with the 1997 National Wildlife Refuge System Improvement Act.
- Provide additional hunting opportunities for persons with disabilities if it is determined there is a need to expand beyond existing opportunities.

*Note: An Environmental Assessment (EA) was completed addressing Hunting Opportunities on the Agassiz NWR during the Comprehensive Conservation Planning process in 2005. The EA considered the biological, environmental, and socioeconomic effects that implementing the CCP (the preferred alternative is the proposed action) and two other alternatives would have on the issues and concerns identified during the planning process. All alternatives in the CCP were organized by Habitat Management Options. The Preferred Alternative – Open Landscapes/Natural Watercourses was approved and a Finding of No Significant Impact was determined. This alternative included Deer Archery, Deer Black powder, Youth Deer, Youth Waterfowl and Ruffed and Sharp-tailed grouse hunting opportunities.*

*The Fish and Wildlife Service (Service) was sued by The Fund for Animals on March 14, 2003, alleging noncompliance with the National Environmental Policy Act (NEPA) in opening 37 refuges to hunting during the 1997-98 through 2002-03 seasons. On August 31, 2006, U.S. District Court Judge Ricardo M. Urbina, granted plaintiff's motion for summary judgment agreeing that the Service did not adequately consider the cumulative impacts of opening these refuges to hunting. The 2005 Hunt Plan for Agassiz NWR and other refuges were included in this decision. In total, 74 refuge hunting packages need to correct NEPA deficiencies by May 1, 2007.*

This EA is being re-submitted to address only the Hunting Opportunities Proposed on Agassiz NWR, and has incorporated a cumulative impact analyses to meet NEPA requirements.

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# Agassiz

## *National Wildlife Refuge*

### **Environmental Assessment**

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# Chapter 1: Purpose and Need

## 1.1 Background

President Franklin D. Roosevelt established Mud Lake Migratory Waterfowl Refuge by Executive Order 7583 on March 23, 1937. Its primary purpose was to be “a refuge and breeding ground for migratory birds and other wildlife.” Though the Refuge was re-named Agassiz National Wildlife Refuge (NWR) in 1961, its fundamental purpose remained unchanged. Although it’s primary focus has been on waterfowl (ducks and geese), over the years, other water-dependent birds and other migratory birds such as neo-tropical migrants have received greater emphasis. “Other wildlife” – primarily moose, deer, and wolves have also been a high management priority.

As a result of the 1985 Food Security Act, Agassiz NWR assumed additional responsibilities for a seven-county management district, which includes Red Lake, Pennington, Marshall, Kittson, Roseau, and Lake of the Woods counties in their entirety, as well as a portion of Beltrami County and projects funded by other agency and private programs. In particular, Agassiz NWR staff is to provide leadership and technical assistance in wetland delineation, preservation, and restoration. The Refuge is involved in habitat restoration projects for both uplands and wetlands on private land enrolled in the Conservation Reserve Program (CRP).

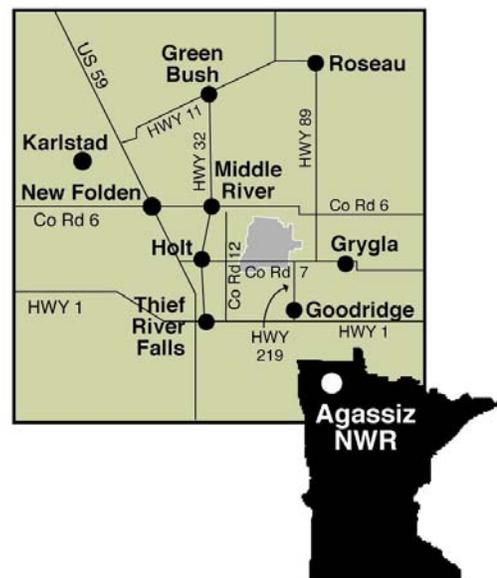
This Environmental Assessment (EA) was prepared using guidelines established under the National Environmental Policy Act (NEPA) of 1969. NEPA requires examination of the effects of proposed actions on the natural and human environment. This EA covers the hunting chapter, which is preceding the overall Visitor Services Plan for the Refuge. In the following sections three alternatives are described for future Hunting Opportunities on the Refuge, the environmental consequences of each alternative, and the preferred management direction based on the environmental consequences and the ability to achieve Agassiz NWR’s purpose.

In July 2005 a Comprehensive Conservation Plan for Agassiz National Wildlife Refuge, which involved an EA, was approved. The EA and CCP addressed future management of the refuge, including visitor services. Of the six priority public uses (hunting, fishing, wildlife observation, photography, environmental education and interpretation) identified in the 1997 National Wildlife Refuge Improvement Act, only fishing does not occur on the refuge.

Agassiz NWR (Figure 1) is located in Marshall County, in northwestern Minnesota, about 25 miles northeast of Thief River Falls along Marshall County Road 7 (22996 290<sup>th</sup> St. NE, Middle River, MN 56737).

In 2004, 4,750 hunting licenses were sold in Marshall County and over 7,900 sold in Pennington County, generating \$138,650 and \$201,000 in hunting license sales respectively. Deer-firearms license sales for State Management Unit 203, which includes Agassiz NWR) were 390 in 2004 and 358 in 2005. The decrease in 2005 is probably the result of re-zoning of Areas 1, 2 and 4, which changed hunting patterns (area and timing) and types of licenses that needed to be purchased.

Figure 1. Location of Agassiz NWR



Major access to the Agassiz NWR includes the following Marshall County Roads:

- MCR 7 (290<sup>th</sup> St. NE) - bisects the refuge in an east-west direction
- MCR 120 (260<sup>th</sup> St. NE) to 270<sup>th</sup> St NE – southern boundary
- MCRs 121, 122, 124 – lead to western boundary
- MCR 131 – leads to northeastern boundary

Several township roads provide access along several boundaries. Portions of interior roads and the north boundary road will be open depending on the specific hunting season.

## 1.2 Purpose

The purpose of this Environmental Assessment is to evaluate different alternatives for implementing a Hunt Plan on the Agassiz National Wildlife Refuge (Refuge). These alternatives include the existing hunt program and several alternatives exploring new hunting opportunities.

## 1.3 Need for Action

The 1997 National Wildlife Refuge System Improvement Act mandated 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 and the requirement to allow hunting that is compatible with the purpose of the Refuge. There is also a need to reserve a portion of the Refuge for non-hunting visitors and special hunts for youth and persons with disabilities (termed accessible hunts), as well as designating no more than a maximum of 40% of Refuge lands for migratory bird hunting (per requirements of the Migratory Bird Conservation Act). 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. Other entities or interests affecting the management of hunting opportunities include the adjoining State Wildlife Management Areas.

The approved 2005 Comprehensive Conservation Plan for Agassiz National Wildlife Refuge involved an Environmental Assessment which addressed several Hunting Alternatives. The preferred alternative included providing new deer hunting methods, grouse hunts and youth hunts. A Hunt Plan was completed in 2005; however, a court ruling in August 2006, stated that the U.S. Fish and Wildlife Service did not adequately consider the cumulative impacts of opening refuges to hunting which is required by NEPA. This EA addresses cumulative impacts in more detail.

The following goals were developed for the refuge by the CCP planning team. Goal 3 encompasses hunting opportunities.

1. Wildlife: Protect, restore and maintain a natural diversity of wildlife native to northwestern Minnesota, with an emphasis on Service Resource Conservation Priority Species.
2. Habitat: Restore and enhance a natural landscape within the Refuge and its seven-county management district to emulate naturally functioning watersheds and habitats within the tallgrass prairie, aspen parkland, and northern coniferous forest, including habitat corridors for wildlife.
3. People: Provide visitors and the community with opportunities to experience quality, wildlife-dependent recreation activities and to understand and appreciate a natural functioning landscape.

## 1.4 Decision Framework

The Regional Director for the Great Lakes-Big Rivers Region (Region 3 of the U.S Fish and Wildlife Service) will need to make two decisions based on this EA: (1) select an alternative and (2) determine if the selected alternative is a major Federal action significantly affecting the quality of the human environment, thus requiring preparation of an Environmental Impact Statement (EIS).

Following are the three Alternatives that were developed. Alternative C has been recommended to the Regional Director. The Draft Hunt Plan was developed for implementation based on this recommendation.

1. Alternative A (No Action): Current hunting programs will continue. These include a deer firearms hunt according to State Seasons and moose hunting if populations recover.
2. Alternative B (Open to Bear, Waterfowl, Small Game, Deer Archery/Blackpowder and Grouse Hunts): New Bear (no baiting), waterfowl and small game hunting would occur on an eastern portion of the refuge adjoining a State Wildlife Management Area following state seasons.
3. Alternative C (Open to Youth, Deer Archery/Blackpowder and Grouse Hunts): New deer and grouse hunting opportunities would occur with a late season opening, beginning with the deer firearms season. A youth deer hunt and waterfowl hunt would occur in designated areas adjoining State Wildlife Management Areas.

## 1.5 Authority, Legal Compliance, and Compatibility

The National Wildlife Refuge System includes federal lands managed primarily to provide habitat for a diversity of fish, wildlife and plant species. National wildlife refuges are established under many different authorities and funding sources for a variety of purposes. The purposes for the Agassiz NWR were established by a specific executive order of the president of the United States and are listed in Section 1.1.

In the past, the ability to open the refuge to hunting was covered under the National Wildlife Refuge Administration Act, 16 U.S.C 688dd (a) (2). This Act was amended in 1997 by the National Wildlife Refuge Improvement Act of 1997 (Public Law 105-57). These Acts support past hunting activities on Agassiz NWR and future hunting opportunities as proposed in this document as follows:

"... conservation, management, and ... restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans..." 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act)

"...compatible wildlife-dependant recreation is a legitimate and appropriate general public use of the System, directly related to the mission of the System and the purposes of many refuges...." Public Law 105-57, 111 STAT.1254, Sec.5. (B) (National Wildlife Refuge Improvement Act of 1997).

The U. S. Fish and Wildlife Service developed a strategic plan for implementing the 1997 National Wildlife Refuge System Improvement Act called "Fulfilling the Promise" (USFWS, 1999). This plan clarifies the vision for the National Wildlife Refuge System and outlines strategies for improving delivery of the System's mission. The proposed hunting plan is compatible with the priorities and strategies outlined in "Fulfilling the Promise".

Additional authority delegated by Congress, federal regulations, executive orders and several management plans, such as the 2005 Comprehensive Conservation Plan (CCP), guide the operation of the Refuge. The appendices of the CCP contain a list of the key laws, orders and regulations that provide a framework for the proposed action.

## 1.6 Scoping of the Issues

Agassiz NWR's CCP planning process began in early October 2002 with a kickoff meeting between Refuge staff, a regional planner from the USFWS Region 3 office, and a consultant assisting with preparation of the CCP. The group reviewed the Agassiz NWR vision statement and goals, existing baseline resource data, planning documents and other Refuge information. In addition, they identified a preliminary list of issues, concerns and opportunities facing the Refuge and Refuge Management District that would need to be addressed in the CCP.

Public input was encouraged and obtained using several methods, including an open house, written comments during a public scoping period, a questionnaire, an issue-based focus group, and personal contacts. The local news media attended the open house, conducted interviews with study team members, and published articles about the CCP planning process in the local Thief River Falls, MN newspaper. Approximately 30 people participated in an all-day focus group meeting, January 18, 2003, where they had the opportunity to discuss and explore in greater depth the various Refuge issues, goals, and opportunities in a congenial setting. Refuge staff sent invitations to a number of stakeholders in the area.

### 1.6.1 Issues and Concerns

A variety of issues, concerns, and opportunities were addressed during the planning process. Several recurring themes emerged from discussions among citizens, open house attendees, focus group participants, resource specialists, and Refuge planning staff. In general, these themes were related to habitat, water level, and wildlife management, public use and cultural resources. Below are the issues raised during internal and public scoping pertinent to hunting opportunities, a complete list of all issues can be found in the CCP. All concerns were addressed during the CCP process.

#### Wildlife Management:

- Nuisance wildlife control
- Non-game species
- Threatened and endangered species
- Wildlife diseases
- Wildlife research and monitoring

#### Visitor Services / Wildlife-Dependent Recreation:

- Deer hunting (e.g., archery, muzzleloader, youth)
- Upland game hunting
- Waterfowl hunting
- Fishing
- More trapping opportunities
- Wildlife observation; fire tower and other viewing platforms
- Miscellaneous forms of motorized and non-motorized recreation (e.g., hiking, bicycling, cross-country skiing/snowshoeing, canoeing)
- Tribal rights

Further discussion of these issues and concerns can be found in Chapter 2 of the CCP and Chapter 2 of the EA developed for the CCP.

# Chapter 2: Description of Hunting Alternatives

## 2.1 Formulation of Hunting Alternatives

During the development of the Agassiz NWR CCP the planning team developed three management alternatives dealing with hunting opportunities based on the issues, concerns and opportunities raised during the CCP scoping process. The issues came from individuals, local citizens and officials, cooperating agencies, conservation organizations and Refuge staff.

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, expectations and conflicts of public use, with concerns for safety.
4. Issues identified in the CCP and the CCP Environment Assessment
5. Comments from partners.
6. Hunting opportunities on adjoining State Wildlife Management Areas
7. Requirements and guidance provided in establishment legislation.

### 2.1.1 Alternative A: Current Direction (No Action) - allows previously authorized hunts to continue

Under Alternative A (No Action) Agassiz NWR allows hunting as a management tool to maintain an optimal white-tailed deer population for a quality hunt program and as a food source for gray wolves. Moose are also managed for wildlife viewing and a quality hunt program, though their numbers are currently too low to permit hunting on the Refuge. The hunting program consists of a firearms deer season in November and moose season when appropriate. Hunting is one of the six wildlife-dependent recreation uses allowed on the National Wildlife Refuge System.

The firearms deer season is set by the Minnesota Department of Natural Resources. Agassiz NWR and surrounding State Wildlife Management Areas lie within State Management Unit 203. All state regulations apply. Also, there are additional U.S. Fish and Wildlife Service regulations.

### 2.1.2 Alternative B: Open to Bear, Waterfowl, Small Game, Deer Archery/Blackpowder (muzzleloader), and Grouse Hunts

Under Alternative B hunting is likewise used as a management tool to maintain an optimal white-tailed deer population for a quality hunt program and as a food source for gray wolves. Moose are managed for wildlife viewing and a quality hunt program, though their numbers are currently too low to permit hunting on the Refuge.

Under Alternative B the hunting program includes firearms deer and moose seasons, as under current direction. New hunting opportunities are provided. During and after the deer/firearms season, the refuge would be open to deer archery/muzzleloader and grouse hunting in the same areas open to deer/firearms. This will be primarily a walk-in hunt as Refuge roads will not be plowed following the deer/firearms season. Strategic parking lots will be opened. This alternative actively explores possible new hunting opportunities – such as walk-in only hunts on the east side (14,800 acres) of the Refuge – for bear (no baiting), waterfowl and upland game coinciding with State seasons; however, conflicts with fall burning and hunter safety are issues.

The three main differences between the No Action Alternative A and Alternative B are that under the latter the following will be considered:

1. Deer hunting opportunities will be expanded to include deer/archery and deer/muzzleloader hunting beginning with the deer firearms season.
2. Grouse hunting (ruffed and sharp-tailed) opportunities will be added beginning with the deer firearms season.
3. Explore opening a portion of the refuge on the east side that borders a State Wildlife Management Area to walk-in waterfowl, bear (no baiting), and upland game hunting under State Season Regulations.

### **2.1.3 Alternative C: Open to Deer Archery/Blackpowder, Grouse, & Youth Hunts (Preferred Alternative)**

Under Alternative C, hunting again is used as a management tool to maintain an optimal white-tailed deer population for a quality hunt program and as a food source for gray wolves. Moose are managed for wildlife viewing and a quality hunt program, though their numbers are currently too low to permit hunting on the Refuge.

The hunting program includes a firearms deer and moose season, when appropriate. New hunting opportunities are provided. During and after the deer/firearms season, the refuge would be open to deer archery/muzzleloader and grouse hunting in the same areas open to deer/firearms. Following the deer/firearms season there will be strategic parking lots opened; however, this will be primarily a walk-in hunt as Refuge roads will not be plowed. A “youth” waterfowl hunt will be permitted in the Farnes Pool area (4,220) which adjoins a State Wildlife Management Area. A “youth” deer hunt will be permitted in an area on the east side (14,800 acres) of the refuge that adjoins a State Wildlife Management Area. Both “youth” hunts will follow state seasons and regulations.

The three main differences between the No Action Alternative A and Alternative C are that under the latter the following will be considered:

- 1 Deer hunting opportunities will be expanded to include deer/archery and deer/muzzleloader hunting beginning with the deer firearms season.
- 2 Grouse hunting (ruffed and sharp-tailed) opportunities will be added beginning with the deer firearms season.
- 3 “Youth” waterfowl and deer hunt will be permitted in designated areas according to state seasons and regulations.

### **2.1.4 Alternative(s) Considered But Not Developed**

#### **2.1.4.1 Open Refuge to Deer Archery & Grouse Hunting according to State Seasons.**

The CCP planning team considered the alternative of opening the entire refuge or portions of the refuge to deer archery and grouse hunting according the state seasons. The planning team dismissed this alternative because this action would be contrary to the established purposes of Agassiz NWR “...as a refuge and breeding ground for migratory birds and other wildlife” (Executive Order 7583, dated March 23, 1937) and “... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (16 U.S.C. 715d, Migratory Bird Conservation Act) for the following reasons:

1. Disturbance to Migratory Birds: Deer archery and grouse seasons open in mid-September. At this time refuge waters are still open and large numbers of migratory waterfowl, secretive marsh birds and other migratory species are migrating. It has been shown that disturbance causes birds to move burning needed calories or preventing them from feeding and building up energy reserves for migration.
2. Hinder Management Purposes & Hunter Safety: Prescribed fire is an important management tool in manipulating habitat. Each year the refuge plans to burn about 10,000 acres, conditions permitting. A great deal of this activity occurs in the fall (Sept., Oct., and early Nov.) Burn units vary in size from 100 to 5,000 acres. The decision to burn depends on the proper conditions, which often are not known until the day of the burn. Ensuring burn unit areas are empty of hunters would be a daunting task, and we would not risk human life over management objective. Consequently, this Alternative was not developed.

Table 1 below summarizes the actions that are anticipated under each alternative. Detailed discussion of the environmental impacts of each alternative can be found in Section 4.

**Table 1. Actions Anticipated for Hunting Alternatives**

<b>Action</b>	<b>ALTERNATIVE 1 (No Action)</b> Allows current deer firearms season to continue and a moose hunt if population recovers.	<b>ALTERNATIVE 2</b> Open Refuge to deer archery/blackpowder and grouse during & after deer firearms season. Open 14,800 acres on east side to bear (no bait), waterfowl, and upland game according to State seasons.	<b>ALTERNATIVE 3 (Preferred)</b> Open Refuge to deer archery/blackpowder and grouse during & after deer firearms season. Open 14,800 acres on east side to youth deer hunt and 4,200 acres in Farnes Pool to youth waterfowl hunt
<b>Species that will be hunted</b>	Deer & moose(if population recovers)	Deer, moose (if population recovers), ruffed & sharp-tailed grouse, bear, waterfowl, woodcock, rabbits, squirrels, raccoon, fox.	Deer, moose (if population recovers), ruffed & sharp-tailed grouse, waterfowl.
<b>Compatible with Refuge Goals and Purpose</b>	Yes	Yes	Yes
<b>Provides for Priority Public Uses</b>	Yes Satisfies needs of 1997 Refuge Improvement Act.	Yes Satisfies needs of 1997 Refuge Improvement Act, but gives priority to hunting.	Same as Alternative 1.
<b>Hunting and non-hunting activities separated</b>	Yes	No, doesn't separate uses in the eastern portion of the refuge, conflicts possible.	Yes Youth hunts are for only 1 or 2 days on weekends; one hiking trail will be closed for a day.
<b>Meets needs identified by public and partners</b>	Yes This alternative was preferred by non hunters.	No Maximizes hunting opportunities. Concern by non-hunting wildlife viewing public for safety and disturbance to migratory birds	Yes Provides a compromise between hunters and non-hunters regarding disturbance. Reduces opportunities for migratory bird hunting and upland game.
<b>Meets habitat goals for prescribed burning</b>	Yes Most burning completed by early Nov, but allows for safe burning after hunting season	No State seasons for many upland game species begin in September. Sept., Oct., early Nov are prime times for fall burning. Hunter safety would prevent burning in 16 burn units located within the 15,000 acres open to hunting.	Yes Youth hunts occur on weekends when prescribed fire activities are not usually initiated. If conditions are good other areas will be selected to burn. Deer/archery and grouse hunts will have a delayed opening to coincide with deer firearms (Nov) when most burning is done.
<b>Disturbance/Threat to Bald Eagles</b>	No Nesting is completed; gut piles provide food source	Same as Alternative 1.	Same as Alternative 1.
<b>Disturbance/Threat to Wolves</b>	Maybe The hunt itself will not disturb wolves; gut piles and wounded deer provide food; always possibility for illegal shooting.	Same as Alternative 1.	Same as Alternative 1.

# Chapter 3: Affected Environment

## 3.1 Introduction

This chapter includes a summary description of the affected environment of the Refuge and Refuge Management District. More detail is contained in Chapter 3 of the CCP.

Located in northwestern Minnesota, Agassiz NWR lies in the aspen parkland transitional zone between the coniferous or boreal forest to the north and east and the tall grass prairie and prairie pothole provinces to the west and south. This diversity of habitats in turn supports a wide diversity of resident and migratory wildlife, including 287 species of birds, 49 species of mammals, 12 species of amphibians, and nine species of reptiles. The Refuge is a key breeding ground for 17 species of ducks, as well as an important migration rest stop for waterfowl, but it is also noted for two resident packs of gray wolves, moose, and nesting bald eagles.

Agassiz NWR includes the following habitats, in the approximate acreages shown:

- 37,400 acres of wetland and shallow open water (“pools”)
- 11,650 acres of shrubland
- 9,900 acres of woodland
- 1,710 acres of grassland
- 170 acres of cropland
- 670 acres of developed land (roads, parking lots, etc.)

As a result of the 1985 Food Security Act-Farm Bill, Agassiz NWR became a Refuge Management District (RMD) in 1989. Staff duties expanded to include working with the National Resources Conservation Service (NRCS) and Farm Service Agency (FSA) on wetland determinations, Swampbuster responsibility, and the Conservation Reserve Program (CRP) across portions of seven counties in northwestern Minnesota. The RMD includes Red Lake, Pennington, Marshall, Kittson, Roseau, and Lake of the Woods counties in their entirety, and a part of Beltrami County.

Agassiz NWR is an integral part of a sizeable complex of lands managed for wildlife. The Minnesota Department of Natural Resources (MNDNR) has acquired and manages over 50,000 acres in three large and several smaller nearby Wildlife Management Areas (WMA’s). MNDNR works closely with Refuge staff on issues of mutual concern, as does the Red Lake Band of the Chippewa Indians, which also has extensive wildland holdings in the extended area.

## 3.2 Climate, Geography and Hydrology

Northern Minnesota has a continental climate, with long, cold winters and relatively short, hot summers. Annual mean precipitation at Agassiz NWR is 22 inches, which includes an average 39 inches of snowfall a year. Spring and summer thunderstorms that drop more than five inches of rainfall on a single day occur infrequently. The major threat of flooding at Agassiz NWR is the result of spring runoff from snowmelt following long, wet winters. Flood peaks are affected by the amount of moisture in the soil at freeze-up, amount of accumulated moisture at the start of the spring melt, and weather conditions during the spring melt.

Agassiz NWR is located in the eastern valley of the Red River of the North in what was once the lakebed of ancient Glacial Lake Agassiz. The terrain is relatively flat, with a gentle gradient averaging 1.5 feet per mile, sloping from east to west across the Refuge. The layer of till and lake sediments at Agassiz NWR is estimated to exceed 200 feet in depth. Agassiz NWR’s surface soils are typical of lakebed deposits, consisting of mostly peat or silty loams and clays. Peat occurs at depths of 1-2 feet but is thicker in some areas. Clayey glacial drifts

with pockets and lenses of sand are found beneath the surface soils.

The glacial lake sediments and drift deposits of sand and gravel contain ground water in quantities sufficient for domestic and stock use. Local ground water is of good quality but is relatively hard and high in iron. Over much of the Refuge the depth to the water table is only 1-4 feet. This proximity to the surface has been favorable for pothole development, but conversely, makes building construction difficult and subsurface waste disposal impractical. The relative impermeability of Agassiz NWR's surface soils impedes recharge of even its more permeable aquifers.

The Red Lake River watershed in which Agassiz NWR sits drains into the northward-flowing Red River of the North. Approximately 640 square miles of drainage basin are upstream of Agassiz NWR's outlet. The largest contributing watershed is the Thief River basin, which drains about 350 square miles above the northern boundary of the Refuge. The Thief River drains Thief Lake, a large waterfowl marsh located four miles north of Agassiz NWR ; this lake, in turn, is fed by the Moose River. The Mud River Judicial Ditch 11 system drains from the east into the Refuge.

Flooding is one of the main issues affecting the Refuge – both its habitat and its facilities – as well as the neighboring region. Flooding also impacts relations between the Refuge and local property-owners and officials. Floods occur most often during March, April and May, when spring rains may combine with snowmelt to exceed channel capacity.

The Refuge includes 26 impoundments (known variously as lakes, or pools) and three small natural lakes. Whiskey and Kuriko Lakes are located in a designated Wilderness Area, and Webster Lake is in the northeast corner of the Refuge. The artificial impoundments vary from 160 acres to 9,350 acres in size. Water is maintained within the impoundments by an extensive network of dikes, and water levels can be raised or lowered in any given impoundment by adjusting water control structures at pool outlets. Agassiz NWR's impoundments with their marshes, mudflats, and open water are the dominant geographic features of the Refuge.

## 3.3 Natural Resources

### 3.3.1 Habitats

As noted above, Agassiz NWR is situated within an ecological transition zone or ecotone, specifically, the aspen parkland transitional zone between the coniferous or boreal forest to the north and east and the tall grass prairie and prairie pothole provinces to the west and south. It includes the major habitat types in acreages listed in the introduction to this chapter.

*Wetlands and Open Water* – This includes cattail/mixed emergent marsh, bulrush emergent, open water/mudflats, and sedge meadow. Wetlands and open water are crucial to many of the migratory birds found at Agassiz NWR , either during the nesting season or in transit during migration. Ducks, geese, shorebirds, wading and some songbirds and raptors are all heavily dependent on various *Lowland Shrub* – a plant community dominated by willows, speckled alder, and dogwoods. Among the species that commonly utilize lowland shrub habitat are the moose, white-tailed deer, Le-Conte's Sparrow, and Black-billed Cuckoo. The use of this habitat by moose and deer means that it indirectly benefits the gray wolf, which preys on these two ungulates. Certain migratory birds and waterfowl also use this habitat for nesting and cover.

*Woodland* – Upland woodlands at Agassiz NWR consist primarily of aspen and mixed hardwood forest patches and bur oak savanna. They tend to be partially open forests with abundant undergrowth. Fire has always been integral to their maintenance. Included in the woodlands are 2,380 acres of coniferous bog. Refuge woodlands are utilized by many bird species in the summer, including the Ovenbird, Northern Saw-whet and Great-horned Owls, Red-tailed Hawk, Cooper's Hawk and Broad-winged Hawk, and various sparrows and warblers. Winter residents are much fewer but include Gray Jays, Crows, Ravens, Chickadees,

Nuthatches, finches, Ruffed Grouse, Downy Woodpecker, Hairy Woodpecker, Black-backed Woodpecker and Pileated Woodpecker. A number of mammals also utilize woodlands, including shrews, bats, squirrels, voles, mice, red foxes, porcupines, raccoons, fishers, weasels, skunks, bobcats, moose, deer, and wolves.

*Grassland* – Prairie grasslands at Agassiz NWR are dominated by tall and medium-height grasses, but also contain forbs as well as several low shrub or sub-shrub species. Taller brush and trees are absent or scattered, but at Agassiz NWR, brush or woodland areas can be interspersed with grasslands as part of the aspen parkland complex. Grasslands provide feeding, foraging, or breeding habitat for numerous species of birds, including geese, nesting dabbling ducks, Marbled Godwit, several species of hawks and owls, American Kestrel, Northern Harrier, Sharp-tailed Grouse, Killdeer, American Woodcock, Eastern Bluebird, Bobolink, Western Meadowlark, and various sparrows. Mammals that particularly utilize grasslands include a number of small and medium-sized rodents, rabbits, red fox, badger, white-tailed deer, and wolves.

*Cropland* – Crops are cultivated on seven units in the southern half of the Refuge. These areas will be phased out and converted to native grasslands over the next 15 years as outlined in the CCP.

### 3.3.2 Wildlife

The Refuge's assorted habitats support a diverse assemblage of wildlife species native to northwestern Minnesota, described briefly as follows.

*Birds* – About 287 species of birds have been recorded on the Refuge, of which more than 120 have been documented nesting. Agassiz NWR is especially important to migratory birds, in particular migratory waterfowl, both during nesting and migrating seasons, hosting 17 species of breeding ducks as well as Giant Canada Geese. The Refuge also supports one of the world's largest colonies of Franklin's Gulls, as well as many pairs of nesting Black Terns, Black-crowned Night Herons, and Eared Grebes, in addition to many non-breeding American White Pelicans.

*Mammals* – Forty-nine species of mammals have been recorded at Agassiz NWR. The largest and most prominent, if not always the most conspicuous, are the moose, white-tailed deer, gray wolf, and black bear. Other less celebrated mammals that find a home on the Refuge include shrews, bats, woodchucks, rabbits, hares, squirrels, chipmunks, muskrats, mice, voles, beavers, porcupines, red foxes, raccoons, and many members of the weasel family. The Refuge's comparatively large size and diversity of habitats meet the needs of these mammals for food, cover, and water.

*Amphibians and Reptiles* – Twelve species of amphibians have been recorded on the Refuge, including the wood frog, western chorus frog, leopard frog, spring peeper, gray tree frog, Copes gray tree frog, American toad, Canadian toad, and tiger salamander. Nine species of reptiles are known to occur at Agassiz NWR, of which six are snakes, two are turtles and one skink.

*Fish* – Thirty species of fish have been documented in Agassiz NWR's shallow pools, ponds, and watercourses. Twenty of these species are smaller fish, such as minnows, sticklebacks and darters. These minnows adapt more readily to the water management on the Refuge than sport fish and provide an important food base for many migratory birds and mammals.

### 3.3.3 Threatened and Endangered Species

Two federally listed species of animals occur at Agassiz NWR, the gray wolf and the Bald Eagle, both listed as threatened. Populations of both of these species are recovering regionally as well as nationally. The wolf was recently reclassified from endangered to threatened in adjoining states by the Service. However, at this time it is still listed as endangered in WI and MI. The Bald Eagle may be "de-listed," and removed from the list of species protected by the federal Endangered Species Act of 1973. No federally listed plants are documented on the Refuge.

The first wolf pack was established in 1981 and two packs have resided on Agassiz NWR and adjacent

Wildlife Management Areas for over 13 years. In recent years, about a half-dozen Bald Eagle nests have been used on Agassiz NWR; the eagles typically build their nests in large, old aspens and cottonwoods. Many more Bald Eagles utilize the Refuge for feeding at different times of the year; especially during early spring and late fall when as many as 60 have been observed. An Endangered Species Act Section 7 consultation was conducted and approved as part of the CCP EA.

## **3.4 Cultural Resources**

In addition to its natural habitat and wildlife, Agassiz NWR also has resources of archeological and cultural value that tell fragments of the long story of human habitation and endeavor in the area. The history of human presence in northwestern Minnesota can be divided into three broad contexts or periods: pre-contact (10,000 years B.C. to A.D. 1700), contact (circa A.D. 1630 to 1820), and post-contact (circa A.D. 1830 to present). The pre-contact contexts emphasize patterns of regional adaptation or technological and cultural traditions, while the contact and post-contact contexts are generally organized by themes addressing different interactions and industries. Pre-contact or contact resources or properties have yet to be discovered at Agassiz NWR, but that doesn't mean they are absent altogether.

With regard to the post-contact period, three general contexts have been identified, of which two are represented at Agassiz NWR. The Railroads and Agricultural Development (1870 to 1940) context is represented on the Refuge by Judicial Ditch 11 itself, former homesteads and farmsteads, schools, post offices, a store and an agricultural (peat) experimental station. The Federal Relief Construction in Minnesota (1933 to 1941) context is represented at Agassiz NWR by the existence of the national wildlife Refuge itself and by a number of structures built by the Civilian Conservation Corps (CCC), including dikes, drainage ditches, roads, and several small buildings.

While a century of extensive and intensive landscape modification at Agassiz NWR may have destroyed or compromised historic sites from pre-contact, contact, and post-contact contexts, there is still potential for undiscovered cultural resources at the Refuge, especially in those portions that have not been heavily subjected to such modification. A Cultural Resources Management Plan was completed in 2002.

## **3.5 Fire Management**

This section contains detail about the prescribed fire and wildfire suppression procedures used on the Agassiz NWR. We have included more detail on this subject here and in Chapter 4 of the CCP EA in order to fully document the Refuge's recent Fire Management Plan (FMP) in compliance with the National Environmental Policy Act.

### **3.5.1 Prescribed Fire**

Prescribed fire is used regularly on the Refuge as a habitat management tool. Periodic burning of grasslands and wet meadows reduces encroaching woody vegetation such as willow. Fire also encourages the growth of desirable species such as native, warm-season grasses, sedges and forbs.

Trained and qualified personnel perform all prescribed burns under precise plans. The Refuge has an approved FMP that describes in detail how prescribed burning will be conducted. A burn is conducted only if it meets specified criteria for air temperature, fuel moisture, wind direction and velocity, soil moisture, relative humidity, and several other environmental factors. The specified criteria (prescription) minimize the chance that the fire will escape and increase the likelihood that the fire will have the desired effect on the plant community.

There are three burning seasons on the Agassiz NWR. The first burning season starts as soon as spring thawing conditions will allow burning. This is usually in late March or April. It extends until the nesting season of waterfowl begins in early May. The second season starts in August after the nesting season and continues into

September. The fall season starts in late September and continues until fall rains, snow or low temperatures eliminate burning conditions.

How often established units are burned depends on management objectives, historic fire frequency, and funding. The interval between burns may be 2 to 5 years or longer. As part of the prescribed fire program, we will conduct a literature search to determine the effects of fire on various plant and animal species, and we will begin a monitoring program to verify that objectives are being achieved.

Prescribed fires will not be started without the approval of the Regional Fire Management Coordinator when the area is at an extreme fire danger level or the National Preparedness level is V. In addition, we will not start a prescribed fire without first getting applicable concurrence when local fire protection districts or the State of Minnesota have instituted burning bans.

Spot fires and escapes may occur on any prescribed fire. The spot fires and escapes may result from factors that cannot be anticipated during planning. A few small spot fires and escapes on a prescribed burn can usually be controlled by the burn crew. If so, they do not constitute a wildland fire. The burn boss is responsible for evaluating the frequency and severity of spot fires and escapes and, if necessary, slowing down or stopping the burn operation, getting additional help from the Refuge staff, or extinguishing the prescribed burn. If the existing crew cannot control an escaped fire and it is necessary to get help from the Minnesota DNR or other local fire units, the escape will be classified as a wildland fire and controlled accordingly. Once controlled, we will stop the prescribed burning for the burning period.

### **3.5.2 Fire Prevention and Detection**

In any fire management activity, firefighter and public safety will always take precedence over property and resource protection. Historically, fire influenced the vegetation on the Refuge. Now, fires burning without a prescription are likely to cause unwanted damage. In order to minimize this damage, we will seek to prevent and quickly detect fires.

### **3.5.3 Wildfire History**

Wildfires were known in this area prior to the establishment of the Refuge in 1937. From 1942 to 1952 a total of 13 wildfires consumed approximately 23,000 acres. This 11 year period was followed by eight years of no fire.

Wildfires occurred approximately every three years from 1961-1971. Since then, from 1972-1998, 18 fires have been documented. A few of these fires burned considerable acreage. During the spring of 1973 5 fires burned 15,037 acres. In April 1977, 7,200 acres burned and threatened the entire Refuge headquarters complex, and in April 1990, 28,000 acres burned on the eastern side of the Refuge and threatened the maintenance center. Seven of the fires occurred in 1998. Six of those were along the north boundary, and were believed to have been arson.

The period of highest fire danger occurs from 1 April to 15 May and 1 September to 15 November. Generally, spring rains and vegetative green up have occurred by Memorial Day; in the fall, precipitation and colder temperatures reduce the fire hazard by early November.

The Refuge contains 26 water impoundments, most of which are surrounded by firebreaks such as a road, trail, dike, ditch or large bay of open water. These firebreaks have reduced widespread wildfires in recent history. However, weather still has the greatest influence on wildfires in this area. A combination of prolonged drought conditions, lack of winter snow fall or delayed early spring rains can result in wildfire potential. Southerly winds in excess of 15 MPH are quite common and coupled with dried Phragmites (common reed) and cattail can create explosive conditions.

### 3.5.4 Fire Suppression

We are required by Service Policy to use the Incident Command System (ICS) and firefighters meeting National Wildfire Coordinating Group (NWCG) qualifications for fires occurring on Refuge property. Our suppression efforts will be directed towards safeguarding life while protecting Refuge resources and property from harm. Mutual aid resources responding from Cooperating Agencies will not be required to meet NWCG standards, but must meet the standards of their Agency.

## 3.6 Economic Resources

Agassiz NWR lies in Marshall County, rich in historical hunting and outdoor tradition. In 2004, 4,750 hunting licenses were sold in Marshall County and over 7,900 sold in Pennington County, generating \$138,650 and \$201,000 in hunting license sales respectively. The implementation of the Agassiz Hunt Plan is not anticipated to have a major impact to the local economy. The Refuge will support additional hunting in the general area, but the majority of hunters will be local residents that already purchased hunting licenses and miscellaneous hunting merchandise. Some hunters may come from outside the region and utilize local motels and eating establishments, but this will be limited.

## 3.7 Recreational Opportunities

A complete review of future public uses will be addressed in the Visitor Services Plan that will be written by 2008. In general, as described in the CCP, public uses that are permitted include: a combination of hiking, cross country skiing, show shoeing and auto interpretative trails, wildlife viewing and photography areas, environmental education stations, visitor center with exhibits, and special seasonal wildlife programs.

Hunting opportunities proposed on the Agassiz NWR already exist on state and other public lands in Marshall County. Marshall County has about 150,525 acres in 24 State Wildlife Management Areas (WMA) open for hunting of big game, upland game and migratory birds. Three of these WMAs border the refuge and encompass 22,453 acres.

## Chapter 4: Environmental Consequences

This chapter describes the foreseeable environmental consequences of implementing the three management alternatives described in Chapter 2. 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.

As described in Chapter 2, three alternatives are being considered:

Alternative A: Current Direction (No Action): Allows current deer firearms season to continue and a moose hunt if population recovers.

Alternative B: Open to Bear, Waterfowl, Small Game, Deer Archery/Blackpowder, and Grouse Hunts: Open Refuge to deer archery/blackpowder and grouse during & after deer firearms season. Open 14,800 acres on east side to bear (no bait), waterfowl, and upland game according to State seasons.

Alternative C: Proposed Action/Preferred Alternative - Open refuge to Deer Archery/Blackpowder, Grouse & Youth Hunts: Open Refuge to deer archery/blackpowder and grouse during and after deer

firearms season. Open 14,800 acres on east side to youth deer hunt and 4,200 acres in Farnes Pool to youth waterfowl hunt Permit hunting on portions of Hamden Slough NWR for a Youth Waterfowl Hunting Day, and white-tailed deer hunting on the whole refuge with muzzleloaders during Minnesota's muzzleloader season.

## **4.1 Effects Common to all Alternatives**

Specific environmental and social impacts of implementing each alternative are examined in the five broad issue categories: big game, upland game, migratory birds, threatened and endangered species, habitat, other public use activities and social implications. However, several potential effects will be very similar under each alternative and are summarized below:

### **4.1.1 Cultural Resources**

The Service is responsible for managing archeological and historic sites found on national wildlife refuges. At the start of the CCP planning process, the Service contracted with The 106 Group, Ltd. to produce a Cultural Resources Management Plan for the Refuge (Vermeer and Stark, 2002). A plan was completed in September 2002. Agassiz NWR contains a number of post-contact cultural resources of the Railroads and Cultural Development theme and the Federal Relief Construction in Minnesota theme. Historic sites include foundations of homesteads, farmsteads and schools, dikes, drainage ditches, roads, and several CCC buildings. Several sites have been evaluated regarding their eligibility for the National Register of Historic Places and were determined not eligible.

Hunting activities as described in each of the alternatives in this EA pose no threat to existing cultural resources.

### **4.1.2 Environmental Justice**

Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was signed by President Clinton on February 11, 1994. Its purpose was to focus the attention of federal agencies 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.

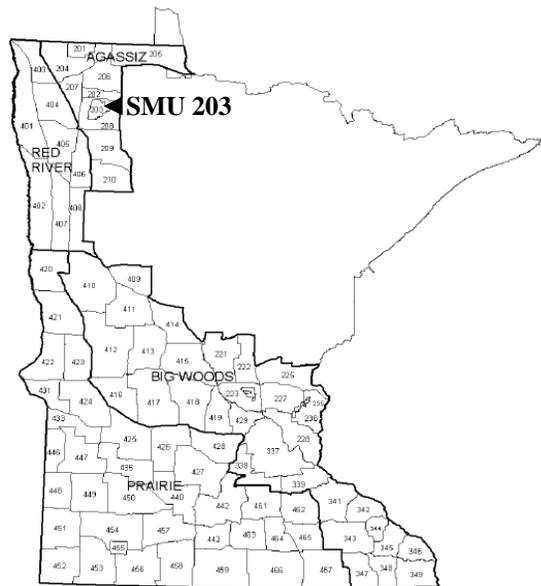
None of the hunting alternatives described in this EA will disproportionately place any adverse environmental, economic, social, or health impacts on minority and low-income populations. The percentage of minorities in Marshall County, where Agassiz NWR is located, and all but one of the seven counties in the Refuge Management District is lower than in the State of Minnesota and much lower than the United States as a whole. Average incomes and poverty rates within these counties are comparable to other rural counties in the state. Hunting activities that would be offered under each of the alternatives are available to any visitor regardless of race, ethnicity or income level. Agassiz NWR has a good working relationship with the nearby Red Lake Band of Chippewa Indians.

## **4.2 Alternative A: Current Direction (No Action)**

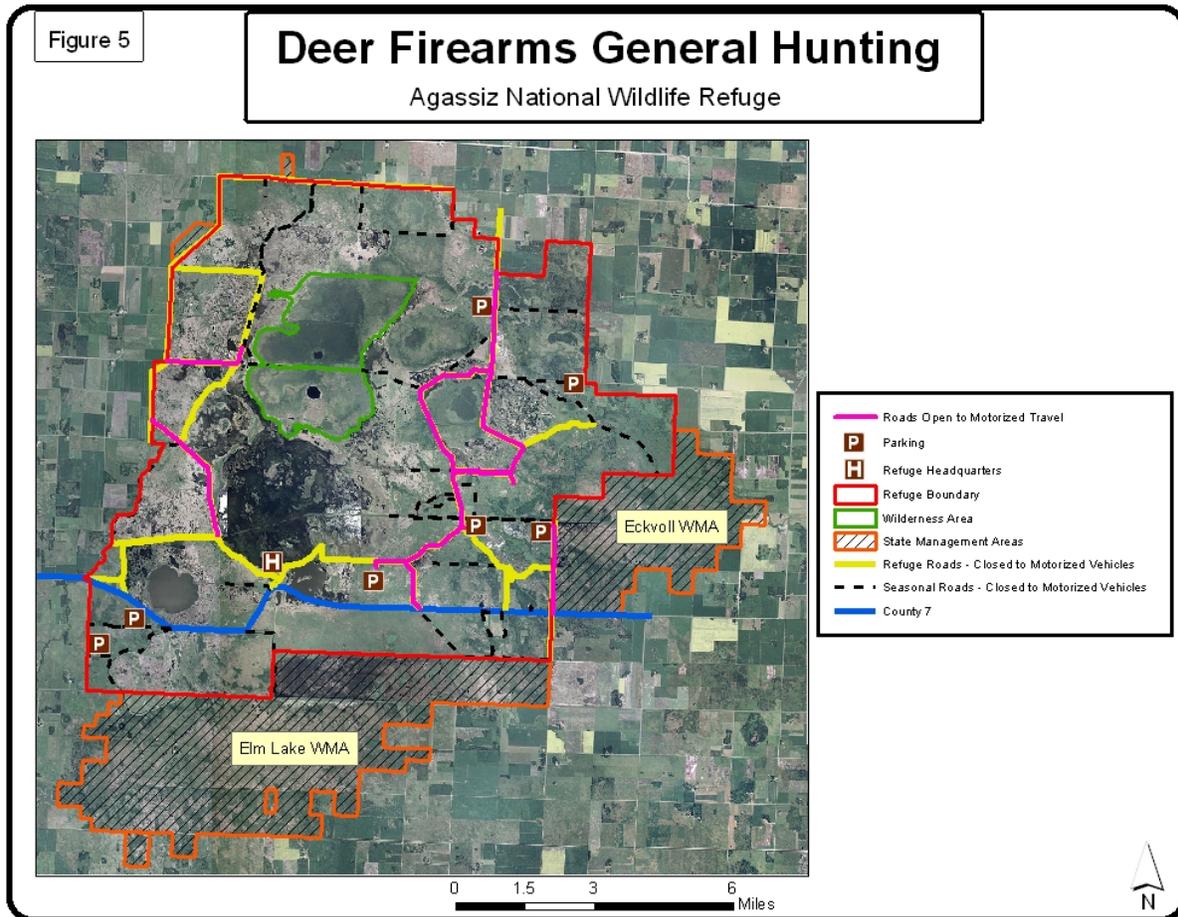
This Alternative allows existing hunting programs to continue, no new hunts would be initiated. Hunting is used as a management tool to maintain an optimal white-tailed deer population for a quality hunt program and as a food source for gray wolves. Moose are also managed for wildlife viewing and a quality hunt program,

though their numbers are currently too low to permit hunting on the Refuge. The hunting program consists of a firearms deer season in November. The firearms deer season is set by the Minnesota Department of Natural Resources. Agassiz NWR and surrounding State Wildlife Management Areas lie within Deer Firearms State Management Unit (SMU) 203, see Figure 2. SMU 203 has been a long established unit. The entire refuge is open to the 9 day deer firearms hunt held during the first week in November, except two closed areas located around headquarters and the Maintenance shop, see Map Figure 5 (next page). All state regulations apply. There are additional U.S. Fish and Wildlife Service regulations.

**Figure 2. Deer Permit Areas in Minnesota, 2005, (SMU 203 includes Agassiz NWR and surrounding State Wildlife Management Units)**



Map Figure 5.



### 4.2.1 Big Game

**White-tailed Deer Population Assessment:** Currently, deer population dynamics are annually evaluated by the State of Minnesota (MnDNR) and U.S. Fish and Wildlife Service (FWS) as part of a county, regional and state population surveys. Specific surveys relative to deer include doe/fetus road kill and aerial big game counts. These surveys combined with a winter severity index, and biological knowledge of individual species or population models are used to regulate species hunted.

Desired population goals have been established for deer on Agassiz NWR and are clearly defined in the 2005 CCP as follows:

**Objective 1.7: Deer Population:** Annually, maintain deer population for State Management Unit (SMU) 203 at densities between 15-20 deer per square mile based on annual winter surveys for a wolf prey base and public hunting opportunities.

**Rationale:** Based on studies and long-term experience with deer herd management by Minnesota DNR, this is the optimal population density or carrying capacity of white-tailed deer in habitat characteristic of this region.

The Agassiz NWR goal of 15-20 deer per square mile is higher than the MNDNR goal of 14 because there are two residential wolf packs on the refuge. The CCP Objective 1.7 clearly supports maintaining a prey base for the two wolf packs.

The February 2006 deer population for SMU 203, which includes Agassiz NWR and adjoining State WMAs, was estimated at  $1,258 \pm 518$  (41%) at the 90% C.I. The density is 11.65 deer/mi<sup>2</sup> using the total area surveyed (108 mi<sup>2</sup>). This year's estimate has a larger confidence limit than the past couple of surveys. See Table 2 for a summary of the last six years of population estimates and Figure 2 for the last 37 years. This is a winter survey.

**Table 2: Annual deer population estimates for SMU 203 (108 mi<sup>2</sup>) for the last six years.**

Year	Deer population	Deer density deer/mi <sup>2</sup>
2006	1258 ± 518 (41%)	11.65
2005	1593 ± 362 (23%)	14.75
2004	1912 ± 478 (25%)	17.71
2003	1390 ± 348 (25%)	12.87
2002	1600 ± 1024 (64%)	14.82
2001	1167 ± 268 (23%)	10.81

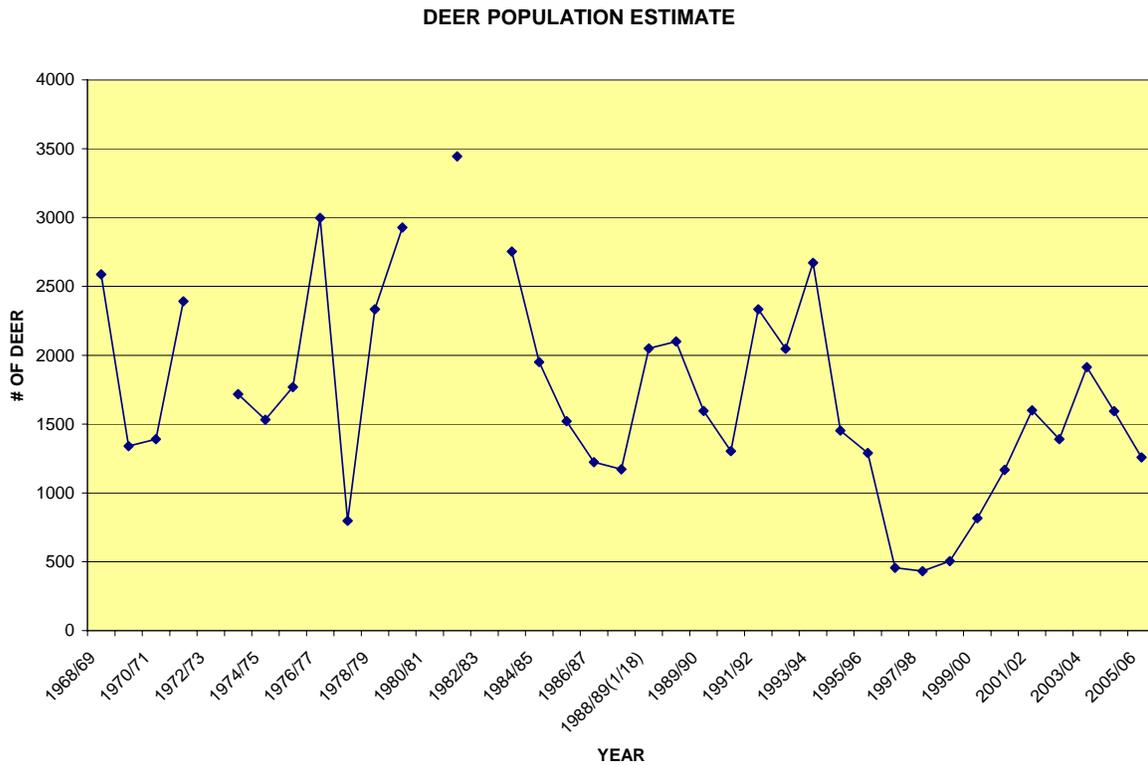
There have been 9 consecutive mild winters with Winter Severity Index (WSI) of less than 65 at the time of the survey. The 2006 WSI was only 11 at the time of survey compared to 50 and 39 respectively for the past two years.

The decrease in the population estimate over the last two years was not expected with the mild winter weather experienced so far and harvest intensity slightly decreased. We did not see evidence of heavy feeding in the fields surrounding SMU 203 as observed last year. There are several possibilities that might explain the decline:

- Surrounding CRP lands have developed sufficient brush for both food and cover drawing animals, as evidenced by distinct trails leading off the refuge in 2005.
- Hunting Units surrounding the refuge have been in high intensity harvest zones. In the past, winter conditions usually caused deer to move into the refuge from surrounding agricultural lands prior to the season. With mild conditions over the last 9 years, this movement may be delayed, leaving animals available for a more intensive harvest.
- Mild winter conditions during the annual February aerial survey may also be delaying deer movement to the refuge from the surrounding agricultural lands.
- Unknown factors at this time.

Figure 3 summarizes deer population estimates in SMU 203. This survey is an aerial survey conducted in late January or February and reflects winter populations. Low populations occurred in 1977 due to severe winter conditions and again in 1996 and 1997 when severe winters followed by severe flooding occurred.

**Figure 3: Deer Population Estimates for SMU 203, 1969 to 2006.**



As a result of the February 2005 deer count, antlerless harvest limits were more restrictive for the 2005 general deer season in SMU 203 by mutual agreement of Agassiz NWR and MNDNR. The harvest was changed from Intensively Managed (5 antlerless harvest) to Managed (1 antlerless). Pre-season hunt estimates for 2005 were 20 deer/mi<sup>2</sup>. Based on the February 2006 deer count, antlerless harvest limits were restricted further to a lottery system. Pre-season hunt estimates for 2006 were 17.5 deer/mi<sup>2</sup>.

Table 3 summarizes the last three years of deer harvest and hunter visits in SMU 203. The results show that the number of hunter visits and harvest decrease in response to more restrictive seasons.

**Table 3. Number of Deer Harvested and Hunter Visits in SMU 203 During the Last 3 Hunting Seasons.**

Year	# Deer harvested	# Hunter visits
2004	203	470
2005	163	400
2006	~110	370

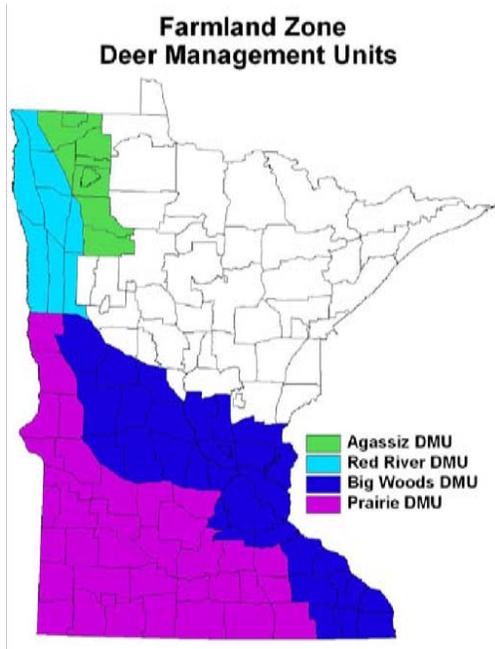
Deer harvested in all three years were in excellent condition.

Deer densities continue to increase throughout most of the farmland/transition zone, see Figure 4. In northwestern Minnesota, simulated deer densities indicate a slight downward trend over the last couple of years. Efforts to reduce deer in this area may be having an impact. However, most managers and constituent groups indicate there are still too many deer in northwestern Minnesota. Deer densities were highest in the Big Woods DMU, lowest in the Prairie DMU, and at intermediate levels in the Northwest (Agassiz & Red River DMUs).

The MNDNR has developed deer population trend goals for the state, see Figure 5 for statewide recommendations. Population goals within ±10% are indicative of relatively stable populations that are at or near objective level.

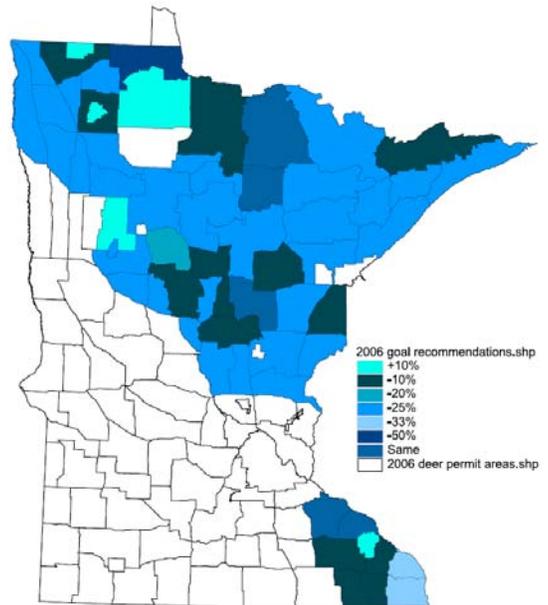
Table 4 shows population trend goals for SMU 203 (increase herd by 10%) and surrounding SMUs 202 and 208 (decrease by 10%). All are within the  $\pm 10\%$  goal.

**Figure 4. Deer management units in the Farmland Zone of Minnesota, 2005.**



**Figure 5.**

Deer Population Goal Setting - Trend Recommendations



**Table 4. MnDNR population target goals for the SMUs surrounding the refuge (SMU 203)**

SMU	Location relative to SMU 203	Deer Population Goal 2006
203	Agassiz NWR & WMAs	Increase herd by 10%
208	Adjacent to W,S,E boundaries	Reduce herd by 10%
202	Adjacent to N boundary	Reduce herd by 10%
206,207, 209,252,254, 255,256,257, 259,	N, W, S of SMUs 202, 208	Reduce herd by 25%
111	E of & adjacent to SMUs 202, 208	Increase herd by 10%

The MNDNR annually adjusts harvest quotas for each SMU to reflect deer populations. This harvest adjustment is anticipated to limit negative impacts related specifically to species population. A high deer population in 2004 prompted the MNDNR to allow 5 deer to be harvested during the regular deer firearms season in all SMUs surrounding (primarily agricultural lands) the refuge. Refuge staff agreed to this harvest rate in SMU 203 based on population trends. Given the immediate and strong downward trend in the population that followed, harvest was made more restrictive in 2005 and again in 2006.

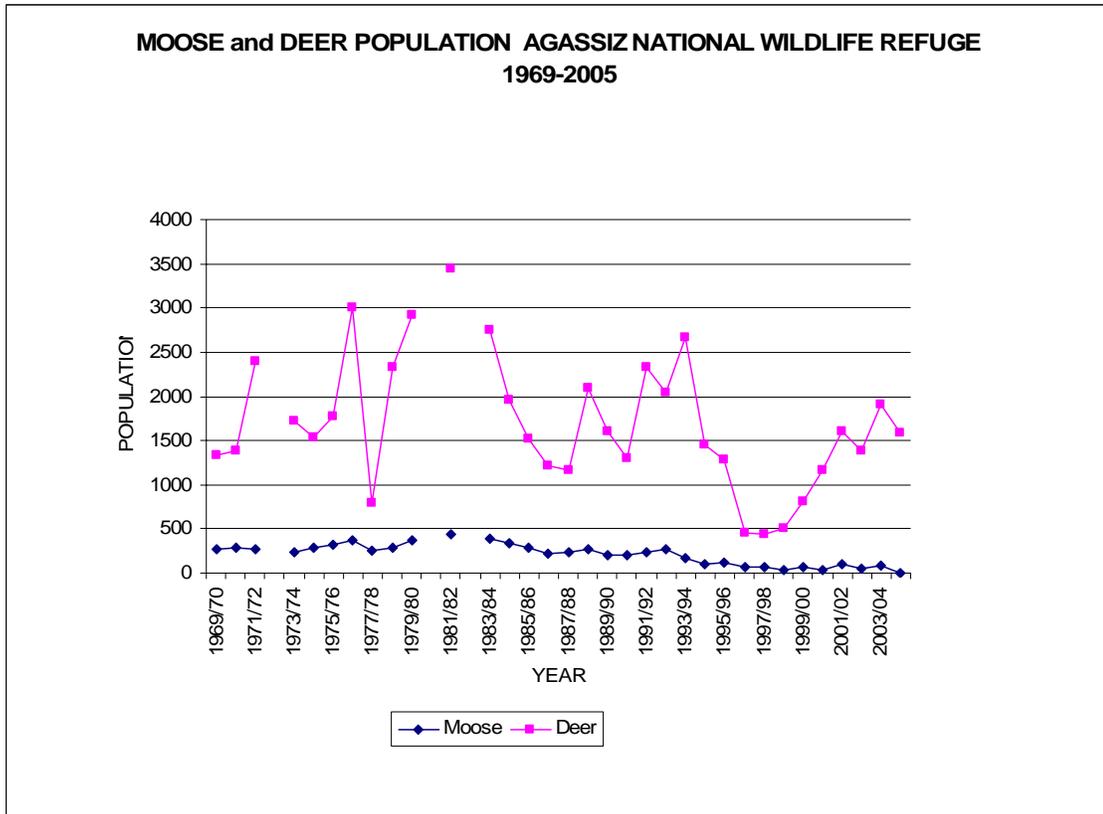
In SMU 203 deer harvest rates are set jointly each year by MNDNR and refuge staff based on an annual winter deer survey. This annual assessment allows managers to react accordingly and timely to either increase or decrease harvest rates based on deer densities. The Refuge plans to continue coordination with the MNDNR with deer management and harvest parameters, including annual surveys to justify adjustments to the annual harvest. It is anticipated that this coordination will insure sound management of the deer populations locally and regionally while minimizing negative impacts on habitat and neighboring landowner's crops.

**Disease:** Bovine tuberculosis (BTB) was detected in 2005 in cattle northeast of the refuge. Intensive monitoring was initiated by the MnDNR. In the fall of 2005 BTB was detected in one deer and in 2006 six additional deer tested positive. Deer tested positive in Roseau County (3), Beltrami County (3), and Marshall County (1). In response the MnDNR has designated a 135 mi<sup>2</sup> core zone where all deer (estimated 900) will be

eradicated. This core zone is within 9 miles of the Agassiz boundary. The core zone lies within a Bovine TB Management Area, 570 mi<sup>2</sup>, which is within 3 miles of the refuge boundary. The MnDNR is taking this action to prevent spread of the disease from deer to deer and deer to cows. There is a large cattle operation on the northeast corner of the refuge immediately adjacent to the refuge boundary. This disease has more potential to affect deer numbers in Northwest Minnesota than all hunting methods combined.

**Moose Population Assessment:** Beginning in 1993, the Agassiz NWR moose population crashed for unknown reasons, declining to a low of approximately 40 individuals in 1998. This sharp decline in numbers paralleled a wider collapse throughout northwest Minnesota. The winter moose survey for moose Management Zone 2 was flown on November 17, 2005. The estimate of 44 was much lower than two years previously when the estimate was 78 (the quadrat survey was not completed in 2004). This lower estimate is in line with the mid winter big game transect estimate from February 2005 that also indicated a drop from around 80 to 47. Figure 6 summarizes 36 years of moose and deer survey data for Area 203, which includes both Agassiz NWR and Eckvold and Elm Lake WMAs.

**Figure 6. MOOSE & DEER POPULATION for AREA 203 (Agassiz NWR & State WMAs) 1969-2005.**



Unfortunately, the decline of the moose population in Northwest Minnesota does not appear to be from causes that management actions can change. A joint MnDNR and USFWS moose study conducted from 1995 to 2000 concluded that climatic changes combined with increased deer numbers and parasite transmission rates may have rendered Northwest Minnesota inhospitable to moose (Cox et. al. submitted for publication). Until the climatic factors that are making the moose range shrink to the North are reversed, we will probably see fewer moose in Northwest Minnesota.

Moose hunting has been closed since 1996 due to the sharp declines in the population. At the time the study was initiated it was felt that hunting was unlikely to be the cause of the population decline because hunting had been at a very low rate (3-25% per year and only every other year). The population usually grew in years after hunting seasons. After the hunting season was closed in 1996 (and no hunting occurred in 1995), the population did not recover, the decline continued. Based on the study results it seems unlikely that moose

hunting will be opened in the near future. *Moose hunting will remain closed until the population recovers to 200 to 350 animals*, which is clearly stated in the 2005 CCP objective as follows.

**Objective 1.8: Moose Population:** Maintain moose population for State Management Unit 2 at 200 to 350 individuals (if population recovers) based on annual winter surveys and carrying capacity for wildlife viewing and hunting opportunities.

#### 4.2.2 Upland Game

Under this alternative there is no upland game hunting on the refuge. The deer firearms hunt does not directly impact these species or other residential species. Impacts on these species should be minimal.

#### 4.2.3 Migratory Birds

Under this alternative there is no migratory game bird hunting on the refuge. By the time the deer firearms hunt occurs (first full week in November), most migratory waterfowl and other migratory bird species have left the area. Impacts on these species should be minimal.

#### 4.2.4 Threatened & Endangered Species

Two federally listed species of animals occur at Agassiz NWR, the gray wolf and the Bald Eagle, both listed as threatened. Populations of both of these species are recovering regionally as well as nationally. The wolf was recently reclassified from endangered to threatened in adjoining states by the Service. However, at this time it is still listed as endangered in WI and MI. The Bald Eagle may be “de-listed,” and removed from the list of species protected by the federal Endangered Species Act of 1973. No federally listed plants are documented on the Refuge.

**Bald Eagle Assessment:** In recent years, about a half-dozen Bald Eagle nests have been used on Agassiz NWR. Eagles typically build their nests in large, old aspens and cottonwoods. Many more Bald Eagles utilize the Refuge for feeding at different times of the year, especially during early spring and late fall when as many as 60 have been observed.

The 2005 CCP committed to providing nesting habitat for bald eagles as stated below.

**Objective 2.9: Mature Aspen Stands:** Provide mature aspen stands for Bald Eagle, Hooded Merganser and Bufflehead nesting activity.

*Rationale:* Currently seven eagle nests are located in mature aspen or cottonwood. During the past 10 years cavity nesting Hooded Merganser and Bufflehead pairs/ broods have increased, which coincides with aspen stands maturing beyond 70 years of age. Studies indicate that aspen need to reach the age of 70 before cavities will develop.

Nesting and migrating eagle use have increased on the refuge over the last several years due to a nationwide recovery of this species. This increase has occurred with an annual deer firearms season in place. The deer firearms hunt takes place long after eaglets have left the nest. There has been no evidence of eagles being shot during the deer firearms season. Dead deer and gut piles provide a source of food, but may cause lead poisoning. In the fall 2006 one dead adult bald eagle was found on the refuge boundary and another adult west of the refuge that had died from lead ingested poisoning. The source of the lead is unknown.

**Gray Wolf Assessment:** The first wolf pack was established in 1981 and two packs have resided on Agassiz NWR and adjacent Wildlife Management Areas for over 13 years. The 2005 CCP clearly states a commitment to maintaining wolf numbers as stated in Objective 1.7: Deer Population (listed previously) and as follows in Objective 1.6:

**Objective 1.6: Gray Wolves:** Maintain two gray wolf packs on the Refuge based on howling surveys.

*Rationale:* Agassiz NWR has supported two gray wolf packs for 12 years, and this number is considered viable and sustainable. Gray wolves prey on both large and small mammals, including moose, deer, muskrat, beaver, rabbit, and snowshoe hare. They also depredate and scavenge livestock in the area (off the Refuge), especially when natural prey is scarce. This reality has led to attitudes ranging from disregard to persecution by some in the agricultural community, which is passed on from generation to generation. It is not uncommon to find wolves shot or run down by snowmobiles in Minnesota. The Refuge can manage for wolves only indirectly, by fostering habitat conditions that are favorable to prey populations, and by maintaining populations of the wolves' preferred prey.

Strategies:

- Manage for a Refuge deer herd at a density of 15-20 per square mile.
- Continue to conduct howling surveys every 5 years.
- Manage water levels in a manner consistent with maintaining beaver and muskrat populations.
- Regulate trapping to maintain beaver and muskrat populations for wolf prey base.
- Maintain a mix of wetland, brush, forest, and grassland habitats that is conducive to healthy deer populations.

A study, *Wolf-Livestock Relationships in Northwestern Minnesota*, was initiated in 1996. The objective of this Masters Degree study by Andreas Chavez, Utah State University, was to obtain baseline information about the wolves on the Refuge prior to possible delisting of this species by determining the number of wolves and packs utilizing the Refuge and wolf interactions and impacts with nearby agricultural operations. The study was initiated at a time when the deer herd had crashed to the lowest number on record (400+) due to two severe winters in a row, followed by severe flooding. This investigation made many interesting findings, including the diet of the local wolf population shifting to muskrat as an important food source when deer numbers were low. Five illegal wolf kills were documented. Two occurred during the deer firearms season adjacent to the refuge on the Elm Lake WMA and southeast of the refuge on private land. There was one illegal kill by snowmobile on the northeast boundary. Two pups were killed in January south of the refuge, and a wolf collar was found in a ditch east of the refuge. Other wolf deaths were due to federal trappers removing them on cattle or sheep kill sites, on one site on the northeast boundary 10 were removed in one incident. The Elm Lake Pack was wiped out due to mange, but this territory was filled almost immediately.

Although howling surveys are only done once every five years, refuge staff have observed both wolf packs successfully producing pups each year for the last several years. Wolf numbers increased from 0 prior to 1980 to two established pack territories. This increase has occurred with an annual deer firearms season in place and illegal killing and depredation removal. The deer firearms season does pose a direct threat to wolves; however, it also provides an important food source with wounded animals and gut piles at a time when pups and adults need to build fat reserves.

## 4.2.5 Habitat

**General:** Conserving natural habitat for wildlife is the heart of any long-range plan for national wildlife refuges. Hunters access the refuge by both interior and exterior refuge roads. Within the refuge there are several parking areas. Vehicles park in these areas or alongside of the gravel roads. Hunters may use non-motorized bikes to access grass dikes. They may also use non-motorized boats to cross water ways. Wheeled carts are permitted in all areas, except the Wilderness Area, for hauling deer out; sleds are also permitted. Temporary deer stands are permitted, but must be removed each day, and screw in steps are prohibited. All hunters leave the area each day. No ATVs, OHVs or snowmobiles are permitted on the refuge. Hunting is primarily walk-in from refuge access roads.

No bald eagle nests have been impacted by the hunt. Damage to vegetation is minimal, temporary and

basically non-detectable.

**Prescribed Burning:** Each year Agassiz plans to burn about 10,000 acres in spring, summer (Aug/early Sept) and fall (mid Sept/Oct). Fall prescribed burning activity is usually over by the deer firearms season. However, during the last 10 years, which have been the wettest decade in the last century, there have been 3 years when conditions were perfect for burning during the deer firearms season and one year when conditions were good after the deer firearms season. This trend may be further indications that the climate is changing. Burning was only conducted in areas closed to hunting.

#### 4.2.6 Other Public Use Activities

Wildlife viewing, photography, environmental education, interpretation and open houses are all activities enjoyed by non-hunters and hunters alike. There are three hiking trails and an auto-tour route on the refuge. The auto-tour route is closed down when the first major snow fall occurs or the end of October, whichever comes first. One hiking trail is located along the auto-tour route. Another hiking trail is located at Headquarters – but this area is closed to hunting. The third hiking trail, which is new and still being developed, is located in an area open to hunting. There is no established tradition of using this trail. Visitors will be warned at the parking lot that a hunt is occurring.

There have been no conflicts with the non-hunting public and hunting public during the deer firearms season. By November, non-hunting uses drop off dramatically. In the 2005 CCP non-hunting winter activities, such as cross country skiing and snowshoeing, will be permitted for the first time. These activities, most likely, will not be permitted until the end of December. Details will be developed in the Visitors Service Plan.

#### 4.2.7 Social Implications

The local public attitude toward the deer firearms hunt is positive by the majority of people. During the scoping process for the CCP and subsequent local public meetings, there was one comment that no hunting should be allowed on a National Wildlife Refuge and several comments that no bird hunting should be permitted on the refuge. Alternative A – No Action, which equals no change in program, means there will be no change in attitudes.

### 4.3 Alternative B: Open to Bear, Waterfowl, Small Game, Deer Archery/Blackpowder (muzzleloader), & Grouse

Under this Alternative the following hunts are proposed in addition to the existing deer firearms hunt.

1. **Deer hunting opportunities will be expanded** to include deer/archery and deer/muzzleloader hunting beginning with the deer firearms season. See Map Figure 6.
2. **Grouse hunting (ruffed and sharp-tailed) opportunities will be added** beginning with the deer firearms season. See Map Figure 6.
3. Explore opening a portion of the refuge (14, 825 acres) on the east side that borders a State Wildlife Management Area to walk-in waterfowl, bear (no baiting), and upland game hunting under State Season Regulations. On Map Figure 6 this would be the area west of the Eckvoll WMA, beginning north of the eastern most closed area to the north boundary, with most of the western boundary being the Northgate Rd (indicated as ►).

The entire refuge, same areas as open to deer firearms hunters, will be opened to deer archery/blackpowder hunters and grouse hunters. During the 9 day deer firearms season in November, access will be the same for deer archery and grouse hunters. Hunters may use blackpowder/muzzleloaders during the deer firearms season. After the deer firearms season closes, access will be much more restricted as refuge roads will not be

plowed, creating essentially a walk-in hunt. Strategic parking lots will be opened. Compare road closures with Map Figure 5, page #. See Table 5 for season dates and length.

The eastern area described in # 3 of 4.3 above would be walk-in only from the Eckvoll WMA and private lands bordering the refuge. This area would be open to bear hunting (no baiting), small game hunting (grouse, rabbit, hare, squirrel) and migratory bird hunting (waterfowl) according to State Seasons. See Table 6 for season dates and length.

Map Figure 6

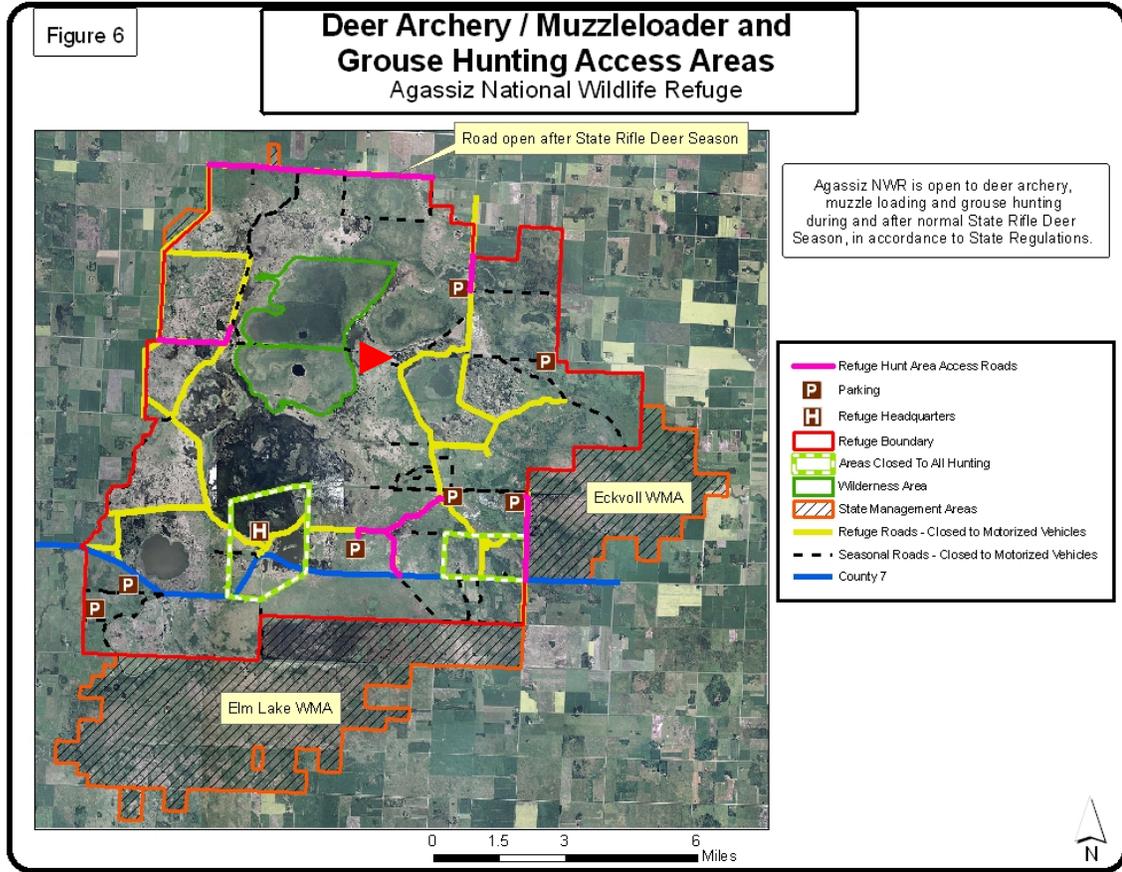


Table 5. Wildlife Species Opened for Hunting on the entire Agassiz NWR during and after deer firearms season

Species	General Dates of Hunt
<b>White-tailed Deer:</b> General Firearms (state season) Archery Muzzleloader (state season)	November (9 days -1 <sup>st</sup> full week in Nov) November- December (during & after deer-firearms) November -December (~15 days beginning end of Nov)
<b>Upland Game:</b> Ruffed Grouse Sharp-tailed Grouse	November-January 1 (during & after deer-firearms) November – November 30 (during & after deer-firearms)
<b>Moose:</b>	December – early; <b>CLOSED until populations recover</b>

**Table 6 – Wildlife Species Opened for Hunting on 14, 825 acres on an eastern portion of Agassiz NWR following state seasons.**

Species	General Dates of Hunt
<b>White-tailed Deer:</b> Youth Hunt General Firearms Archery Muzzleloader	October (1 weekend) November (9 days -1 <sup>st</sup> full week in Nov) September 17- December 31 November 26 -December (~15 days beginning end of Nov)
<b>Black Bear: no baiting</b>	September 1- October 16
<b>Small Game:</b> Ruffed Grouse Sharp-tailed Grouse Rabbit, Hare, Gray Squirrel	Mid-September – January 1 Mid- September – November 30 Sept 17 – Feb 28
<b>Migratory Birds:</b> Youth Waterfowl Hunt Canada Goose Waterfowl	September (1 or 2 days) September 30 – December 8 September 30 – November 28.
<b>Moose:</b>	December – early; <b>CLOSED until populations recover</b>

### 4.3.1 Big Game

**Deer Population Assessment:** The deer population assessment is the same as listed in Alternative A and described in 4.2.1.

**Deer Harvest Estimation for Expanded Opportunities Under Alternative B:** Archery hunting has never occurred on the refuge. Harvest rates will be increased but by a very small amount as evidenced by only 1 deer harvested by archery and 1 by blackpowder on surrounding WMAs in 2005. Initially, because this is a new area, it might generate heightened interest. SMU 203 is not an easy area to hunt. Surrounding SMUs offer easier access and higher deer densities. Access for archery and muzzleloader hunters on the refuge will be very restricted, mostly walk in, as compared to the Deer Firearms season when a large portion of refuge interior roads are open. Youth hunters tend to gravitate toward SMUs in more agricultural areas. Table 7 details estimated harvest.

**Table 7. Estimated Additional Harvest for Deer under Alternative B.**

Hunt Type	# of days	Area Open (acres)	Access	Estimated harvest (max)
Youth	2	14,825	Restricted	3
Muzzleloader	15	57,800	Very restricted	5
Archery*	109 & 59	57,800	Very restricted	10
<b>Total</b>	<b>126 &amp; 76</b>			<b>18</b>

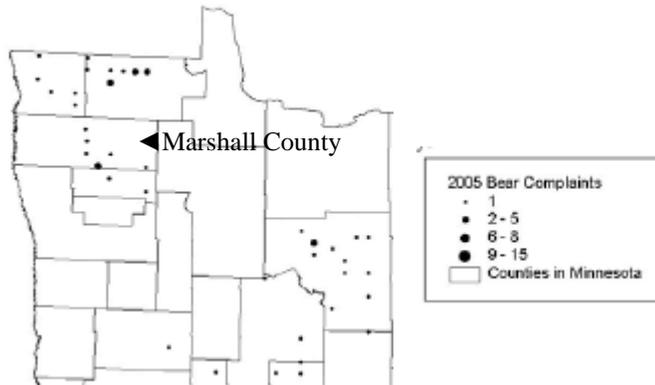
\* Archery season in the eastern portion of the refuge will be a 109 day season and a 59 day season on the rest of the refuge where it will NOT begin with State opening; it will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

**Moose Population Assessment:** The moose population assessment is the same as listed in Alternative A and described in 4.2.1. There will be no hunting permitted until population recovers.

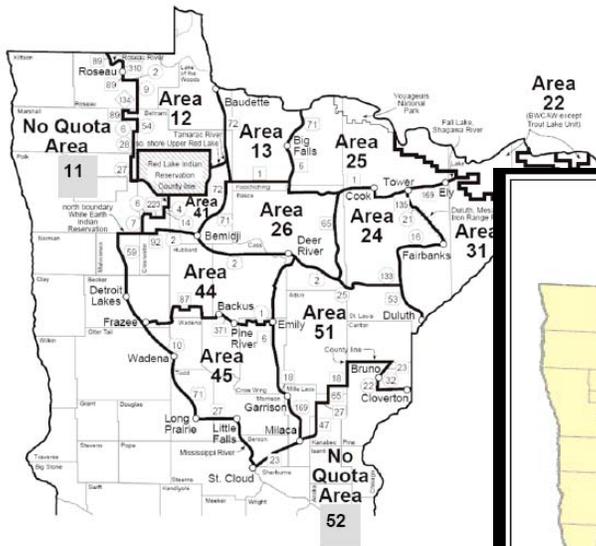
**Bear Population Assessment:** No formal surveys are done on bear populations on the refuge. Casual observations are recorded and any bear sighted from aerial surveys are also noted. A statewide survey was completed in 1997 and a transect fell on the refuge. Bear damage complaints occur in the area, see Figure 7.

**Bear Estimated Harvest:** There has never been a bear hunt on the refuge. Agassiz lies within State Bear Management Unit 11, which is a “no quota on harvest” area. See Figure 8. In other words license sales are unlimited and hunters could harvest two bears. Bear hunting is usually conducted over bait. Hunters haul bait into an area prior to the season. No baiting is permitted on National Wildlife Refuges nor the use of ATVs, which is often how bait is transported. This will severely limit interest in bear hunting on the eastern portion of the refuge, which would be a walk-in hunt. Also, hauling animals out of the refuge can only be done via non-motorize wheeled carts, sleds or packed out. Harvest figures for Northwest Minnesota in 2005 were 0 to 0.02 bear taken per square mile, see Figure 9. Harvest for the refuge is estimated at 0 to 2 bear per year.

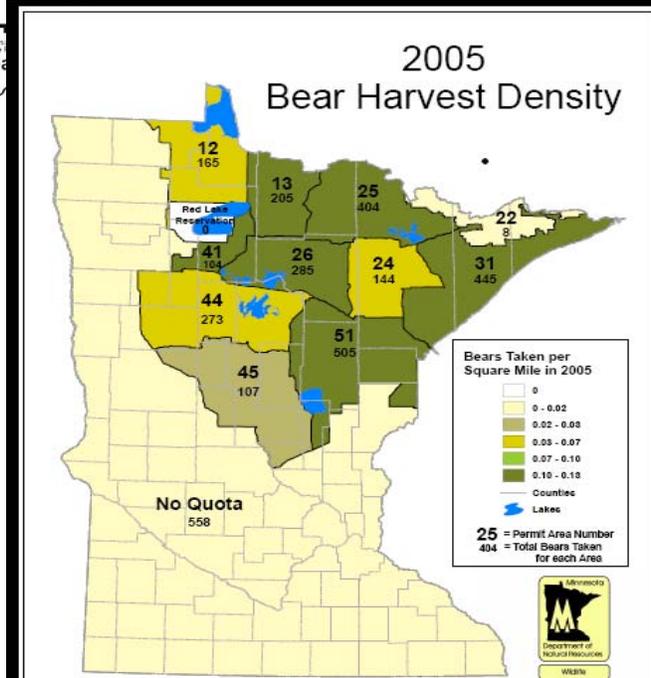
**Figure 7. Location of Bear Damage Complaints in Northwest Minnesota, 2005.**



**Figure 8. Bear management units (BMUs or areas) within the Minnesota bear range.** Within the primary bear range (shown in white) license numbers are limited by quota. Hunters can hunt in only one area, except with a no-quota license they can hunt anywhere in the shaded zone (and beginning in 2005 hunters could possess both a no-quota and quota area license).



**Figure 9: 2005 Bear Harvest Density**

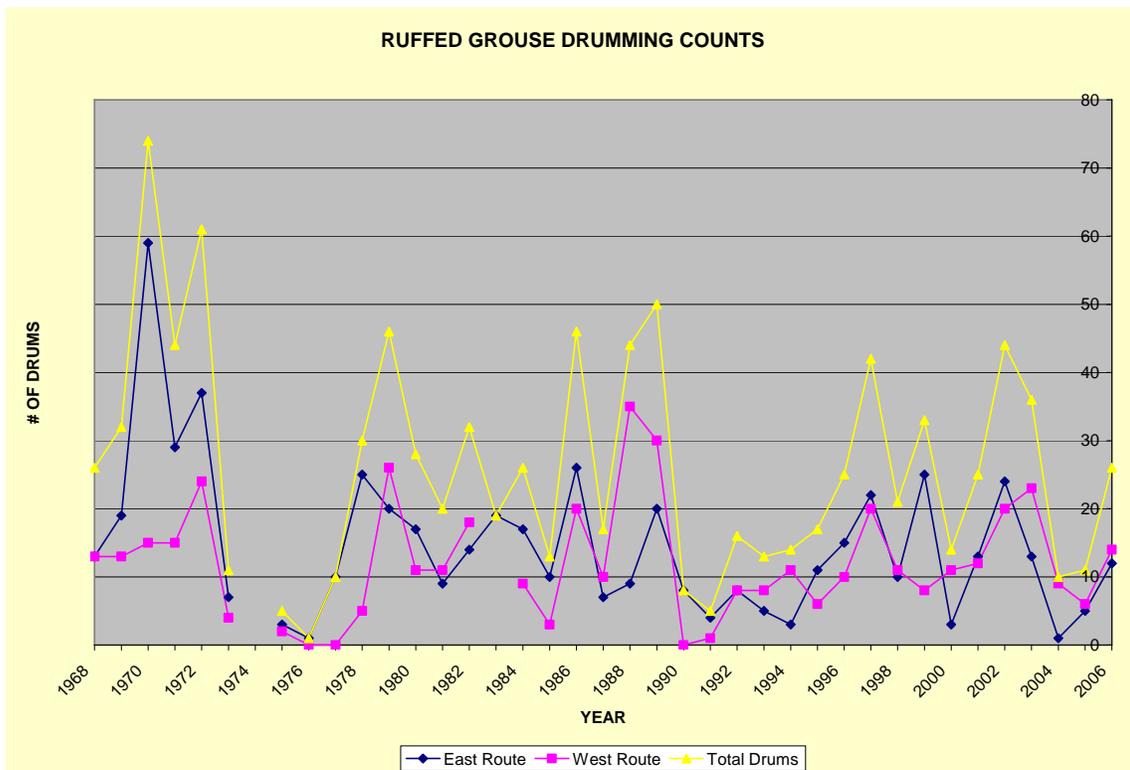


### 4.3.2 Upland Game

**Ruffed and Sharp-tailed Grouse Population Assessments:** Drumming and lek counts are conducted on and around the refuge as part of a statewide survey. Ruffed grouse are subject to cyclical population fluctuations and sharp-tailed to a much lesser extent.

**Ruffed Grouse - Agassiz Population Trends:** Figure 10 shows ruffed grouse population trends on Agassiz NWR which are very indicative of the cyclical population fluctuations of this species. It appears the refuge population is entering an upswing in the cycle, which also mirrors statewide trends.

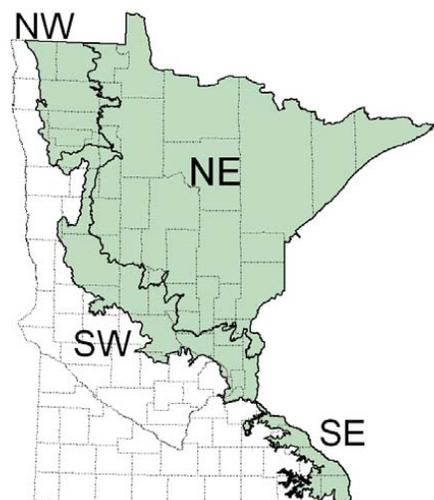
**Figure 10. Ruffed Grouse Drumming Counts on Agassiz NWR.**



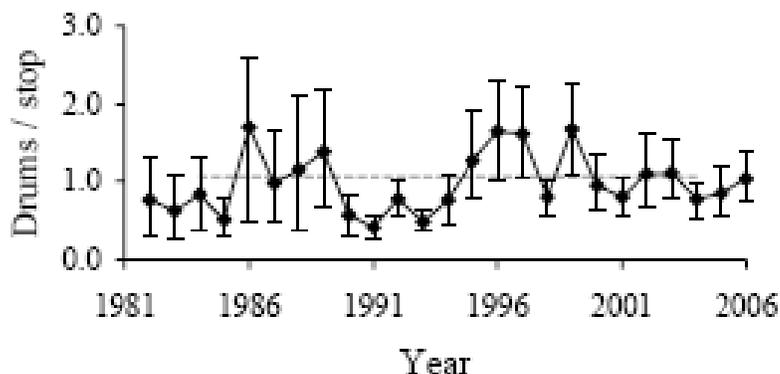
The MNDNR has four ruffed grouse survey regions. See Figures 11. Agassiz Refuge lies within the northwest (NW) region. Based upon the drum count index, ruffed grouse densities throughout most of Minnesota during spring 2006 were likely greater than spring densities during 2004 and 2005. This year, therefore, could mark the beginning of the next cyclical increase in the population.

Figures 12 and 13 show the cyclical nature of ruffed grouse populations in the NW region and statewide, respectively.

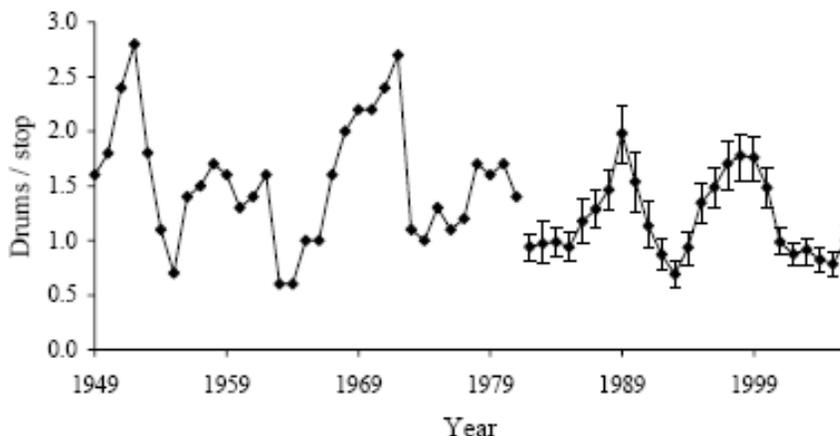
**Figure 11.**



**Figure 12.** Ruffed grouse drum count index values in the Northwest. Dashed horizontal lines indicate the mean drum from 1984 to 2004. Vertical error bars represent 95% CI.



**Figure 13.** Ruffed grouse drum count index values in Minnesota. Vertical error bars represent 95% CI. Statewide means before 1982 were not re-analyzed with the current methods, so CIs are not available. The difference in Index values between 1981 and 1982 reflected a real decrease in drums counted, not an artifact of the change in analysis methods.

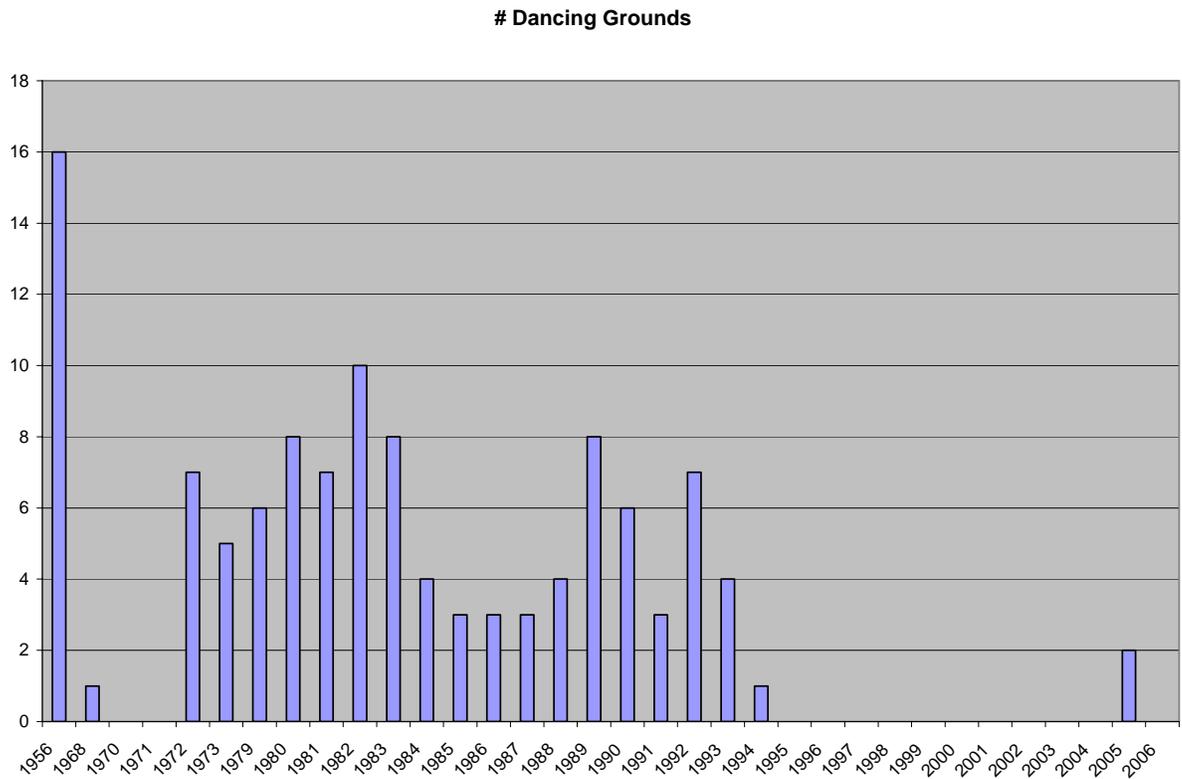


**Sharp-tailed Grouse - Agassiz Population Trends:** There is limited habitat for sharp-tailed grouse on the refuge. Sharp-tailed grouse nesting habitat (grassland) has declined by over 50% during the last 20 years. The Open Landscape Alternative selected in the CCP will aggressively promote and maintain grassland habitat in a Focus Area (4,300 acres, 6.7 square miles) on the SE portion of the refuge. This area will increase grasslands, nesting, and lek habitat, by 415 acres.

Dancing ground (lek) surveys are conducted on or within a half mile radius of the refuge, see Figure 14. No dancing grounds have been observed in the survey area from 1995 to 2004. In 2005 two dancing grounds were detected outside the west boundary but birds were not observed or heard this year. Since 1995 we have experienced the wettest decade on record with severe to moderate spring flooding eight of the ten years. Flooding negatively impacts bird use on leks and nesting success. Along the western boundary of the refuge sharp-tailed numbers have increased over the last two years in response to the aging CRP grasslands. Birds have been observed in the late fall and early winter on the western half of the refuge as well. However, bird use

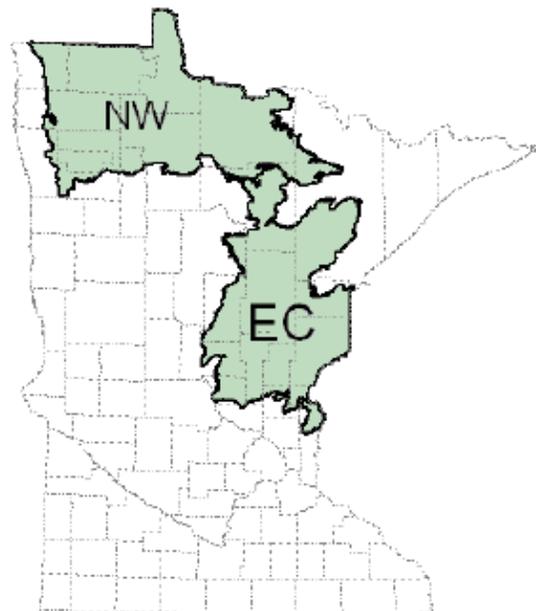
will continue to be limited if the wet cycle continues, especially during the spring and nesting season.

**Figure 14. Number of Sharp-tailed grouse dancing grounds on or within a .5 mi radius of Agassiz NWR.**

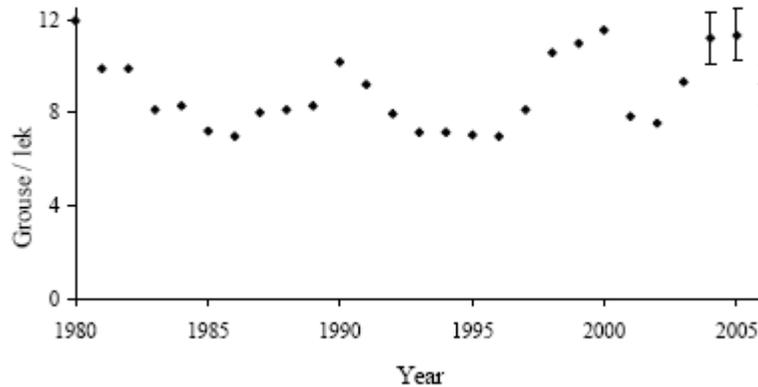


According to the MNDNR, sharp-tailed grouse numbers have remained relatively stable over the past 20 years in northwest Minnesota. Numbers are based on abundance of dancing ground leks with an average of 8 to 12 birds/lek. Sharp-tailed grouse habitat was more widely distributed in Minnesota during the early- and mid-1900s, but is now limited to areas in the Northwest (NW) and East Central (EC) portions of the state, see Figure 15. A total of 1,463 sharp-tailed grouse were observed at 159 dancing grounds with  $\geq 2$  male grouse (or grouse of unknown sex) during spring 2006. The resulting index value was similar to the mean from the last 26 years (Figure 16).

**Figure 15.** Northwest (NW) and East Central (EC) survey regions for sharp-tailed grouse relative to county boundaries in Minnesota. These regions were based largely on the boundaries of ECS sub-sections.



**Figure 16.** Mean number of sharp-tailed grouse observed in Minnesota during spring surveys of dancing grounds. Vertical error bars, which were not calculated from 1980-2003, represent 95% CIs. No line connected the annual means because they are not based on compatible samples of leks.



The index value in the EC region has remained the same at 8–9 grouse/lek since at least 2004 (Table 8). The index values among comparable leks in the NW region and statewide declined by 3.6 and 2.5 grouse/lek, respectively, between 2005 and 2006. Somewhat smaller declines also occurred in the NW and statewide between 2004 and 2005, despite annual means that increased slightly that year. The apparent paradox was caused by differences in the leks included in each annual data set compared to the set of “comparable” leks. The discrepancies highlight the problems with making inferences from samples that cannot be assumed to be representative of the population of interest.

**Table 8. Number of sharp-tailed grouse observed per dancing ground in Minnesota during spring.**

Year <sup>b</sup>	Statewide			Northwest <sup>a</sup>			Eastcentral <sup>a</sup>		
	Mean	95% CI <sup>c</sup>	<i>nd</i>	Mean	95% CI <sup>c</sup>	<i>nd</i>	Mean	95% CI <sup>c</sup>	<i>nd</i>
2004	11.2	10.1–12.3	183	12.7	11.3–14.2	116	8.5	7.2–9.9	67
2005	11.3	10.2–12.5	161	13.1	11.5–14.7	95	8.8	7.3–10.2	66
2006	9.2	8.3–10.1	159	9.9	8.7–11.1	95	8.2	6.9–9.7	64
Difference <sub>04-05</sub>	-1.3	-2.2– -0.3	186	-2.1	-3.5– -0.8	112	0.0	-1.0– 1.1	74
Difference <sub>05-06</sub>	-2.5	-3.7– -1.3	126	-3.6	-5.3– -1.9	70	-1.1	-2.6– 0.6	56

<sup>a</sup> Survey regions; see Figure 12.

<sup>b</sup> Year or the mean difference between comparable leks during consecutive years.

<sup>c</sup> 95% CI = 95% confidence interval for the mean. It is an estimate of the uncertainty in the value of the mean.

<sup>d</sup> *n* = number of dancing grounds in the sample.

**Ruffed and Sharp-tailed Grouse Harvest Estimates under Alternative B:** The Agassiz refuge has never been open to grouse hunting, although it was approved for a portion of the refuge in the 1979 Master Plan.

MnDNR bag limits for ruffed and sharp-tailed grouse have not changed since the mid 1970s. State hunting seasons for both species begin mid-September but end for sharp-tailed grouse on November 30 and ruffed grouse on January 1.

Hunting pressure will be greatest in the eastern portion of the refuge open to state seasons. Conditions are warmer earlier in the season. There will be little to no hunting pressure on grouse during the 9 day deer firearms season. After the deer firearms season, access via refuge roads will be more restrictive. Hunting

opportunities will be primarily walk-in, occurring at a time of year when it is colder and snow depth can be challenging. Currently, ruffed grouse habitat exists on less than 14% of the refuge and about 30% of the refuge is suitable for sharp-tailed grouse. The cyclical nature of ruffed grouse populations and the current low numbers of sharp-tailed grouse on the refuge will severely limit hunter interest and harvest. Based on this information, it is anticipated that hunter use and harvest will be low. Table 11 summarizes hunt parameters and estimated annual harvest. This is a high estimate for sharp-tails given the current use on the refuge. The ruffed grouse estimates will always fluctuate with population cycles. When the cycles are high there will more hunters and greater harvest and the converse is true when populations are low.

**Table 11. Estimated Harvest of Grouse for Proposed Grouse\* Hunting Opportunities in Alternative B.**

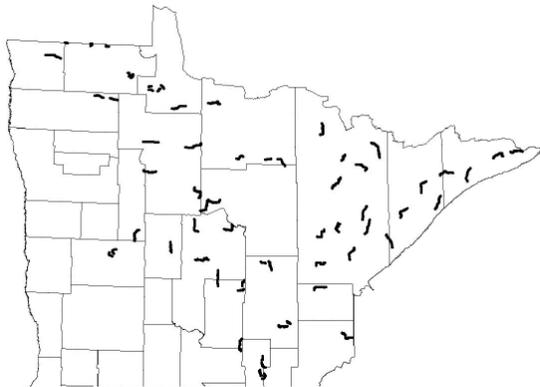
Hunt Type	# of days	Area Open (acres)	Available Habitat (acres)	Access	Estimated Annual Harvest
<b>Entire Refuge*</b>					
Ruffed	~60	57,800	8,500	Very restricted	15-25
Sharp-tailed	~28	57,800	18,000	Very restricted	0-5
<b>Sub-Total</b>					<b>15-30</b>
<b>East side**</b>	<b>Additional days</b>				
Ruffed	~48	14,825		Very restricted	25-50
Sharp-tailed	~48	14,825		Very restricted	0-2
<b>Sub-Total</b>					<b>25-52</b>
<b>Total</b>					<b>40-82</b>

\* Grouse seasons will NOT begin with State opening; they will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

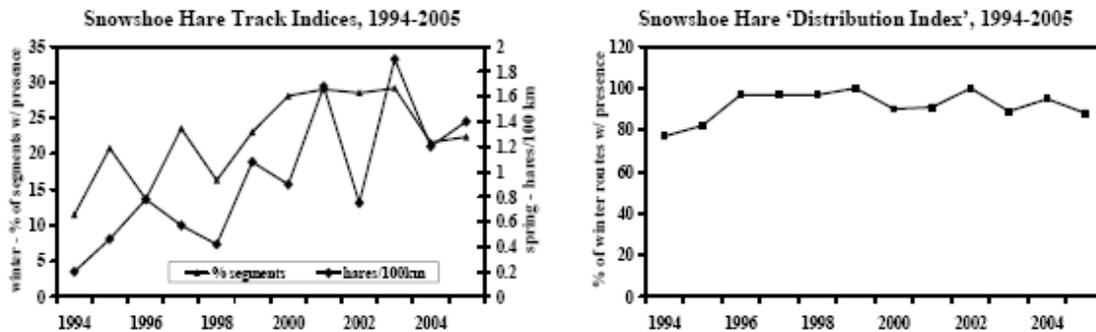
\*\* Grouse seasons will begin with State Season Opening; migratory birds will still be on the refuge and prescribed fire season will be effective.

**Rabbit, Hare and Gray Squirrel Population Assessments:** There are no surveys conducted at Agassiz for these species, although rabbits have been observed more frequently in the last few years. MnDNR 2006 August Roadside surveys indicate that the Eastern Cottontail population trend is above the long-term average in northwest Minnesota. On the other hand the white-tailed jack rabbit population trend is below the long-term average. White-tailed jackrabbits are not commonly found on the refuge. Snowshoe hares are much more common and are subject to cyclical fluctuations in population. MnDNR winter track survey routes monitor trends in snowshoe hare populations. Two of the statewide survey routes fall in the northeast corner of Marshall County, see Figure 17. Based on known cyclic patterns, snowshoe hare indices have been expected to decline, but they have yet to exhibit a multi-year cyclic decline, see Figure 18.

**Figure 17: Locations of established MnDNR furbearer winter track survey routes.**



**Figure 18: Winter track indices for snowshoe hare in Minnesota, 1994-2005.**



**Rabbit, Hare and Gray Squirrel Harvest Estimates:** None of these species have ever been hunted on the refuge. Hunting pressure will be low on these species and more a result of incidental take to grouse hunting. The best opportunities to harvest cottontails are in the SW, Central, SE and South Central regions, while jackrabbit harvest is more likely in the SW region of the state. Statewide harvest is documented in Cumulative Impacts section.

### 4.3.3 Migratory Birds

**Waterfowl Population Assessment on Agassiz NWR:** The 2005 CCP clearly states waterfowl production and breeding pair goals as stated below.

**CCP Objective 1.2: Duck Production on Agassiz NWR:** Based on a 5-year average, maintain annual brood production above the long-term average of over **13,000 ducklings**.

**CCP Objective 1.1: Breeding Ducks:** Maintain an annual average of **7,000 breeding pairs** of ducks over a 5-year period by providing optimal breeding habitats via the Habitat and Marsh & Water Management Plans.

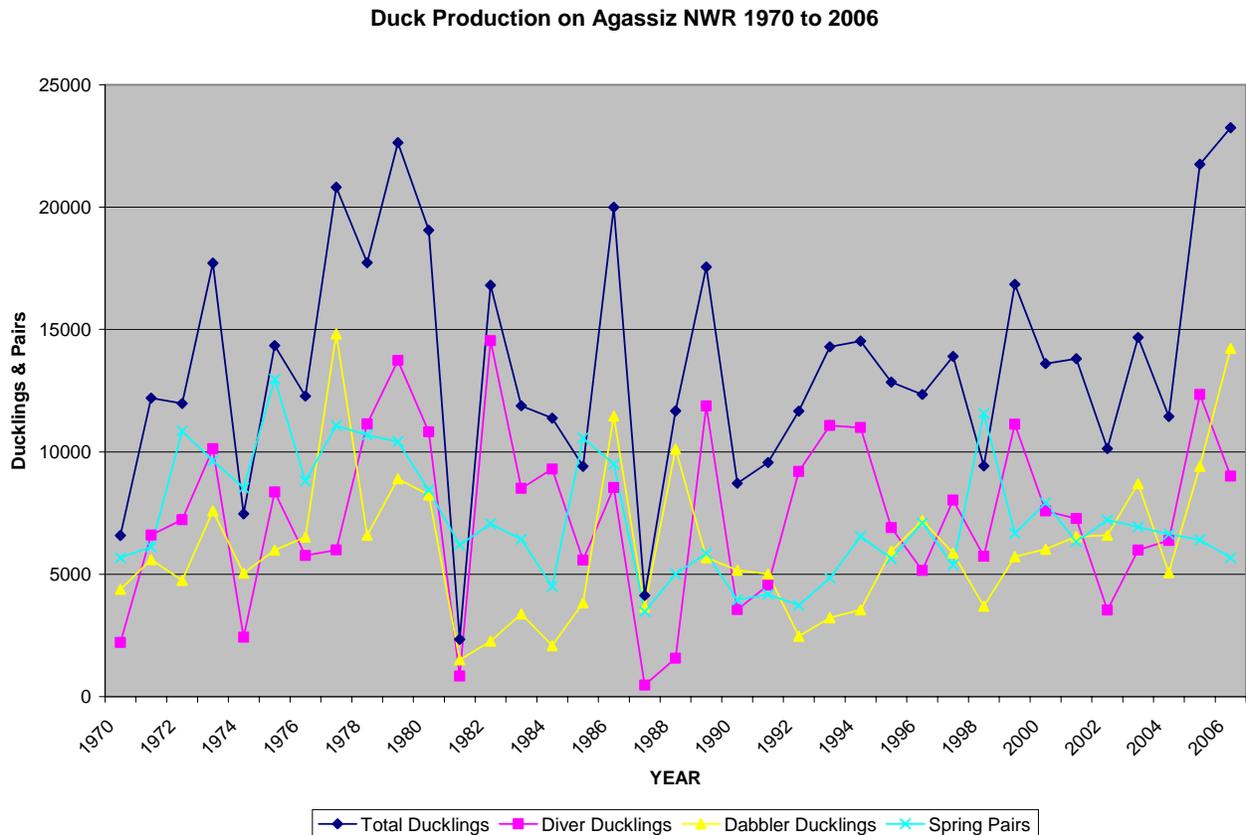
Following are 2006 survey results for Agassiz and adjoining WMA's.

- **Agassiz NWR Breeding Pair and 4-Sq mile results for 2006:** The estimated number of indicated pairs on Agassiz NWR was 5,666, a decrease (-11.5%) from 2005's total of 6,403. Dabblers decreased by 26.2% and divers increased by 18.7% from 2005. The 4 square mile survey plot also indicated an increase in divers (83%), but due to the decrease in dabblers the overall increase for all ducks was 39%. This year's estimated number of pairs was below the long term average of 7,098.
  1. **Mallards:** continued to increase after the low estimate of 573 in 2004. The 2006 estimate was 1,245 pairs compared to 1,009 in 2005.
  2. **Green-winged teal:** increased to 86 pairs from 4 in 2005.
  3. **Blue-winged teal:** decreased (-34%) to 1,475 pairs from 2,238 in 2005.
  4. **Gadwall:** decreased (-97%) to 13 pairs from 384 in 2005

While yearly variations are interesting it is long-term averages that should be looked at for breeding waterfowl populations.

- **Eckvoll and Elm Lake State WMAs Breeding Pair results for 2006:** Total pairs of all ducks were estimated at 1,173 compared to only 304 pairs last year. This is a 286% increase over last years estimate with large increases in both divers and dabblers.
- **Agassiz NWR plus State WMAs Breeding Pair results for 2006:** The combined total pair estimate was 6,839 pairs compared to 6,707 pairs in 2005.
- **Agassiz NWR Duck Production (Brood) Population 2006:** Estimated production for dabblers was 14,227 and 9,015 divers for a total of 23,242 ducklings. This was a 7% increase over last year (2005) and well above the long term average production of 13,533. The production estimates for the past two years are the highest since the late 1970's when production estimates were between 19,000 and 23,000 for a four year period. Mallard broods regained the number one spot in the dabbler category with 56 broods compared to 32 blue-winged teal broods. Ring-necked ducks also returned to being the number one diver species with 22 broods compared to 16 redheads. In the past some large production estimates have been questioned because of drought conditions concentrating broods in road ditches. This was not the case this year as the pools were only a little below objective level during the first brood count, and airboat trips in Agassiz Pool revealed an abundance of broods throughout the pool during July and August. Figure 19 summarizes duck production on Agassiz NWR for the last 36 years

**Figure 19. Agassiz NWR Breeding Pairs & Duck Production from 1970 to 2006.**



**Refuge Goose Population Assessment:** Canada goose populations are expanding statewide and increasingly causing problems in agriculture and urban areas. The state exceeded its goals for Giant Canada Goose restoration by 3% in Northwest Minnesota by 2002. The spring pair and gosling count has become a low priority for the Refuge at this time, and we began to remove artificial nesting structures. Surveys are now done about every 3 years, if time allows. The last survey was done in 2004 resulting in estimated production of 611 goslings. Production of 975 goslings in 2001 was down from the peak of 1080 in the year 2000. The 17 year

average estimated production since aerial counts were discontinued is 694. Two major runoff events occurred in May in 2004 that could have impacted some nest success and gosling survival. Refuge populations are stable.

**Duck and Goose harvest Estimates for an Eastern portion of Agassiz NWR open to state seasons:** There has never been waterfowl or goose hunting on Agassiz NWR. This will be a walk-in hunt area from the adjoining Eckvoll WMA. Based on hunting pressure in the Eckvoll WMA, waterfowl harvest on Agassiz is estimated at 75 ducks and 15 geese maximum.

**Woodcock, Rail and Snipe:** There were a few requests for woodcock hunting on the refuge. This was considered but numbers are low on the refuge and populations are declining as well as harvest regionally. Rail and Snipe were considered, only to be consistent with State seasons, but no one from the general public requested hunting opportunities for these species; consequently, they were not formally considered.

**Impacts to Migratory Birds:** Impacts due to disturbance prior to and during migration for all wetland migratory species and direct mortality to waterfowl due to hunting will occur in a 14,825 acre area (25% of refuge) on the eastern portion of the refuge adjoining Eckvoll WMA. The earliest hunting seasons begin September 1 and ice-up usually occurs in late November. Locally reared waterfowl will be disturbed and harvested as will migratory waterfowl. This will be a walk-in hunt area with very low hunting pressure so disturbance and mortality from a local, regional and national level are fairly minimal.

### 4.3.4 Threatened & Endangered Species

The population assessment is similar to that described in Alternative A.

**Bald Eagles:** Non-toxic shot must be used to hunt waterfowl and upland game on the refuge. Eagles may benefit slightly as crippled/dead birds may provide an easy food source. This will be more advantageous to young eagles. There will more deer harvested (max 18) by the archery, muzzleloader (blackpowder) and youth hunts which will also provide more gut piles. Lead poisoning may occur through ingestion of deer carcasses. There may be minor, temporary disturbance to eagles with increased hunter activity.

**Gray Wolf:** The potential for illegal killing of wolves increases as there will be more hunting activity. This is of special concern in the eastern section of the refuge that borders the Eckvoll WMA. Hunting seasons begin in mid-September when adult wolves may leave pups on rendezvous sites, leaving them more vulnerable. This is also a time adults bring the pups on hunting forays. There will more deer harvested (max 18) by the archery, muzzleloader (blackpowder) and youth hunts. Wolves may benefit slightly in the short term as more crippled/dead deer may be available as well as gut piles for food.

### 4.3.5 Habitat

**General:** Impacts similar to Alternative A.

**Prescribed Burning:** Late summer and fall prescribed burning activities would not occur in the 14,825 acre unit (25% of refuge) on the east side due to concerns for hunter safety. It would be impossible to detect where walk in hunters are located. Since prescribed fire is utilized less frequently plant succession would not be set back as often. This would affect brushlands, grasslands, aspen forests, and marsh burns/habitat in this area and habitat goals set within the CCP would not be accomplished.

### 4.3.6 Other Public Use Activities

Alternative B's hunting program includes firearms deer season, as under current direction. New hunting opportunities will be provided for deer/archery, deer/muzzleloader and grouse hunters during and after the deer/firearms season on the entire refuge. This alternative allows walk-in hunting opportunities for bear, state deer seasons for archery and youth hunts, waterfowl and upland game like rabbits and squirrels in a 14,825 acre area on the east side of the Refuge.

Under Alternative B, conflicts with “limited” access wildlife viewers would exist during the month of September. In the 2005 CCP non-hunting winter activities, such as cross country skiing and snowshoeing will be permitted for the first time. These activities, most likely, will not be permitted until the end of December. Conflicts may occur with the hunting programs in Alternative B during the last two weeks in December. Details will be developed in the Visitors Service Plan.

### 4.3.7 Social Implications

The local public attitude toward the deer firearms hunt is positive by a majority of people. During the scoping process for the CCP and subsequent local public meetings, there was one comment that no hunting should be allowed on a National Wildlife Refuge and several comments that no bird hunting should be permitted on the refuge. There were about equal comments on opening the refuge to waterfowl hunting as to keeping it closed.

Under Alternative B, those who oppose new or any hunting opportunities will not be pleased. “Limited” access wildlife viewers, most likely will not be permitted in the eastern portion of the refuge. These types of long standing traditional users, mostly birders, are both local and from the Minneapolis Area and will not be pleased. Local hunting neighbors will be very pleased with the increased hunting opportunities in close proximity to home.

## 4.4 Alternative C: Open to Deer Archery/Blackpowder, Grouse, & Youth Hunts (Preferred Alternative)

Under this Alternative the following hunts are proposed in addition to the existing deer firearms hunt.

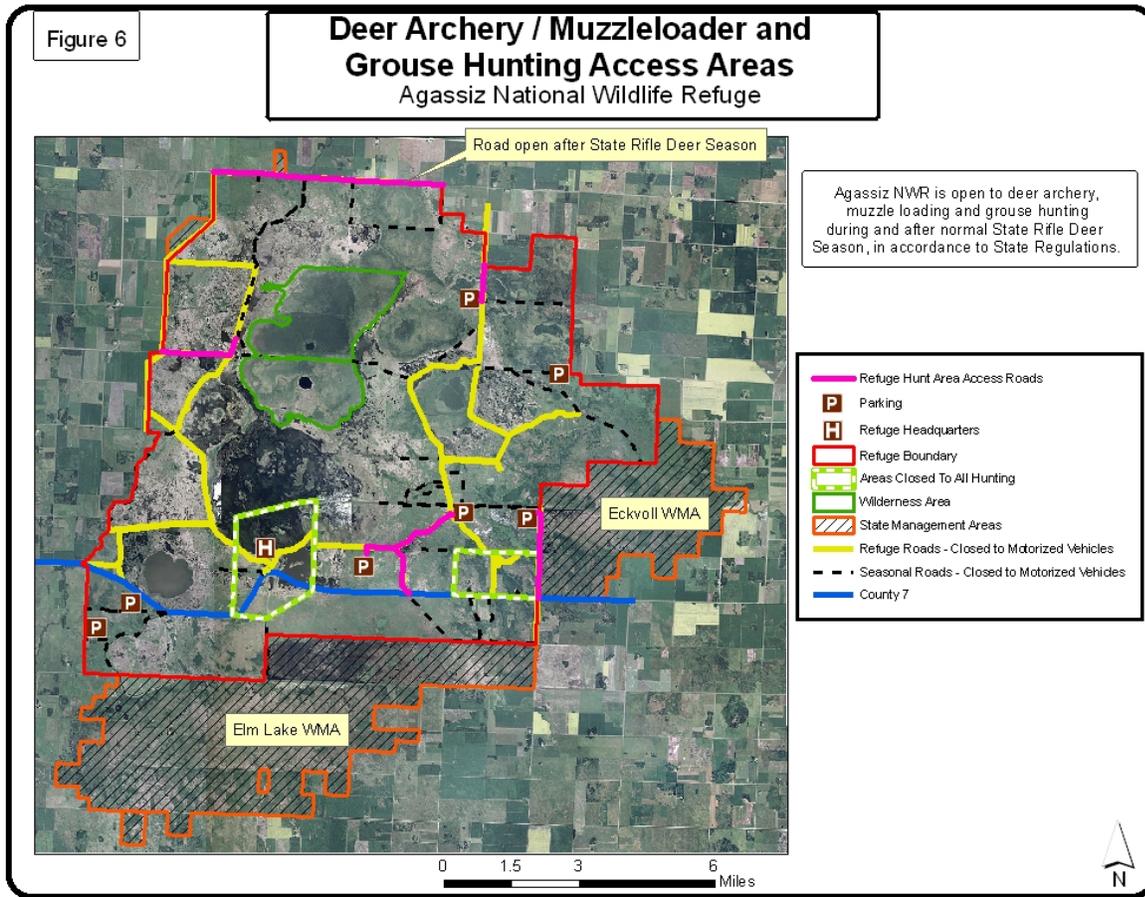
1. **Deer hunting opportunities will be expanded** to include deer/archery and deer/muzzleloader hunting beginning with the deer firearms season. See Map Figure 7. There will be a Youth Deer hunt in an eastern portion of the refuge bordering the Eckvoll WMA for two days in October. See Map Figure 8.
2. **Grouse hunting (ruffed and sharp-tailed) opportunities will be added** beginning with the deer firearms season, see Map Figure 7.
3. **Youth Waterfowl Hunt** following state season in the Farnes Pool Area adjoining Elm Lake WMA, see Map Figure 9.
4. **Accessible Hunting Program:** Determine the need for and develop an accessible hunting program for disabled hunters by conducting surveys and **feasibility study by 2010.**

The entire refuge, except two closed areas, will be opened to deer archery/blackpowder hunters and grouse hunters. During the 9 day deer firearms season in November, access will be the same for deer archery and grouse hunters. Hunters may use blackpowder/muzzleloaders during the deer firearms season. After the deer firearms season closes, access will be much more restricted as refuge roads will not be plowed, creating essentially a walk-in hunt. Strategic parking lots will be opened. Compare road closures with Map Figure 5, page 17. See Table 12 for season dates and length.

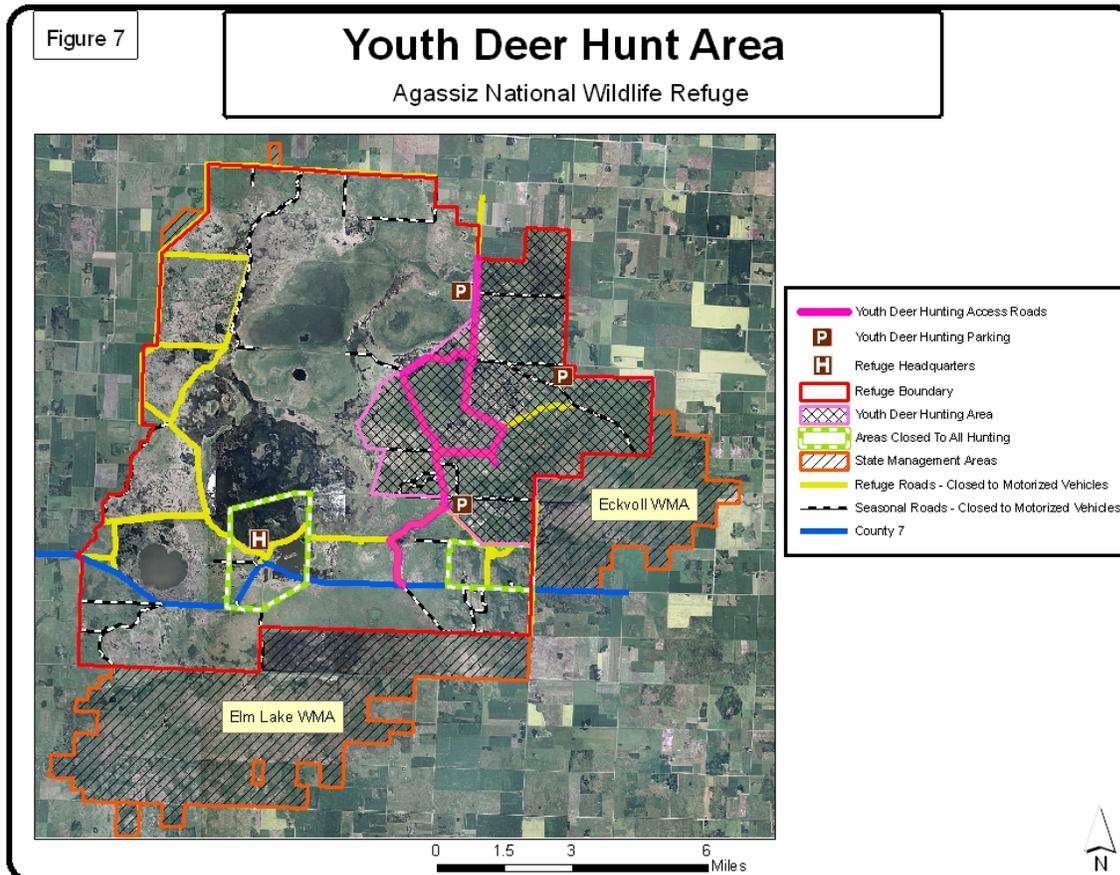
**Table 12 – Wildlife Species Opened for Hunting on Agassiz NWR Under Alternative C.**

Species	General Dates of Hunt
<b>White-tailed Deer:</b>	
Youth Hunt (state season)	October (1 weekend)
General Firearms (state season)	November (9 days -1 <sup>st</sup> full week in Nov)
Archery	November- December (during & after deer-firearms)
Muzzleloader (state season)	November -December (~15 days beginning end of Nov)
<b>Upland Game:</b>	
Ruffed Grouse	November–December (during & after deer-firearms)
Sharp-tailed Grouse	November (during & after deer-firearms)
<b>Waterfowl:</b>	
Youth Hunt	September (1 or 2 days)
<b>Moose:</b>	December – early; <b>CLOSED until populations recover</b>

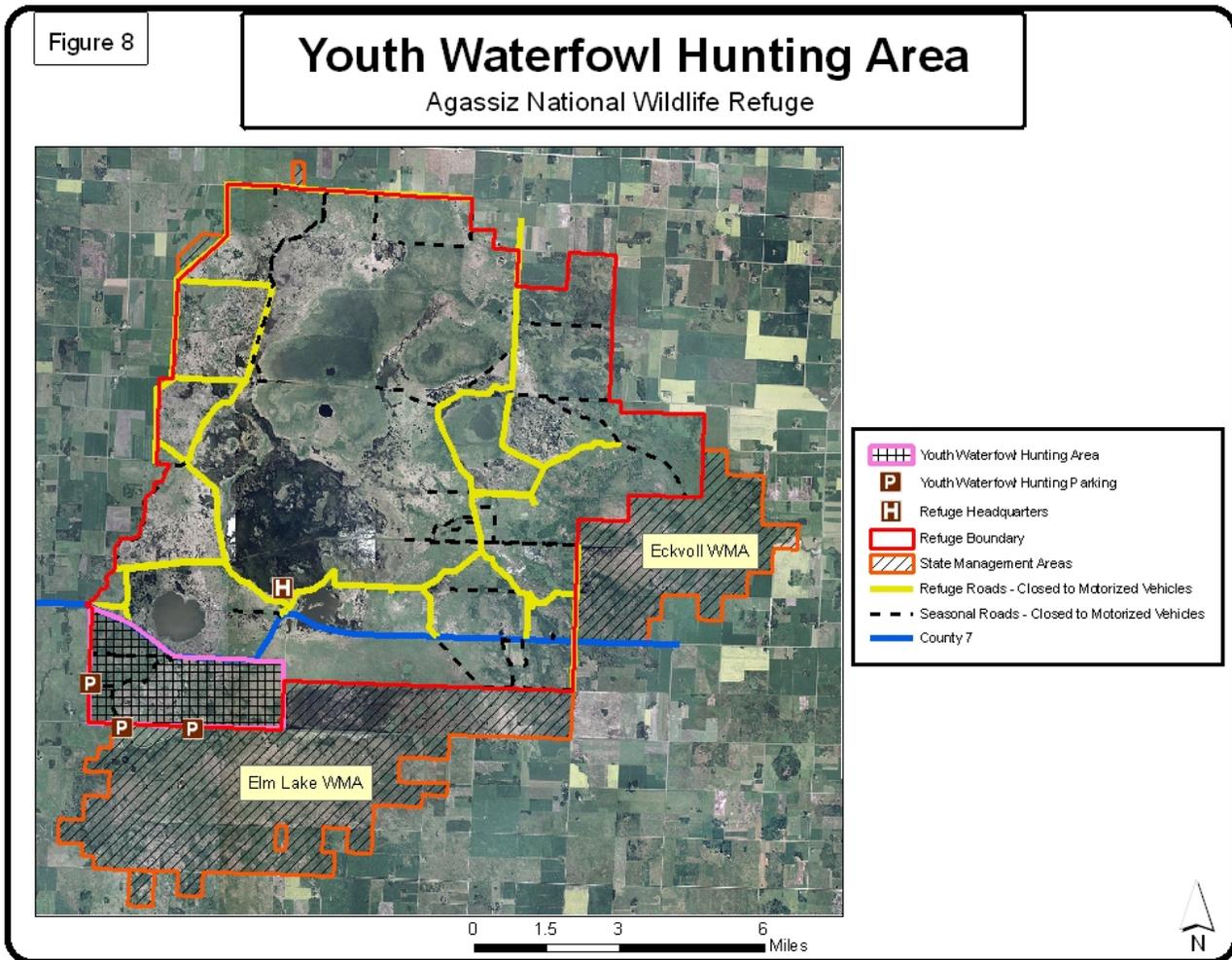
Map Figure 7



Map Figure 8



Map Figure 9



The proposed hunts were clearly supported in the approved 2005 CCP under **Goal 3: People** are as follows:

**Objective 3.1: Deer Hunt:** Provide annual firearms deer hunt that meets definition of “quality” in the FWS manual and is designed to maintain deer population density at 15-20 deer/square mile.

Strategy: Contact and work with Minnesota DNR, schools, hunt clubs, 4-H, Boy and Girl Scouts, NRA, and/or other groups to **implement youth hunt for deer on the Refuge.**

**Objective 3.2: Accessible Hunting Program:** Determine the need for and develop an accessible hunting program for disabled hunters by conducting surveys and **feasibility study by 2010.**

*Rationale:* At present, there is no accessible hunting program on the Refuge. There is one permanent, accessible deer stand available. There appears to be at least a modest demand for such a special hunt. A study would examine whether or not present access facilities on Refuge (roads, dikes, trails, blinds, tree stands) would be sufficient to allow for an accessible hunt, what deficiencies exist, and the cost of remedying these deficiencies.

**Strategies:**

- Conduct a study on the demand for an accessible hunting program, the feasibility of carrying it out on the Refuge, and the best location or locations for doing so.
- Conduct a pilot hunt if the study points towards its feasibility.

**Objective 3.4: Archery and Muzzle-loader Deer and Ruffed Grouse\*\* Hunts:** Provide hunting opportunities for deer (archery and muzzle-loader) and Ruffed Grouse during and after the state deer firearms season following state seasons and regulations. Access will be primarily walk-in with strategically located parking lots. The open area will be the same as for the deer firearms season.

*\*\*NOTE: Sharp-tailed grouse were added at the request of the MNDNR during the ‘Draft’ CCP review and comment period. Modifications were made to include this species in the Hunting Compatibility Determination and the Summary CCP, but due to an oversight were not added to Objective 3.4.*

*Rationale:* There has never been a season for archery and muzzle-loader hunting at Agassiz NWR, however, muzzle-loaders may be used during the regular firearms season. These hunts are popular among some hunters who seek a more challenging and primitive hunting experience. Due to the late season, this hunt will not cause disturbance to migrating birds.

**Objective 3.5: Youth Waterfowl Hunt:** Provide a quality youth waterfowl hunt on Farmes Pool in compliance with the state youth season and regulations. A future hunting plan would identify access boundaries.

*Rationale:* Agassiz NWR has always been treated as a sanctuary for waterfowl and has never permitted waterfowl hunting, under the rationale that numerous areas outside the Refuge boundaries are open to hunting for ducks and geese. Comments received during scoping indicated both support for this policy as well as some desire to open at least one part of the Refuge to hunting. The Robert E. Farmes Pool is located in the southwestern corner of the Refuge, contiguous with Minnesota DNR’s Elm Lake Wildlife Management Area. Further, it is clearly demarcated by east-west County Route 7. Thus, it is well situated to be clearly identifiable and isolated from the rest of the Refuge. In cooperation with Minnesota DNR, it should be feasible to confine waterfowl hunting to this portion of the Refuge during the normal state youth-only season.

## 4.4.1 Big Game

**Deer Population Assessment:** The deer population assessment is the same as listed in Alternative A and described in 4.2.1.

**Deer Harvest Estimation for Expanded Opportunities Under Alternative C:** Archery hunting has never occurred on the refuge. Harvest rates will be increased but by a very small amount as evidenced by only 1 deer harvested by archery and 1 by blackpowder on surrounding WMAs in 2005. Initially, because this is a new area, it might generate heightened interest. SMU 203 is not an easy area to hunt. Surrounding SMUs offer easier access and higher deer densities. Access for archery and muzzleloader hunters on the refuge will be very restricted, mostly walk in, as compared to the Deer Firearms season when a large portion of refuge interior roads are open. Youth hunters tend to gravitate toward SMUs in more agricultural areas. Table 13 details estimated harvest.

**Table 13. Estimated Additional Harvest for Deer under Alternative C.**<sup>1</sup>

Hunt Type	# of days	Area Open (acres)	Access	Estimated harvest (max)
Youth	2	14,825	Restricted	3
Muzzleloader	15	57,800	Very restricted	5
Archery <sup>2</sup>	59	57,800	Very restricted	5
<b>Total</b>	<b>76</b>			<b>13</b>

<sup>1</sup> Does not include harvest if accessible hunting opportunities are initiated.

<sup>2</sup> Archery season will NOT begin with State opening; it will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

An estimated harvest of 13 animals is high. Hunting pressure by all groups will be light as evidenced by only 1 deer by bow and 1 by muzzleloader harvested in 2005 on state owned lands in SMU 203. This SMU is not an easy area to hunt. Surrounding SMUs offer easier access and higher deer densities. Access for archery and muzzleloader hunters on the refuge will be very restricted, mostly walk in, as compared to the Deer Firearms season when a large

portion of refuge interior roads are open. Youth hunters tend to gravitate toward SMUs in more agricultural areas.

The possibility of an Accessible Deer Hunt, beyond the one accessible deer stand currently available, will not add substantially to the deer harvest. A feasibility study will be conducted by 2010 if there is a demonstrated need or demand for such a hunt. There are several possibilities of how this hunt may be conducted:

- A special season in a specific portion of the refuge.
- A special area for physically challenged hunters only during existing deer seasons.

**Moose Population Assessment:** The moose population assessment is the same as listed in Alternative A and described in 4.2.1. There will be no hunting permitted until population recovers.

#### 4.4.2 Upland Game

**Ruffed and Sharp-tailed Grouse Population Assessments:** The grouse population assessment is the same as listed in Alternative B and described in 4.3.2.

**Ruffed and Sharp-tailed Grouse Harvest Estimates under Alternative C:** The Agassiz refuge has never been open to grouse hunting, although it was approved for a portion of the refuge in the 1979 Master Plan.

MnDNR bag limits for ruffed and sharp-tailed grouse have not changed since the mid 1970s. State hunting seasons for both species begin mid-September but end for sharp-tailed grouse on November 30 and ruffed grouse on January 1.

Hunting pressure for these species during the proposed months of November (sharp-tailed grouse) and November and December (ruffed grouse) is much lower than September/October across the entire grouse range. There will be little to no hunting pressure on grouse during the 9 day deer firearms season in November. After the deer firearms season, access via refuge roads will be more restrictive. Hunting opportunities will be primarily walk-in, occurring at a time of year when it is colder and snow depth can be challenging. Currently, ruffed grouse habitat exists on less than 14% of the refuge and about 30% of the refuge is suitable for sharp-tailed grouse. The cyclical nature of ruffed grouse populations and the current low numbers of sharp-tailed grouse on the refuge will severely limit hunter interest and harvest. Scientific research confirms that hunting mortality for these species is compensatory to other non-hunting mortality. Based on this information, it is anticipated that hunter use and harvest will be low. Table 14 summarizes hunt parameters and estimated annual harvest. This is a high estimate for sharp-tails given the current use on the refuge. The ruffed grouse estimates will always fluctuate with population cycles. When the cycles are high there will more hunters and greater harvest and the converse is true when populations are low.

**Table 14. Estimated Harvest of Grouse for Proposed Grouse\* Hunting Opportunities in Alternative C.**

Hunt Type	# of days	Area Open (acres)	Available Habitat (acres)	Access	Estimated Annual Harvest
<b>Entire Refuge*</b>					
Ruffed	~60	57,800	8,500	Very restricted	15-25
Sharp-tailed	~28	57,800	18,000	Very restricted	0-5
<b>Total</b>					<b>15-30</b>

\* Grouse seasons will NOT begin with State opening; they will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

Under Alternative C fewer grouse will be harvested, and no bear, squirrels, rabbits or hare will be harvested as compared to Alternative B.

### 4.4.3 Migratory Birds

The youth waterfowl hunt (1 or 2 days, following state season) will be confined to the Farnes Pool Unit, which is south of Marshall County Road 7, see Map Figure 9. This area is about 4,220 acres in size (7% of refuge) and borders the Elm Lake WMA located to the south and east of this unit. The two areas provide a continuous block of habitat for young hunters.

**Waterfowl Population Assessment on Agassiz NWR:** The waterfowl population assessment is the same as listed in Alternative B and described in 4.3.3.

**Goose Population Assessment on Agassiz NWR:** The goose population assessment is the same as listed in Alternative B and described in 4.3.3.

**Duck and Goose Harvest Estimates for the Youth Duck Hunt on the Farnes Pool Unit of Agassiz NWR:** There has never been waterfowl or goose hunting on Agassiz NWR. This will be a walk-in or non-motorized boat access hunt from the adjoining Eckvoll WMA and County Road 7. Based on hunting pressure in the Eckvoll WMA, the youth hunt on average will probably attract 10 to 15 hunters with an estimated maximum number of ducks harvested at 20 to 40 and a few geese, <5, may also be harvested.

**Impacts to Migratory Birds:** The **Duck Production (Brood) Population** goal from the CCP was selected as a point of measure of sustainability for the Youth Duck Hunt, since this hunt occurs in mid-September when few migrant ducks are in the area. Impacts due to disturbance will occur ½ a day prior to the hunt and the day of the hunt. Currently the youth hunt is only on 1 day in September with a 4pm closure. Primarily local waterfowl and other waterbirds (ie. rails, grebes, etc) will be subject to disturbance. Migratory shorebirds may also be disturbed. Direct negative impacts will occur to waterfowl harvested.

Under Alternative C, fewer waterfowl will be harvested as compared to Alternative B, and there will be less disturbance to migratory birds.

### 4.4.4 Threatened & Endangered Species

The population assessment is similar to that described in Alternative A. An Endangered Species Act Section 7 Consultation was conducted and approved as part of the CCP EA.

**Bald Eagles:** Non-toxic shot must be used to hunt waterfowl and upland game on the refuge. Crippled/dead birds may provide an easy food source for eagles. This will be especially advantageous to young eagles. There will more deer harvested (max 13) by the archery, muzzleloader (blackpowder hunts) and youth hunts which will also provide more gut piles. Lead poisoning may occur through ingestion of deer carcasses. There may be minor, temporary disturbance to eagles with increased hunter activity.

**Gray Wolf:** The potential for illegal killing of wolves increases as there will be more hunting activity. The one day youth duck hunt occurs in mid-September when adult wolves may leave pups on rendezvous sites, leaving them more vulnerable. This is also a time adults bring the pups on hunting forays. There will more deer harvested (max 13) by the archery, muzzleloader (blackpowder), and youth hunts. Wolves may benefit slightly in the short term as more crippled/dead deer may be available as well as gut piles for food.

### 4.4.5 Habitat

**General:** Impacts similar to Alternative A.

**Prescribed Burning:** Each year Agassiz plans to burn about 10,000 acres in spring, summer (Aug/early Sept) and fall (mid Sept/Oct). Fall prescribed burning activity is usually over by the deer firearms season. However, during the last 10 years, which have been the wettest decade in the last century, there have been 3 years when conditions

were perfect for burning during the deer firearms season and one year when conditions were good after the deer firearms season. This trend may be further indications that the climate is changing.

Under Alternative C there would be very little effect on current prescribed burning operations. Both the youth waterfowl and deer hunts occur on weekends in September and October, respectively. Very little burning is done on weekends. These hunts occur in well defined units, consequently if good burning conditions existed on a weekend, other management units could be burned without impacting the hunts or concern for hunter safety.

Occasionally, there may be burning opportunities after the deer firearms season and during the deer archery/blackpowder seasons. The latter seasons have very restricted access. If there was any possibility of burning a management unit all access areas would be posted the night before. Burn Units along the north and northeast boundaries of the refuge, where walk-in hunting by neighbors in forested areas is likely to occur, would not be considered for burning. Hunter safety is of utmost concern.

#### **4.4.6 Other Public Use Activities**

Alternative C's hunting program includes firearms deer season, as under current direction. New hunting opportunities will be provided for deer/archery, deer/muzzleloader and grouse hunters during and after the deer/firearms season on the entire refuge except two closed portions. This alternative allows a youth deer and waterfowl hunt on designated areas following state seasons.

Under Alternative C, conflicts with "limited" access wildlife viewers would not exist for any of the hunts. Some conflicts may exist with auto-tour route users during the youth deer hunt as access to the designated youth hunt area will be via the auto-tour route. Signs and personnel will be in place at key locations during this two day hunt.

Conflicts between hunter and non-hunters may occur with a new walking trail that will be opened to year-round use in the Farnes Pool Area in regards to the youth waterfowl, deer firearms, archery and blackpowder hunts. Signs will be posted at the trail head during all hunts. Hiking will not be restricted but hikers will be notified of the hunts and proper attire required.

In the 2005 CCP non-hunting winter activities, such as cross country skiing and snowshoeing will be permitted for the first time. These activities, most likely, will not be permitted until the end of December. Conflicts may occur with the deer archery and grouse hunts during the last two weeks in December. Details will be developed in the Visitors Service Plan.

#### **4.4.7 Social Implications**

The local public attitude toward the deer firearms hunt is positive by a majority of people. During the scoping process for the CCP and subsequent local public meetings, there was one comment that no hunting should be allowed on a National Wildlife Refuge and several comments that no bird hunting should be permitted on the refuge. There were about equal comments on opening the refuge to waterfowl hunting as to keeping it closed.

Under Alternative C those who oppose new or any hunting opportunities will not be pleased. Local hunting neighbors will be very pleased with the increased hunting opportunities in close proximity to home. Many people will be pleased with the limited youth hunting opportunities. Those opposing waterfowl hunting may see the youth waterfowl hunt as an acceptable compromise.

# Summary of Effects by Alternative

This section describes the environmental consequences of adopting each Refuge management alternative. Table 2 addresses the likely outcomes for specific issues and is organized by broad issue categories.

## 4.5 Cumulative Impact Analysis

“Cumulative impact” is the term that refers to impacts on the environment that result from the incremental impact of the proposed action when added to other past, present and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In this section, the cumulative impacts of the Preferred Alternative C (Proposed Action) are fully developed. Alternative A (No Action) cumulative impacts are minimally developed as this has been a long-term activity that will continue. Alternative B was not fully developed as this alternative would negatively impact habitat management activities.

### 4.5.1 Alternative A: Current Direction (No Action)

#### 4.5.1.A. Cumulative Impact of No Action on Wildlife Species.

##### Deer Populations

**Refuge Deer Population Assessment:** Deer populations on Agassiz refuge and northwest Minnesota were summarized in Section 4.2.1. As discussed in this section deer densities continue to increase throughout most of the farmland/transition zone. In northwestern Minnesota, simulated deer densities indicate a slight downward trend over the last couple of years. Efforts to reduce deer in this area may be having an impact on the overall population. However, most managers and constituent groups indicate there are still too many deer in northwestern Minnesota. The recent outbreak of Bovine Tuberculosis in Northwest Minnesota has resulted in the MNDNR taking action in trying to eliminate 900 deer from an area just northeast of the refuge.

##### **Regional Deer Population Assessment**

**Monitoring Population Trends Of White-Tailed Deer In Minnesota’s Farmland/Transition Zone – 2006**  
Marrett D. Grund, Farmland Wildlife Populations and Research Group

*Population Trends and Densities:* Deer densities continue to increase throughout most of the farmland/transition zone. Deer densities were highest in the Big Woods DMU, lowest in the Prairie DMU, and at intermediate levels in the Northwest (Agassiz & Red River DMUs). Detailed long-term trends in deer densities can be reviewed in the following Table 2.

In northwestern Minnesota, simulated deer densities indicate a slight downward trend over the last couple of years. Efforts to reduce deer in this area may be having an impact. However, most managers and constituent groups indicate there are still too many deer in northwestern Minnesota. In the Big Woods DMU, which incorporates the transition zone, deer densities continue to increase. Rate of increase is most rapid in the Southeast and Metro DMSUs, despite efforts to reduce deer populations in these areas.

In the Prairie DMU, deer densities have increased slowly over the last couple of years. Rate of increase is fastest in the North and Southwest DMSUs. This trend reflects objectives and management strategies of most wildlife managers in southwestern Minnesota who wish to either maintain or slightly increase deer herds in their respective work areas.

Table 2. Pre-harvest deer density estimates <sup>a</sup> (deer/mi<sup>2</sup>) by Deer Management Unit (DMU), sub-unit (DMSU), and permit area (PA) in Minnesota's Farmland/Transition Zone, 1994-2006.

DMU	DMSU	PA	Area mi <sup>2</sup>	Pre-harvest density													
				1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
RED RIVER	<i>West</i>	252	1039	3	4	3	3	3	3	3	3	4	4	4	4	4	
		253	1021	5	6	5	4	5	5	5	5	5	4	4	3	2	1
		Total	2060														
	<i>East</i>	254	396	10	10	9	9	9	9	10	11	11	12	12	11	9	9
		255	631	11	12	10	10	10	10	11	11	12	12	13	13	11	10
		256	654	8	8	7	7	8	8	8	9	8	9	8	7	6	7
		257	413	18	19	16	14	14	14	14	15	15	14	13	11	11	8
		258	618	13	13	11	11	11	11	11	12	13	13	13	12	10	8
		259	494	12	12	10	10	10	10	10	11	12	13	13	12	12	11
		Total	3206														
Red River Total			5266														
AGASSIZ	201	155	7	6	4	3	4	5	6	7	7	8	7	8	8	8	
	202	156	16	15	11	10	12	14	16	17	17	17	15	13	12		
	203	108	16	12	5	4	4	5	7	8	10	12	12	13	15		
	204	718	11	11	9	7	8	9	9	9	9	9	8	8	7		
	205	642															
	206	471	13	13	10	9	10	11	13	14	14	13	11	10	8		
	207	300	12	12	9	9	10	11	12	13	13	14	12	11	9		
	208	448	6	5	4	4	5	5	6	7	7	7	7	7	6		
	209	576	9	9	8	8	8	9	9	10	10	10	10	10	7		
	210	485	17	18	14	13	14	15	16	16	17	17	17	15	10		
Agassiz Total			4059														

### Statewide Deer Population Assessment

**2006 Minnesota August Roadside Survey:** The index of white-tailed deer (15.0 deer/100 mi) was comparable to last year and the 10-year average, and was 50% above the long-term average (1974-05; Table 15, Figure 20). There were no significant regional changes from 2005. The farmland deer population index shows an increasing long-term trend since 1979. Modeling projections based on independent data also indicate an increasing trend for deer populations in the farmland zone.

**Table 15. Statewide trends (% change) in number of White-tailed deer observed per 100 miles driven, Minnesota August roadside survey, 1955-2006.**

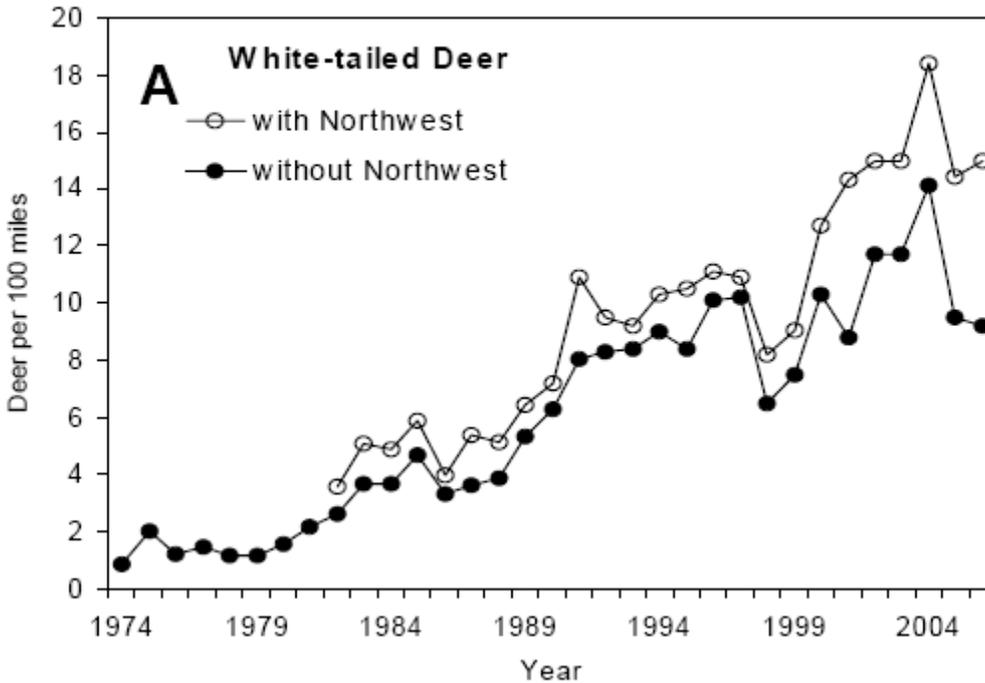
<i>n</i>	Change from 2005 <sup>a</sup>				Change from 10-year average <sup>b</sup>				Change from long-term average <sup>c</sup>			
	2005	2006	%	95% CI	<i>n</i>	1996-05	%	95% CI	<i>n</i>	LTA	%	95% CI
167	14.3	15.0	4	±20	165	13.0	16.1	±22	148	6.1	50	±25

<sup>a</sup> Includes Northwest region. Estimates based on routes (*n*) surveyed in both years.

<sup>b</sup> Includes Northwest region. Estimates based on routes (*n*) surveyed at least 9 of 10 years.

<sup>c</sup> LTA = 1974-2005. Does not include Northwest region (8 counties in Northwest were added to survey in 1982). Estimates for deer based on routes surveyed >25 years.

**Figure 20. Rangewide index of white-tailed deer seen per 100 miles driven. Based on all survey routes completed.**



**Minnesota Statewide White-Tailed Deer Population Estimate:** The Statewide population estimate for white-tailed deer is 1.2 to 1.4 million. *Personal communications with Doug Franke, Thief River Falls Area Wildlife Manager, MNDNR.*

**Deer Harvest Assessment**

**Local Deer Harvest Assessment for SMU 203:** As a result of the February 2005 deer count, antlerless harvest limits were more restrictive for the 2005 general deer season in SMU203 by mutual agreement of Agassiz NWR and MNDNR, when harvest moved from Intensively Managed (5 antlerless harvest) in 2004 to Managed (1 antlerless). Pre-season hunt estimates for 2005 were 20 deer/mi<sup>2</sup>. Harvest limits were further restricted in 2006 to a lottery system based on the February 2006 deer count. Pre-season hunt estimates for 2006 were 17.5 deer/mi<sup>2</sup>.

**Table 16. Number of Deer Harvested and Hunter Visits in SMU 203 During the last 3 Hunting seasons.**

Year	# Deer harvested	# Hunter visits
2004	203	470
2005	163	400
2006	~110	370

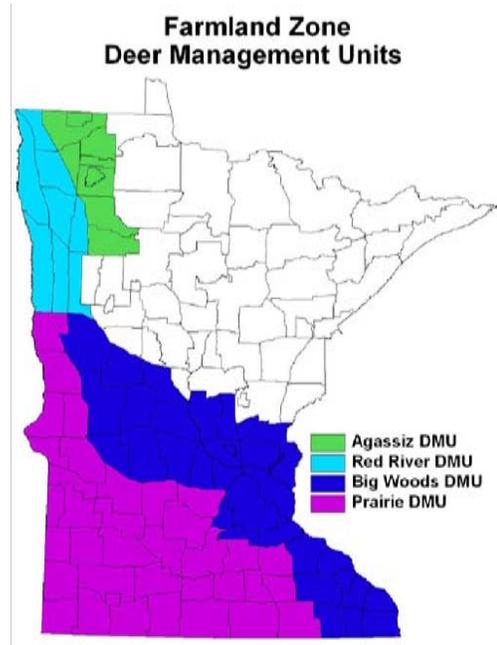
Deer harvested in all three years were in excellent condition.

**Regional Deer Harvest Assessment:** In northwestern Minnesota, registered harvest densities have steadily increased over the past 5-6 years. Harvest densities are higher and have increased at a faster rate in the Agassiz Deer Management Unit (DMU) than in the Red River DMU. See Figure 21 for DMU locations.

**Figure 21. Deer Management Units in the Farmland Zone of Minnesota, 2005.**

In the Big Woods DMU, harvest densities vary across DMSUs and across years. Trends in harvest densities have been most stable in the Metro and most variable in the Southeast DMSU. Harvest densities have generally increased in the Central and North DMSUs over the past 4-6 years. In the Prairie DMU, harvest densities have declined in the River DMSU but have been relatively 20 stable in North and Southwest DMSUs. Harvest densities have fluctuated in the Southeast DMSU but are comparable to harvest densities a decade ago.

**Statewide Deer Harvest Assessment:** Each year, 500,000 hunters harvest between 150,000 and 200,000 deer in Minnesota. In 2005, hunters registered 255,736 deer. This harvest marked the third highest harvest recorded in Minnesota. See Table 17 (also labeled 2) for a summary of 2005 and see Table 18 on harvest from 1994 to 2005.



**Table 17 (2). Includes harvest for the entire state by zones; SMU 203 lies in the northern portion of Zone 2.**

Table 2. Deer Harvest by License Type and Zone, 2005.

Firearms/Zone	Hunters	Bucks	Harvest Antlerless	Total	Overall Success
1	169,184	40,412	45,967	86,379	51.1%
2	107,754	25,443	36,623	62,066	57.6%
3A	18,454	5,440	2,424	7,864	42.6%
3B	20,685	2,840	8,252	11,092	53.6%
4A	66,578	14,255	15,316	29,571	44.4%
4B	30,193	7,204	10,781	17,985	59.6%
Multi-Zone Buck	28,233	5,830	0	5,830	20.6%
Free Landowner <sup>1</sup>	4,196	0	1,314	1,314	31.3%
All-Season Deer <sup>1</sup>	59,090	14,957	18,099	33,056	55.9%
Muzzleloader	32,519	3,613	11,808	15,421	47.4%
Archery <sup>2</sup>	75,989	7,236	16,302	23,538	24.6%
<b>TOTAL<sup>3,4</sup></b>	<b>474,044</b>	<b>106,700</b>	<b>149,036</b>	<b>255,736</b>	<b>53.9%</b>

<sup>1</sup> Includes deer taken during regular firearms, muzzleloader, and archery seasons

<sup>2</sup> Includes Camp Ripley and all-season harvest. Total number of people who bought only an archery license was 23,737.

<sup>3</sup> Due to the fact that a hunter can buy multiple licenses, hunter numbers are an estimate.

<sup>4</sup> Column totals do not add to 255,736 because all-season firearm harvest was placed in appropriate zone.



Figure 1. 2005 Firearms and Archery Deer Seasons.  
 \*Northern Border Zone (Permit Areas 116 and 127): September 17-November 20.  
 Remainder of State: September 17-December 31. Antlerless deer and legal bucks may be taken by archery, except only legal bucks may be taken in permit areas that have no either-sex permits or have youth-only either-sex permits.

**Table 18. Statewide Firearms, Archery, and muzzleloader harvest, License Sales, and Success Rates 1994-2005**

<b>REGULAR FIREARMS</b>											
	1995	1996	1997	1998	1999	0020	2001	2002	2003	2004	2005
Resident License Sales	419,965	389,745	369,190	378,320	395,745	14400,8	401,005	367,964	44,8753	98309,6	98291,2
Non-Resident License Sales	9,339	8,535	7,830	8,852	9,970	10,595	10,972	10,835	11,334	3612,0	2312,5
Antlerless Permit Sales	22,603	27,148	32,229	20,884	23,785	34,8 02	59,013	105,699	94,2011	86183,1	66184,5
Multi-Zone Buck License Sales	29,902	38,806	42,803	44,739	43,903	42,669	41,921	35,658	32,929	5932,3	3328,2
Resident Youth License Sales	1,835	2,964	3,844	3,445	2,038	3,215	4,011	2,884	34,463	4751,3	0150,5
All Season Deer License Sales						2,384	3,986	22,125	30,998	0846,0	59,090
Total License Sales	483,644	467,198	455,896	456,240	475,441	495,289	519,601	545,165	48,8006	34634,6	1126,26
Registered Buck Harvest <sup>1</sup>	88,997	71,242	64,867	82,921	92,584	102,961	98,894	101,333	110,440	116,612	495,59
Antlerless Permits Offered	201,525	154,195	150,195	140,280	177,380	232,595	286,540	365,667	31,625	6030,7	028,83
Antlerless Permits Issued	162,761	116,650	105,481	108,016	135,852	180,490	196,603	192,907	25,386	1124,1	625,65
Antlerless Permits App.	257,653	174,329	142,260	151,148	214,597	237,571	225,341	202,086	30,253	5428,4	331,40
Registered AL Harvest <sup>1</sup>	109,196	68,106	62,038	60,475	71,681	88,492	98,169	102,280	47,4201	78123,2	3119,36
Registered Total Harvest <sup>1</sup>	198,193	139,348	126,905	143,396	164,265	191,453	197,063	203,613	57,8602	90239,8	7214,95
Registered % Successful <sup>2</sup>	40.1	29.8	27.8	31.4	34.8	38.6	37.9	37.3	39.7	37.8	34.3
<b>ARCHERY</b>											
Resident License Sales	70,056	67,058	63,499	63,826	66,226	68,947	69,608	57,532	33959,	0150,6	350,29
Non-Resident License Sales	1,171	1,098	980	1,029	1,073	1,271	1,288	1,275	1,428	1,144	1,207
Youth Archery Sales									7483	6172	97,48
Mgmt Permit License Sales	15,387	15,632	17,478	15,846	16,945	20,393	22,141	18,126	N/A	N/A	N/A
Total License Sales	86,614	83,788	81,957	80,701	84,244	90,611	93,037	76,933	76760,	4551,7	58,989
Registered Harvest	14,521	14,338	13,258	12,306	13,376	15,776	15,884	14,744	72021,	3717,2	18,975
Registered Harvest - AS license										3,489	4,563
Total Archery Harvest	14,521	14,338	13,258	12,306	13,376	15,776	15,884	14,744	69121,	2620,7	23,538
Registered % Successful <sup>2</sup>	16.8	17.1	16.2	15.2	15.8	17.4	17.1	19.2	31.8	29.2	24.6
<b>MUZZLELOADER</b>											
Total Muzzleloader License Sales						11,972	13,043	11,764	1429,	10,512	9,226
Estimated All-Season Hunters									02012,	14,168	23,293
Total Muzzleloader Harvest	2,452	3,367	3,164	3,152	2,928	4,548	4,494	3,505	9,466	9,289	15,421
Registered % Successful <sup>2</sup>						38	34.5	29.8	44.7	37.6	47.4
Total Registered Harvest	215,166	157,317	143,327	158,854	180,569	211,777	217,452	2 ,05022	525290,	260,604	255,736

<sup>1</sup> Does not include free landowner licenses <sup>2</sup> Based on total license sales - does not include all-season deer

## Cumulative Impacts Summary for Existing White-tailed Deer Hunting Opportunities on Agassiz NWR (SMU 203)

Agassiz NWR is 61,500 acres in size. Deer harvest rates for the 9 day deer firearms season are set jointly each year by MNDNR and refuge staff based on an annual winter deer survey. This annual assessment allows managers to react accordingly to either increase or decrease harvest rates based on deer densities. The existing deer harvest in SMU 203 has a minimum affect on the long-term deer population in this unit.

**Table 19. Cumulative Impacts of Existing 9 Day Deer Firearms Hunt on Agassiz Refuge/SMU203 (2005 data) compared to Statewide Harvest.**

Hunt Location & Type	Harvest
Agassiz/SMU203 2005 deer firearms harvest	163
Zone 2	62,066
Statewide harvest (all types)	255,736

The current harvest has a miniscule impact on the statewide deer population of 1.3 million deer.

### Non-hunted Resident Wildlife & Migratory Birds

Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as rabbits, voles, moles, mice, and shrews; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory butterflies and moths, these species have very limited home ranges and hunting could not affect their populations regionally; thus, only local effects will be discussed.

Some species of butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor or have completely passed through central Minnesota by the hunting seasons in late September and late November - December. Any hunter interaction would be commensurate with that of non-consumptive users.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds including nuthatches, finches, chickadees, etc. Disturbance by hunting to non-hunted migratory birds should not have cumulative negative impacts for the following reasons. Hunting pressure will be minimal. The Deer Season does not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced by hunting are not relevant for this reason. Most migratory shorebirds and waterbirds (rails, bitterns, grebes, etc.) have moved out of the area, especially if ice-up has occurred. Migratory birds of prey (eagles, roughed legged hawks, etc.) are still in the area, but disturbance is expected to be minimal. Disturbance to the daily wintering activities, such as feeding and resting, of residential birds might occur.

Disturbance to non-hunted wildlife would increase slightly. However, impacts would be minimal for the following reasons. Many small mammals are less active during November when the 9 day hunt occurs. Many of these species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blooded reptiles and amphibians also limits their activity during the deer season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. The refuge has estimated current hunter density during the regular deer firearms season at 1 hunter per 150 acres. This is based on an average of 400 visits per the entire season.

## Waterfowl

The 9 day deer firearms hunt has minimal impact to migrating waterfowl. If ice-up has occurred waterfowl have moved out of the area. If ice-up has not occurred some waterfowl may still be utilizing impoundments. Canada geese may still be using refuge agricultural fields. Disturbance to waterfowl and geese may occur by hunter vehicles driving on refuge roads next to impoundments or walking through or near agricultural fields. The disturbance to waterfowl by vehicles is commensurate to or has less effect than that by non hunting activities because generally there are far fewer birds in the area. The existing refuge agricultural fields are being phased out and converted to native vegetation over the next 15 years per approved guidance in the 2005 CCP. This conversion will reduce use by waterfowl and geese.

## Endangered Species

Federally listed Threatened Species that occur in Marshall County include the bald eagle, gray wolf and piping plover. Two federally listed species of animals occur at Agassiz NWR, the gray wolf and the Bald Eagle, both listed as threatened. Populations of both of these species are recovering regionally as well as nationally. The wolf was recently reclassified by the Service from endangered to threatened in adjoining states; however at this time are still listed as endangered. The Bald Eagle may be “de-listed” and removed from the list of species protected by the federal Endangered Species Act of 1973.

There are a half-dozen Bald Eagle nests that have been used on Agassiz NWR and two wolf pack territories. Many Bald Eagles utilize the Refuge for feeding at different times of the year; especially during early spring and late fall when as many as 60 have been observed.

There has been no evidence of eagles being shot during the deer firearms season. Dead deer and gut piles provide a source of food, but may cause lead poisoning. The deer firearms season does pose a direct threat to wolves; however, it also provides a food source with wounded animals and gut piles at a time when pups and adults need to build fat reserves.

Nesting and migrating eagle use have increased on the refuge over the last several years due to a nationwide recovery of this species. Wolf numbers increased from 0 prior to 1980 to two established pack territories. Two packs have resided on Agassiz NWR and adjacent WMAs for over 13 years. The increase in both species has occurred with an annual deer firearms season in place on the refuge. The existing deer firearms hunt poses no threat to eagle nests or wolf dens. There are no negative cumulative effects to local or regional bald eagle or wolf populations. An Endangered Species Act Section 7 consultation was conducted as part of the 2005 CCP development and approved.

### **4.5.1.B. Cumulative Impact of No Action on Refuge Programs, Facilities, and Cultural Resources.**

**OTHER REFUGE-WILDLIFE-DEPENDENT RECREATION:** Annually there are about 22,000 visitors to the refuge. Most of these visitations are from May – August for bird and wildlife observation. Visitor numbers drop sharply in early September, after many prairie, marsh and shorebird species have migrated, and parents and students have returned to school and university activities. There have been no known visitor conflicts between hunters and non-hunters such as those participating in wildlife observation, environmental education and interpretation.

**REFUGE FACILITIES:** The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water control structures, raceways, etc.”

Under the no action alternative those facilities most utilized by non-consumptive visitors are the refuge office, parking lots, trails, auto-tour route, two photo blinds, two observation decks, a tower, two outhouses, and interior roads (access is regulated to minimize disturbance). Facilities used by hunters are the same except for the tower. In addition, a handicap accessible deer stand is available.

Routine maintenance or improvement of existing facilities cause minimal short term impacts to localized soils and may cause some wildlife disturbances and damage to vegetation.

**CULTURAL RESOURCES:** There are no direct or cumulative impacts to cultural resources. See section 4.1.1 for detailed discussion.

#### **4.5.1.C. Cumulative Impact of No Action on Refuge Environment and Community.**

Refuge personnel expect no sizeable adverse impacts of the No Action Alternative on the refuge environment which includes soils, vegetation, air quality, water quality, hydrology, and solitude. Some disturbance to surface soils and vegetation occur; however they are minimal and temporary. Hunting benefits vegetation as it is used to keep deer populations in balance with the habitat's carrying capacity. The refuge also controls access to minimize habitat degradation.

The local community and the state of Minnesota, in general, strongly support outdoor activities such as deer hunting. The State has passed legislation ensuring the right of Minnesotan's to hunt.

#### **4.5.1.D. Other Past, Present, Proposed, and Reasonable Foreseeable Hunts & Anticipated Impacts.**

Moose hunting has been allowed on Agassiz NWR. Moose hunting was allowed every other year. The season has been closed since 1996 due to the declining moose population on the refuge and in Northwest Minnesota. This decline, in large part, is attributed to warming temperatures. The last hunt occurred in 1994. Moose hunting will not be reopened until the population reaches refuge goals.

The deer firearms hunt has been a long standing tradition on Agassiz NWR. Hunter numbers and use days decreased dramatically in 1996 due to a severe winter which brought the refuge herd to the lowest numbers on record. Another severe winter followed in 1996-1997. Hunter numbers and use have increased slowly and are nowhere near peak use of the past. Hunting opportunities, higher deer populations and higher harvest limits are permitted in surrounding SMUs.

A Youth Waterfowl Hunting Day, Youth Deer Hunt (2 days), Deer Muzzleloader Season, and deer archery and grouse hunting seasons (delayed openings) beginning with the deer firearms season are proposed in the Preferred Alternative C. No other additional hunting is anticipated in the foreseeable future.

The U.S. Fish & Wildlife Service is in the process of reducing Region 3's staff by 20% over the next 2 years. There are no refuge law enforcement staff left at Agassiz NWR and refuge Law Enforcement staff have been reduced within the region over the years. Very few programs in the Service will be proposed for expansion with a reduced staff to plan, implement and administer these new programs.

If visitation levels expand in the unforeseen future, unanticipated conflicts between user groups may occur. Service experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) and limiting visitations are effective tool in eliminating conflicts between user groups.

#### **4.5.1. E. Anticipated Impacts if Individual Hunts are Allowed to Accumulate**

National Wildlife Refuges, including Agassiz NWR, conduct or will conduct hunting programs within the

framework of State and Federal regulations. Additionally, refuges coordinate with the MN DNR annually to maintain regulations and programs that are consistent with the State management program. The No Actions Alternative poses no issues with accumulated hunts.

Under Alternative C, Preferred and Proposed Alternative, deer hunting opportunities are expanded to include a Youth Deer Hunt (2 days, restricted area), a Youth Waterfowl Hunt (1day, restricted area and access) Deer Muzzleloader Season (15 days, restricted access), and deer archery and grouse hunting seasons (delayed openings, restricted access.) . The Agassiz NWR proposed action is at least as restrictive as the State of Minnesota and in the case of deer archery and grouse hunts more restrictive on season lengths. In addition, only small designated portions of the refuge are open to youth hunts.

This section will be more fully developed under Alternative C.

#### **4.5.2 Alternative B: Open to Bear, Waterfowl, Small Game, Deer Archery/Blackpowder (muzzleloader), & Grouse**

The Cumulative Impact of Alternative B will not be fully developed in this Environmental Assessment for the reasons listed below. This alternative would ...

- greatly inhibit prescribed burning activities on 25% of the refuge during late summer and fall burning season. Prescribed burning is a necessary habitat management tool.
- cause a greater likely hood of conflicts between existing non-consumptive users.
- result in more hunting days, more species harvested, and more animals harvested than in Alternative C, the preferred and proposed alternative.
- require more staff days, facilities and program management at a time when refuge staff , funds, and law enforcement capabilities are being reduced.

#### **4.5.3 Alternative C: Open to Deer Archery/Blackpowder, Grouse, & Youth Hunts (Preferred Alternative & Proposed Action)**

##### **4.5.3.A. Cumulative Impact of Proposed Hunt on Wildlife Species.**

#### **Deer Populations**

**Refuge Deer Population Assessment:** Deer populations on Agassiz refuge and northwest Minnesota were summarized in Section 4.2.1. and 4.5.1.A.

**Regional Deer Population Assessment:** Regional deer population assessment is the same as described in Section 4.5.1.A.

#### **Cumulative Impacts Summary for Existing White-tailed Deer Hunting Opportunities on Agassiz NWR (SMU 203)**

Agassiz NWR is 61,500 acres in size. Deer harvest rates for the current and proposed new deer hunting opportunities will be set jointly each year by MNDNR and refuge staff based on an annual winter deer survey. This annual assessment allows managers to react accordingly to either increase or decrease harvest rates based on deer densities.

The proposed new deer hunting opportunities for the refuge portion of SMU 203 will add additional deer hunting days (76) and estimated harvest (13) as outlined in Table 20.

**Table 20. Summary of Proposed Deer Hunting Opportunities**

Hunt Type	# of days	Area Open (acres)	Access	Estimated harvest (max)
Youth	2	14,825	Restricted	3
Muzzleloader	15	57,800	Very restricted	5
Archery*	59	57,800	Very restricted	5
<b>Total</b>	<b>76</b>			<b>13</b>

\* Archery season will NOT begin with State opening; it will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

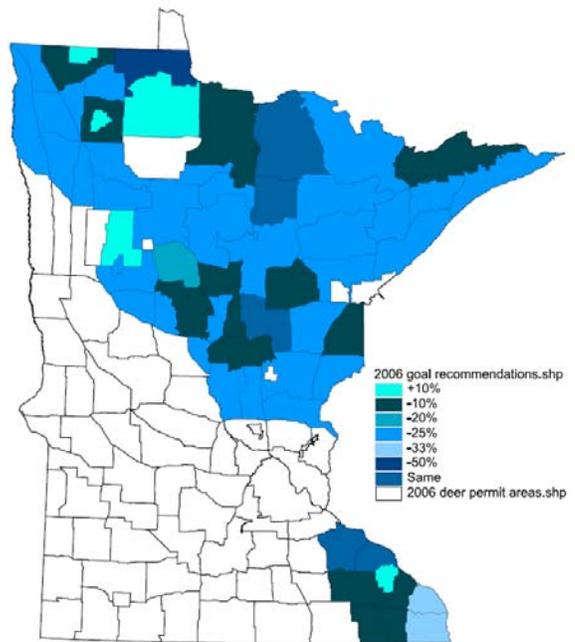
Estimated harvest of 13 animals is high. Hunting pressure by all groups will be light as evidenced by only 1 deer by bow and 1 by muzzleloader harvested in 2005 on state owned lands in SMU 203. This SMU is not an easy area to hunt. Surrounding SMUs offer easier access and higher deer densities. Access for archery and muzzleloader hunters on the refuge will be very restricted, mostly walk in, as compared to the Deer Firearms season when a large portion of refuge interior roads are open. Youth hunters tend to gravitate toward SMUs in more agricultural areas.

The MnDNR has developed deer population trend goals for the state, see Figure 22 for statewide recommendations. Figure 5 depicts deer population trend goals for the entire state. Population goals within  $\pm 10\%$  are indicative of relatively stable populations that are at or near objective level.

Table 21 shows population trend goals for SMU 203 and surrounding SMUs. SMUs 203, and 202 and 208 which immediately surround 203, are within the  $\pm 10\%$  goal.

**Figure 22.**

Deer Population Goal Setting - Trend Recommendations



**Table 21. MnDNR population target goals for the SMUs surrounding the refuge (SMU 203)**

SMU	Location relative to SMU 203	Deer Population Goal 2006
203	Agassiz NWR & WMAs	Increase herd by 10%
208	Adjacent to W,S,E boundaries	Reduce herd by 10%
202	Adjacent to N boundary	Reduce herd by 10%
206,207, 209,252,254, 255,256,257, 259,	N, W, S of SMUs 202, 208	Reduce herd by 25%
111	E of SMUs 202, 208	Increase herd by 10%

The estimated harvest of 13 animals from the proposed new hunting opportunities on Agassiz NWR is high and probably will never exceed this. There are greater numbers of deer killed on the roads in the surrounding area than what will be harvested by proposed hunts. The proposed hunts will not conflict with....

1. the migratory bird goals of the refuge since they occur after the birds leave;
2. fall prescribed burning management objectives as the burning season is usually over;
3. or pose a threat to ensuring an adequate prey base for the two active wolf packs, as deer density goals have been established to accommodate both wolves and hunters.

Although the estimated harvest (13 deer) in Table 22 shows an 8% increase in the deer harvest in SMU 203 by the proposed hunts, it will have a minimum affect on the long-term deer population in this unit and no impact on statewide harvest.

**Table 22. Cumulative Impacts of Existing & Proposed Deer Hunts on Agassiz Refuge (2005 data) compared to Statewide Harvest.**

Hunt Location & Type	Harvest
<i>All proposed deer hunts</i>	<i>13</i>
Agassiz 2005 deer firearms harvest	163
MNDNR Zone 2	62,066
Statewide harvest (all types)	255,736

The primary tool for managing or regulating the population in SMU 203 is through the deer firearms season, where the bulk of the harvest takes place. The harvest (13) by the proposed hunts is miniscule compared to the statewide harvest (255,736 in 2005) and will have no bearing on the local deer population or statewide deer population of 1.3 million deer.

## Grouse Populations

**Ruffed and Sharp-tailed Grouse Population Assessments:** The grouse population assessment is the same as listed in Alternative B and described in 4.3.2.

**Ruffed and Sharp-tailed Grouse Harvest Estimates under Alternative C:** The Agassiz refuge has never been open to grouse hunting, although it was approved for a portion of the refuge in the 1979 Master Plan.

MnDNR bag limits for ruffed and sharp-tailed grouse have not changed since the mid 1970s. State hunting seasons for both species begin mid-September but end for sharp-tailed grouse on November 30 and ruffed grouse on January 1.

Both the refuge ruffed grouse and sharp-tailed grouse seasons will have about a 48 day delayed opening from the State season which begins mid-September. The refuge season will be opened at the beginning of the deer firearms season (first full week in November). Hunting pressure for these species during the proposed months of November (sharp-tailed grouse) and November and December (ruffed grouse) is much lower than September/October across the entire grouse range. There will be little to no hunting pressure on grouse during the 9 day deer firearms season. After the deer firearms season, access via refuge roads will be more restrictive. Hunting opportunities will be primarily walk-in, occurring at a time of year when it is colder and snow depth can be challenging. Currently, ruffed grouse habitat exists on less than 14% of the refuge and about 30% of the refuge is suitable for sharp-tailed grouse. The cyclical nature of ruffed grouse populations and the current low numbers of sharp-tailed grouse on the refuge will severely limit hunter interest and harvest. Based on this information, it is anticipated that hunter use and harvest will be low. Table 23 summarizes hunt parameters and estimated annual harvest. This is a high estimate for sharp-tails

given the current use on the refuge. The ruffed grouse estimates will always fluctuate with population cycles. When the cycles are high there will more hunters and greater harvest and the converse is true when populations are low.

**Table 23. Summary of Proposed Grouse\* Hunting Opportunities and Harvest**

Hunt Type	# of days	Area Open (acres)	Available habitat (acres)	Access	Estimated annual harvest
Ruffed	~60	57,800	8,500	Very restricted	15-25
Sharp-tailed	~28	57,800	18,000	Very restricted	0-5
<b>Total</b>	<b>~88</b>				<b>15-30</b>

\* Grouse seasons will NOT begin with State opening; they will begin with deer firearms season when most migratory birds have moved out of the area and prescribed burn season is usually over.

**Regional & Statewide Grouse Harvest Assessment:** MnDNR bag limits for ruffed and sharp-tailed grouse have not changed since the mid 1970s. State hunting seasons for both species begin mid-September but end for sharp-tailed grouse on November 30 and ruffed grouse on January 1.

*Ruffed Grouse:* The ruffed grouse is Minnesota’s most popular game bird. Annual harvest varies from about 150,000 to 1.4 million birds and averages 500,000+ birds. Information derived from spring drumming counts and hunter harvest statistics indicates that populations fluctuate cyclically at intervals of about 10 years.

*Sharp-tailed grouse:* Since 1990 annual harvest of sharp-tailed grouse by hunters has varied from 8,000 to 30,000 birds, and the number of hunters has varied from 6,000 to 13,000.

For long-term data on the annual number of hunters, estimated take per hunter, and statewide harvest from 1993 to 2005 see Tables 24, 25, and 26.

**Table 24. Estimated number of hunters (thousands) for ruffed (RG), and sharp-tailed grouse (STG), 1993-94 through 2005-06 in Minnesota.**

	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
<b>RG</b>	102	107	116	118	127	142	139	121	101	91	94	79	76
<b>STG</b>	8	7	8	7	8	8	8	10	8	6	7	6	5

**Table 25. Estimated take per hunter for respondents that reported that they hunted a particular species (RG and STG), 1992-93 through 2005-06.**

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
<b>RG</b>	4.4	2.8	3.5	3.9	4.5	3.2	6.7	4.9	5.1	3.3	2.8	3.8	2.5	2.9
<b>STG</b>	2.0	1.4	1.2	1.3	1.2	1.7	2.6	1.6	1.6	1.2	1.3	1.7	1.7	1.3

**Table 26. Statewide estimated harvest (thousands) for RG and STG,1994-95 through 2005-06**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
<b>RG</b>	371	457	533	654	946	685	619	332	249	351	194	224
<b>STG</b>	9	10	8	13	22	14	16	10	9	18	9	10

## **Cumulative Impacts Summary for Proposed Ruffed and Sharp-tailed Grouse Hunting Opportunities on Agassiz NWR**

Agassiz NWR is 61,500 acres in size. Ruffed grouse habitat is found only on about 14% of the refuge and sharp-tailed about 30%. The proposed new grouse hunting opportunities on the refuge will add about 88 days of hunting, of which the first 9 days coincide with the deer firearms season. Access will be primarily walk-in, and no ATVs are permitted on the refuge. These restrictions will severely limit interest. Hunter use will be low and annual harvest is not expected to exceed 30 birds. Hunters will most likely be from the local area, consequently, no increase in small game license purchases is expected. See Table 27 for cumulative impacts of hunt.

**Table 27. Cumulative Impacts of proposed grouse hunts on Agassiz Refuge (estimates) as compared to statewide harvest (2005 data).**

<b>Hunt Location &amp; grouse species</b>	<b>Harvest</b>	<b>Total</b>
<b>Agassiz NWR – Ruffed</b>	15-25	
– Sharp-tailed	0-5	30
<b>Statewide – Ruffed</b>	224,000	
– Sharp-tailed	10,000	234,000

MnDNR bag limits for both species have not changed since the mid 1970s. Refuge staff will consult with MnDNR each year regarding bag limits. An estimated harvest of 30 birds (ruffed and sharp-tailed grouse combined) on Agassiz Refuge are miniscule when compared to the statewide harvest and will not impact local, regional or statewide populations.

## **Waterfowl**

Under Alternative C there will be a 1 day (or 2 if the State changes the season) Youth Waterfowl hunt allowed on the Farmes Pool area of the refuge. This area borders the Elm Lake WMA where a youth hunt is permitted.

**Waterfowl & Goose Population Assessment on Agassiz NWR:** The waterfowl population assessment is the same as listed in Alternative B and described in 4.3.3.

### **Waterfowl & Goose Population Harvest Impact Assessment:**

The U.S. Fish and Wildlife Service annually prescribe frameworks, or outer limits, for dates and times when hunting may occur and the number of birds that may be taken and possessed. These frameworks are necessary to allow State selections of season and limits for recreation and sustenance; aid Federal, State, and tribal governments in the management of migratory game birds; and permit harvests at levels compatible with population status and habitat conditions. Because the Migratory Bird Treaty Act stipulates that all hunting seasons for migratory game birds are closed unless specifically opened by the Secretary of the Interior, the Service annually promulgates regulations (50 CFR Part 20) establishing the frameworks from which States may select season dates, bag limits, shooting hours, and other options for the each migratory bird hunting season. The frameworks are essentially permissive in that hunting of migratory birds would not be permitted without them. Thus, in effect, Federal annual regulations both allow and limit the hunting of 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.

The process for adopting migratory game bird hunting regulations, located in 50 CFR part 20, is constrained by three primary factors. Legal and administrative considerations dictate how long the rule making process will last. Most importantly, however, the biological cycle of migratory game birds controls the timing of data-gathering activities and thus the dates on which these results are available for consideration and deliberation. The process of adopting migratory game bird hunting regulations includes two separate regulations-development schedules, based on "early" and "late" hunting season regulations. Early hunting seasons pertain to all migratory game bird species in Alaska, Hawaii, Puerto Rico, and the Virgin Islands; migratory game birds other than waterfowl (e.g. dove, woodcock, etc.); and special early waterfowl seasons, such as teal or resident Canada geese. Early hunting seasons generally begin prior to October 1. Late hunting seasons generally start on or after October 1 and include most waterfowl season not already established. There are basically no differences in the processes for establishing either early or late hunting seasons. For each cycle, Service biologists and others gather, analyze, and interpret biological survey data and provide this information to all those involved in the process through a series of published status reports and presentations to Flyway Councils and other interested parties [As an example of how migratory bird data are collected and summarized to inform the regulations setting process, reference the documents attached below: "waterfowl status 2006.pdf," "Mississippi Flyway Databook 2005.pdf," and "Atlantic Flyway Databook 2005.pdf." The first attachment summarizes the status of various species' populations. The second two attachments summarize harvest by State in each of the relevant Flyways for the U.S. Fish and Wildlife Service's Southeast Region. Though not as detailed as that for waterfowl, relevant data are collected and summarized for migratory bird species such as dove, woodcock, etc. Bird monitoring data are available through the Service's Division of Migratory Bird Management Website (<http://www.fws.gov/migratorybirds/statsurv/mntrtbl.html>)].

Because the Service is required to take 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 frameworks for each species, we consider 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.

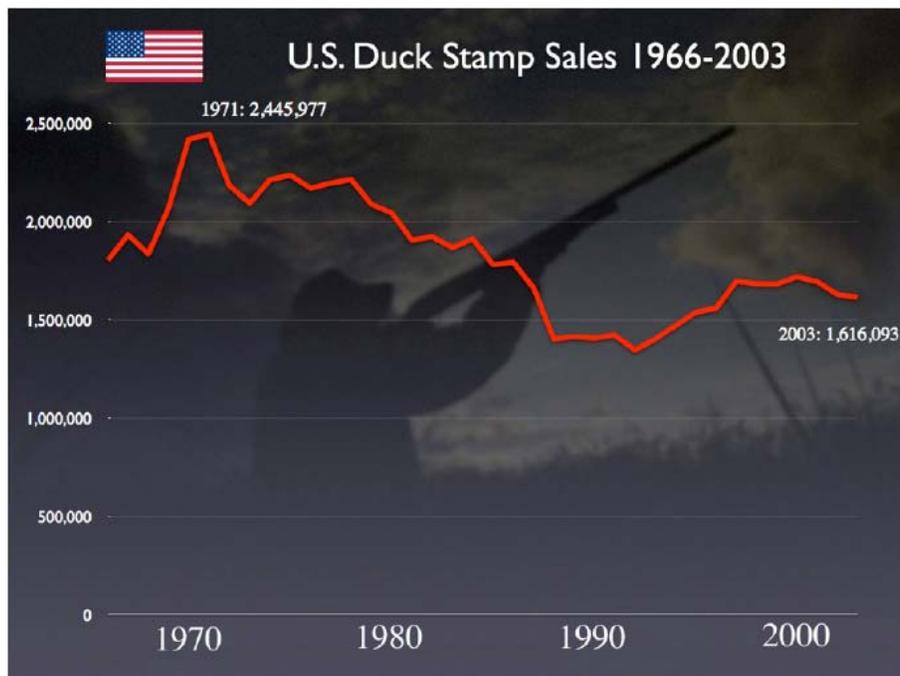
NEPA considerations by the Service for hunted migratory game bird species are addressed by the programmatic document, "Final Supplemental Environmental Impact Statement: Issuance of Annual

Regulations Permitting the Sport Hunting of Migratory Birds (FSES 88- 14),” filed with the Environmental Protection Agency on June 9, 1988. We published Notice of Availability in the Federal Register on June 16, 1988 (53 FR 22582), and our Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under a separate Environmental Assessment, “Duck Hunting Regulations for 2006-07,” and an August 24, 2006, Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53376), the Service announced its intent to develop a new Supplemental Environmental Impact Statement for the migratory bird hunting program. Public scoping meetings were held in the spring of 2006, as announced in a March 9, 2006, Federal Register notice (71 FR 12216). More information may be obtained from: Chief, Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Department of the Interior, MS MBSP-4107-ARLSQ, 1849 C Street, NWR, Washington, DC 20240

## Cumulative Impacts Summary of Youth Waterfowl Hunt

Waterfowl hunting has declined in both the United States and Canada. Hunter numbers in the U.S. have dropped 30% since the peak of the 1970’s. This is evident in the decline of duck stamp sales from the peak of 1971, see Figure 23. The slight increase in the late 1990’s and early 2000’s may be attributed to increased waterfowl populations due to wet conditions in the prairie pothole area and initiation of a campaign to encourage non-hunters to purchase duck stamps for habitat. In Canada, there has been a larger decline in waterfowl hunters. These declines are signs hunting pressure will be light for the one day Youth Duck Hunt.

Figure 23. Duck Stamp Sales 1966-2003.



Cumulative impacts of waterfowl harvest under a youth waterfowl hunt are as follows:

- **Agassiz NWR:** There has never been a waterfowl hunt on this refuge. The proposed youth hunt on average will probably attract 10 to 15 hunters with an estimated maximum number of ducks harvested at 20 to 40 and a few geese, <5, may also be harvested. Estimates are based on observations from a similar hunt on the adjoining Elm Lake WMA.

- **Minnesota and Mississippi Flyway Harvest for 2004 and 2005:** The total number of ducks harvested in Minnesota by adult hunters for 2004 and 2005 were 683,600 and 531,500, respectively. The total number harvested in the Mississippi Flyway were 5,505,500 (2004) and 5,270,000 (2005). See Table 28 for species composition of harvest in 2004 and 2005. See Table 29 for comparison to top ten states in total ducks harvested in 2005. The total number of geese harvested in Minnesota by adult hunters in 2005 was 207,500.
- **Ducks & Geese Harvested in the United States in 2005:** The total number of ducks harvest in the U.S by adult hunters in 2005 was 12,510,800. The total number of geese harvested was 3,660,700. See Table30 for more details.

Table 28 compares the waterfowl harvest on a refuge, state, flyway and United States level.

**Table 28. Comparison of proposed youth waterfowl harvest at Agassiz NWR to State, Flyway, and United States harvest in 2005.**

<b>Waterfowl Harvest Area</b>	<b>Ducks</b>	<b>Geese</b>
Agassiz NWR	40*	5*
Minnesota	531,500	207,500
Mississippi Flyway	5,270,000	1,275,300
United States	12,510,800	3,660,700

\*estimated future harvest based on data gathered by MnDNR on adjoining WMA.

The cumulative impacts of the proposed youth waterfowl hunt at Farnes Pool on Agassiz NWR are miniscule.

**Disturbance to waterfowl:** The 1 day youth waterfowl hunt will cause direct mortality to about 45 birds at most and some disturbance to waterfowl in the area. The hunt occurs in mid-September when mostly local waterfowl are on the refuge. This is a walk-in or non-motorized boat access area to one pool on the refuge (<7% of refuge). Disturbance will be for a two day period (pre-scouting may be allowed the day before the hunt), but light. The youth deer hunt will occur on a designated area on the east side of the refuge (25% of refuge). Disturbance may eventually be for a three day period during mid-October. Migratory waterfowl will be in the area and disturbance may occur along the edges of pools and in agricultural fields. Disturbance is expected to be light as hunter use will be light. The existing newly proposed deer archery/blackpowder and grouse hunts begin with the November deer firearms season and will have minimal impact to migrating waterfowl. If ice-up has occurred waterfowl have moved out of the area. If ice-up has not occurred some waterfowl may still be utilizing impoundments. Canada geese may still be using refuge agricultural fields. Disturbance to waterfowl and geese may occur by hunter vehicles driving on refuge roads next to impoundments or walking through or near agricultural fields. The disturbance to waterfowl by vehicles is commensurate to or has less effect than that by non hunting activities because generally there are far fewer birds in the area. The existing refuge agricultural fields are being phased out and converted to native vegetation over the next 15 years per approved guidance in the 2005 CCP. This conversion will reduce use by waterfowl and geese.

The proposed hunts will not conflict with the waterfowl population goals of the refuge as outlined in the 2005 CCP. Disturbance to waterfowl under Alternative C is minimal.

Table 29. Species composition of the Minnesota waterfowl harvest, 2004 and 2005. (from: Padding, P.I., Richkus, K.D, Moore, M.T., Martin, E.M., Williams, S.S., and Spriggs, H.L. Migratory Bird Hunting activity and harvest during the 2004 and 2005 hunting seasons: preliminary estimates. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Branch of Harvest Surveys, Laurel, Maryland. July 2006. 63 pp). **Note:** All hunter activity and harvest estimates are preliminary, pending final counts of the number of migratory bird hunters in each state and complete audits of all survey response data.

Species	Minnesota Harvest					Mississippi Flyway Harvest		
	2004	% of Harvest	2005	% of Harvest	% change in Harvest 04-05	2004	2005	% change in Harvest 04-05
Mallard	179,277	26.23	169,582	31.9	-5	2,199,931	2,049,383	-7
Domestic mallard	838	0.12	240	0.04	-71	5,015	4,539	-10
American black duck	279	0.04	719	0.13	+158	35,692	36,365	2
Black x mallard	558	0.08	0	0	-100	2,651	2,849	7
Gadwall	31,276	4.57	15,090	2.84	-52	654,488	635,321	-3
American wigeon	24,574	3.59	13,174	2.48	-46	149,793	121,240	-19
Green-winged teal	44,959	6.58	27,545	5.18	-39	498,019	513,850	3
Blue-winged /cinnamon teal	106,114	15.52	50,539	9.51	-52	365,488	314,079	-14
Northern shoveler	17,313	2.53	13,174	2.48	-24	158,905	195,542	23
Northern pintail	14,242	2.08	9,820	1.85	-31	90,542	107,276	18
Wood duck	127,616	18.67	98,204	18.48	-23	729,608	673,507	-8
Redhead	9,494	1.39	16,767	3.15	+77	35,334	62,051	76
Canvasback	4,747	0.69	8,623	1.62	+82	10,824	32,786	203
Greater scaup	3,072	0.45	1,437	0.27	-53	28,056	24,812	-12
Lesser scaup	12,008	1.76	12,934	2.43	+8	108,534	111,357	3
Ring-necked duck	75,118	10.99	75,689	14.24	+1	233,979	240,090	3
Goldeneye	9,494	1.39	7,186	1.35	-24	30,290	23,420	-23
Bufflehead	8,936	1.31	3,832	0.72	-57	59,789	42,024	-30
Ruddy duck	1,955	0.28	479	0.09	-775	5,227	4,235	-19
Scoters	838	0.12	719	0.13	-14	4,286	4,921	15
Hooded merganser	9,215	1.35	4,790	0.9	-48	47,469	30,454	-36
Other mergansers	1,117	0.16	958	0.18	-14	8,808	4,164	-53
Total Duck Harvest (retrieved kill)	683,600 ± 10%		531,500 ± 12%		-22	5,505,500 ± 5%	5,270,000 ± 5%	-4

Table 30. Top 10 states in number of **adult duck hunters**, 2005, and number of hunter-days and retrieved duck kill, in each (from: Padding, P.I., Richkus, K.D, Moore, M.T., Martin, E.M., Williams, S.S., and Spriggs, H.L. Migratory Bird Hunting activity and harvest during the 2004 and 2005 hunting seasons: preliminary estimates. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Branch of Harvest Surveys, Laurel,

Maryland. July 2006. 63 pp). **Note:** All hunter activity and harvest estimates are preliminary, pending final counts of the number of migratory bird hunters in each state, and complete audits of all survey response data.

<b>State</b>	<b>Number of active duck hunters</b>	<b>Duck hunter days afield</b>	<b>Total duck harvest</b>	<b>Seasonal duck harvest per hunter</b>
<b>Texas</b>	91,500 ± 18%	488,500 ± 25%	1,255,400 ± 23%	13.7 ± 29%
<b>Minnesota</b>	71,000 ± 8%	404,100 ± 11%	531,500 ± 12%	7.5 ± 15%
<b>Arkansas</b>	64,900 ± 9%	462,700 ± 13%	1,080,400 ± 14%	16.7 ± 17%
<b>Wisconsin</b>	56,100 ± 10%	393,900 ± 16%	375,100 ± 12%	6.7 ± 16%
<b>Louisiana</b>	48,400 ± 11%	333,000 ± 15%	877,800 ± 14%	18.2 ± 18%
<b>California</b>	47,000 ± 10%	486,700 ± 15%	1,327,200 ± 15%	28.3 ± 18%
<b>Michigan</b>	40,900 ± 10%	225,200 ± 11%	284,400 ± 12%	7.0 ± 16%
<b>North Dakota</b>	36,300 ± 5%	186,700 ± 7%	519,400 ± 8%	14.3 ± 9%
<b>Illinois</b>	31,600 ± 9%	260,900 ± 10%	380,400 ± 11%	12.0 ± 15%
<b>Missouri</b>	28,700 ± 13%	221,700 ± 20%	465,400 ± 28%	16.2 ± 31%
<b>Mississippi Flyway</b>		3,075,500 ± 5%	5,270,000 ± 5%	
<b>United States</b>		6,479,200 ± 3%	12,510,800 ± 4%	

Table 31. Top 10 states in number of **adult goose hunters**, 2005, and number of hunter-days and retrieved goose kill, in each (from: Padding, P.I., Richkus, K.D, Moore, M.T., Martin, E.M., Williams, S.S., and Spriggs, H.L. Migratory Bird Hunting activity and harvest during the 2004 and 2005 hunting seasons: preliminary estimates. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Branch of Harvest Surveys, Laurel, Maryland. July 2006. 63 pp). **Note:** All hunter activity and harvest estimates are preliminary, pending final counts of the number of migratory bird hunters in each state, and complete audits of all survey response data.

State	Number of active goose hunters	Goose hunter days afield	Total goose harvest	Seasonal goose harvest per hunter
<b>Texas</b>	58,800 ± 18%	183,500 ± 26%	457,300 ± 24%	7.8 ± 30%
<b>Minnesota</b>	58,600 ± 9%	366,300 ± 12%	207,500 ± 13%	3.5 ± 16%
<b>Wisconsin</b>	51,100 ± 9%	327,600 ± 15%	108,000 ± 17%	2.1 ± 19%
<b>Michigan</b>	38,000 ± 10%	186,600 ± 12%	141,800 ± 16%	3.7 ± 18%
<b>Pennsylvania</b>	37,000 ± 10%	189,800 ± 11%	189,300 ± 13%	5.1 ± 17%
<b>California</b>	32,300 ± 11%	248,300 ± 17%	146,900 ± 21%	4.5 ± 24%
<b>North Dakota</b>	26,500 ± 6%	132,900 ± 9%	153,300 ± 13%	5.8 ± 14%
<b>Illinois</b>	26,400 ± 10%	187,900 ± 13%	110,800 ± 21%	4.2 ± 23%
<b>Maryland</b>	58,800 ± 18%	143,900 ± 10%	177,500 ± 11%	6.9 ± 13%
<b>Arkansas</b>	25,600 ± 7%	108,800 ± 25%	135,300 ± 23%	5.6 ± 27%
<b>Mississippi Flyway</b>	24,000 ± 15%	1,928,500 ± 6%	1,275,300 ± 6%	
<b>United States <sup>a</sup></b>		4,143,100 ± 4%	3,660,700 ± 4%	

<sup>a</sup>. Goose hunter statistics do not include brant hunter statistics for coastal states with brant seasons: Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, Virginia, California, Oregon, Washington, and Alaska.

## Endangered Species

Federally listed Threatened Species that occur in Marshall County include the bald eagle, grey wolf and piping plover. Two federally listed species of animals occur at Agassiz NWR, the gray wolf and the Bald Eagle, both listed as threatened. Populations of both of these species are recovering regionally as well as nationally. The wolf was recently reclassified from endangered to threatened in adjoining states by the Service; however is still listed as endangered in WI and MI. The Bald Eagle may be “de-listed” and removed from the list of species protected by the federal Endangered Species Act of 1973.

Population assessments for these two species were described in detail in Alternative A under Section 4.2.4. There are a half-dozen bald eagle nests that have been used on Agassiz NWR and two wolf pack territories. Many bald eagles utilize the Refuge for feeding at different times of the year, especially during early spring and late fall when as many as 60 have been observed.

There has been no evidence of eagles being shot during the deer firearms season. Dead deer and gut piles provide a source of food, but may cause lead poisoning. The deer firearms season does pose a direct threat to wolves; however, it also provides a possible food source with wounded animals and gut piles at a time when pups and adults need to build fat reserves.

Nesting and migrating eagle use have increased on the refuge over the last several years due to a nationwide recovery of this species. Wolf numbers increased from 0 prior to 1980 to two established pack territories. Two packs have resided on Agassiz NWR and adjacent WMAs for over 13 years. The increase in both species has occurred with an annual deer firearms season in place on the refuge. The existing deer firearms hunt poses no threat to eagle nests or wolf dens.

**Bald Eagles:** Non-toxic shot must be used to hunt waterfowl and upland game on the refuge. Crippled/dead birds may provide an easy food source for eagles. This will be especially advantageous to young eagles. There will be more deer harvested (max 13) by the archery, muzzleloader (blackpowder) and youth deer hunts which will also provide more gut piles. Lead poisoning may occur through ingestion from deer carcasses. There may be minor, temporary disturbance to eagles with increased hunter activity.

**Gray Wolf:** The potential for illegal killing of wolves increases as there will be more hunting activity. The one day youth duck hunt occurs in mid-September when adult wolves may leave pups on rendezvous sites, leaving them more vulnerable. This is also a time adults bring the pups on hunting forays. There will more deer harvested (max 13) by the archery, muzzleloader (blackpowder), and youth hunts. Wolves may benefit slightly in the short term as more crippled/dead deer may be available as well as gut piles for food.

There are no significant negative cumulative effects to local or regional bald eagle or wolf populations. The 2005 CCP goals provide for adequate deer density goals for wolves and hunters. An Endangered Species Act Section 7 consultation was conducted as part of the 2005 CCP development and approved for the proposed action.

## Non-hunted Resident Wildlife & Migratory Birds

Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as rabbits, voles, moles, mice, and shrews; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory butterflies and moths, these species have very limited home ranges and hunting could not affect their populations regionally; thus, only local effects will be discussed.

Some species of butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor or have completely passed through central Minnesota by the

time the majority of the hunting seasons begin. Any hunter interaction would be commensurate with that of non-consumptive users.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects; however, the majority of these species have moved out of the area by the time the hunting seasons begin. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds including nuthatches, finches, chickadees, etc. Disturbance by hunting to non-hunted migratory birds should not have cumulative negative impacts for the following reasons. The deer and waterfowl seasons do not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced by hunting are not relevant for this reason. Most migratory shorebirds and waterbirds (rails, bitterns, grebes, etc.) have moved out of the area, especially if ice-up has occurred. Migratory birds of prey (eagles, rough legged hawks, etc.) are still in the area, but disturbance is expected to be minimal. Disturbance to the daily wintering activities, such as feeding and resting, of residential birds might occur.

Disturbance to non-hunted wildlife would increase slightly, but have short term, minimal impacts for the following reasons. Many small mammals are less active during November when most of the new hunting pressure will occur. Many of these species are also nocturnal and hide in dense cover. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blooded reptiles and amphibians also limits their activity during the deer season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. The refuge has estimated current hunter density during the regular deer firearms season at 1 hunter per 150 acres. This is based on an average of 400 visits per the entire season. Hunter density will be very light for the new proposed hunts.

#### **4.5.3.B. Cumulative Impact of the Proposed/Preferred Alternative on Refuge Programs, Facilities, and Cultural Resources.**

**OTHER REFUGE-WILDLIFE-DEPENDENT RECREATION:** Annually there are about 22,000 visitors to the refuge. Most of these visitations are from May – August for bird and wildlife observation. Visitor numbers drop sharply in early September, after many prairie, marsh and shorebird species have migrated, and parents and students have returned to school and university activities. There have been no reported public use conflicts develop between consumptive uses (hunting) and non-consumptive public uses such as wildlife observation, environmental education and interpretation.

There is a proposed new hiking trail in the Farmes Pool area. All hunts except the Youth Deer Hunt Area will occur in the trail area. Non-consumptive users will be warned of hunting activities at the trail head. There may be conflict with proposed winter activities such as cross country skiing during the later part of December. All hunting seasons are over by January 1. The Holiday season may minimize use by non-consumptive users and hunters alike. Details will be worked out in the proposed Visitor Service Plan.

**REFUGE FACILITIES:** The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water control structures, raceways, etc.”

Under Alternative C the proposed action alternative, those facilities most utilized by non-consumptive visitors are the refuge office, parking lots, trails, auto-tour route, two photo blinds, two observation decks, a tower, two outhouses, and interior roads (access is regulated to minimize disturbance). Facilities used by hunters are the same except for the tower. In addition, a handicap accessible deer stand is available.

New gates will need to be installed to regulate access for the youth deer hunt, deer archery/black powder and grouse hunts. New signs will need to be posted. Snow removal from refuge roads will not occur after the close of the deer firearms season. Some parking lots will have snow removal.

Routine maintenance or improvement of existing facilities cause minimal short term impacts to localized soils and may cause some wildlife disturbances and damage to vegetation.

**CULTURAL RESOURCES:** There are no direct or cumulative impacts to cultural resources. See section 4.1.1 for detailed discussion.

#### **4..5.3.C. Cumulative Impact of the Proposed/Preferred Alternative on Refuge Environment and Community.**

Refuge personnel expect no detectable adverse impacts of the Proposed/Preferred Alternative on the refuge environment which includes soils, vegetation, air quality, water quality, hydrology, and solitude. Some disturbance to surface soils and vegetation occur; however are minimal and temporary. Hunting benefits vegetation as it is used to keep deer populations in balance with the habitat's carrying capacity. The refuge also controls access to minimize habitat degradation.

The local community and the state of Minnesota, in general, strongly support outdoor activities such as deer hunting. The State has passed legislation ensuring the right of Minnesotan's to hunt.

#### **4.5.3.D. Other Past, Present, Proposed, and Reasonable Foreseeable Hunts & Anticipated Impacts.**

Moose hunting has been allowed on Agassiz NWR with a season occurring every other year. The season has been closed since 1996 due to the declining moose population on the refuge and in Northwest Minnesota. This decline, in large part, is attributed to warming temperatures. The last hunt occurred in 1994. Moose hunting will not be reopened until the population reaches refuge goals, which at this time seems unlikely to occur in the near future.

The deer firearms hunt has been a long standing tradition on Agassiz NWR. Hunter numbers and use days decreased dramatically in 1996 due to a severe winter which brought the refuge herd to the lowest numbers on record. Another severe winter followed in 1996-1997. Hunter numbers and use have increased slowly and are no where near peak use of the past. Hunting opportunities, higher deer populations and higher harvest limits are permitted in surrounding SMUs which may be drawing hunters away from Agassiz.

The newly proposed hunts a Youth Waterfowl Hunting Day, Youth Deer Hunt (2 days), Deer Muzzleloader Season, and deer archery and grouse hunting seasons (delayed openings) beginning with the deer firearms season are proposed in this alternative. Due to the short duration of the youth hunts in designated areas, the delayed openings and restricted access of the deer archery and grouse hunts, and restricted access for the deer blackpowder hunt hunter use and harvest is expected to be light.

The only additional foreseeable future hunt that might occur is a handicap accessible deer hunt. This would not occur until after 2010 when a feasibility study will be conducted if there is a need. Currently there is one accessible deer stand that has not been used in years. An accessible hunt could have a variety of scenarios. A few are listed below:

- Designated area within proposed seasons.
- Designated area prior to existing seasons.
- Mobile stands to be placed in designated locations.

The U.S. Fish & Wildlife Service is in the process of reducing Region 3's staff by 20% over the next 2 years. There are no refuge law enforcement staff left at Agassiz NWR and refuge Law Enforcement staff have been reduced within the region over the years. Very few programs in the Service will be proposed for expansion with a reduced staff to plan, implement and administer these new programs.

If public use levels expand in the unforeseen future, unanticipated conflicts between user groups may occur. Service experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) and limiting visitation are effective tool in eliminating conflicts between user groups.

#### **4.5.3. E. Anticipated Impacts if Individual Hunts are Allowed to Accumulate**

National Wildlife Refuges, including Agassiz NWR, conduct or will conduct hunting programs within the framework of State and Federal regulations. Additionally, refuges coordinate with the MN DNR annually to maintain regulations and programs that are consistent with the State management program.

Under Alternative C, Preferred and Proposed Alternative, deer hunting opportunities are expanded to include a Youth Deer Hunt (2 days, restricted area), a Youth Waterfowl Hunt (1 day, restricted area and access) Deer Muzzleloader Season (15 days, restricted access), and deer archery and grouse hunting seasons (delayed openings, restricted access). The Agassiz NWR proposed action is at least as restrictive as the State of Minnesota and in the case of deer archery and grouse hunts more restrictive on season lengths. In addition, only small designated portions of the refuge are open to youth hunts.

Impacts to hunted species populations are not significant. Impact to refuge staff managing a variety of hunts will be substantial if staff reductions occur. If there are no staff reductions impacts will be minimal. Law enforcement coverage will need to be coordinated with regional USFWS and MNDNR law enforcement staff.

The proposed hunts will not conflict with....

- 1 the migratory bird goals of the refuge since they occur after the birds leave;
- 2 fall prescribed burning management objectives as the burning season is usually over;
- 3 or pose a threat to ensuring an adequate prey base for the two active wolf packs, as deer density goals have been established to accommodate both wolves and hunters;
- 4 or other non-consumptive uses.

**Table 32: Summary of Impacts for Hunting Alternatives at Agassiz National Wildlife Refuge**

<b>Issues</b>	<b>ALTERNATIVE 1 (No Action)</b> Allows current deer firearms season to continue and a moose hunt if population recovers.	<b>ALTERNATIVE 2</b> Open Refuge to deer archery/blackpowder and grouse during & after deer firearms season. Open 14,800 acres on east side to bear (no bait), waterfowl, and upland game according to State seasons.	<b>ALTERNATIVE 3 (Preferred)</b> Open Refuge to deer archery/blackpowder and grouse during & after deer firearms season. Open 14,800 acres on east side to youth deer hunt and 4,200 acres in Farnes Pool to youth waterfowl hunt
<b>Wildlife-Dependent Recreation</b>			
<i>Deer hunting</i>	Deer hunting opportunities remain unchanged with a deer firearms season only	Archery & muzzleloader deer hunting will be permitted during & after deer/firearms season. A youth deer hunt will be permitted in a designated area on the east side.	Same as Alternative B
<i>Upland Game Hunting</i>	No upland game hunting, as at present	Opportunities to hunt upland game on the east side according to state seasons will be considered. Upland game include rabbits, hare, squirrels and grouse. Grouse hunting will be permitted during & after deer/firearms season on entire refuge.	grouse hunting will be permitted during & after deer/firearms season
<i>Waterfowl hunting</i>	No waterfowl hunting, as at present	Waterfowl hunting on the east side will be considered according to state seasons.	A youth waterfowl hunt will be permitted south of Co. Rd. 7 on Farnes Pool in conjunction with the state youth waterfowl hunt.
<i>Endangered Species</i>	No impacts to bald eagles. Potential of illegal killing of wolves. No measurable impact to local, state, or national populations	Same as Alternative A.	Same as Alternative A.
<i>Migratory Bird Disturbance.</i>	No measurable impact.	No measurable impact to non-hunted species. Direct impact to small number of harvested waterfowl. No measurable impact to local, state, or national waterfowl populations.	Same as Alternative B.
<i>Residential Species</i>	No Impact to non-hunted species. Direct impact to deer harvested. No significant impact to local and statewide deer population.	No Impact to non-hunted species. Direct impact to deer, bear, rabbits, hare, squirrel, and grouse harvested. No significant impact to local and statewide deer populations; no measurable impact to other species hunted.	No Impact to non-hunted species. Direct impact to deer and grouse harvested. No significant impact to local and statewide deer populations and no measurable impact to grouse populations.

<i>Refuge Environment- Prescribed burning activities</i>	No impact.	25% of the refuge will be closed to late summer and fall burning. Habitat management will be impacted.	Same as Alternative A
<i>Other wildlife dependant recreation</i>	No Impacts.	Conflict with birding public in September. May have conflicts with proposed winter use activities such as cross country skiing, snow shoeing. Conflict with one proposed hiking trail.	May have conflicts with proposed winter use activities such as cross country skiing, snow shoeing. Conflict with one proposed hiking trail.
<i>Refuge facilities</i>	No Impacts.	Install new gates and signs.	Same as Alternative B.
<i>Cultural Resources</i>	No Impacts	Same as Alternative A	Same as Alternative A
<i>Accessible Hunting</i>	No change. One accessible deer stand available.	Same as Alternative A	Expanding accessible hunting opportunities may occur pending a feasibility study in 2010.
<i>Community</i>	No change.	Increased hunting opportunities. No economic impacts.	Same as Alternative B

# Chapter 5: List of Preparers for CCP

- Leon Kolankiewicz, Biologist/Environmental Planner/Consultant, Mangi Environmental Group
- Gary Huschle, Wildlife Biologist, Agassiz National Wildlife Refuge
- Margaret Anderson, Refuge Manager, Agassiz National Wildlife Refuge
- Socheata Lor, Wildlife Biologist, Agassiz National Wildlife Refuge
- Gary Muehlenhardt, Wildlife Biologist/Refuge Planner, Region 3, USFWS
- Gary Tischer, Refuge Operations Specialist, Agassiz National Wildlife Refuge
- John Dobrovolny, Regional Historian, Region 3, USFWS
- Jane Hodgins, Technical Writer/Editor, Region 3

## LIST OF PREPARERS FOR HUNTING ALTERNATIVES

**Submitted by:**

\_\_\_\_\_  
Margaret M. Anderson  
Project Leader

Date: \_\_\_\_\_

**Concur:**

\_\_\_\_\_  
Jim Leach  
Refuge Supervisor (Area 3)

Date: \_\_\_\_\_

\_\_\_\_\_  
Nita M. Fuller  
Regional Chief  
National Wildlife Refuge System

Date: \_\_\_\_\_

**Approve:**

\_\_\_\_\_  
Robyn Thorson  
Regional 3 Director, USFWS

Date: \_\_\_\_\_

# Chapter 6: Consultation & Coordination With Stakeholders

The Agassiz NWR CCP and EA were written with the participation of USFWS and Refuge staff, Refuge users, an environmental consultant, and the local community. The CCP planning process began in the fall of 2002 with the formation of a Refuge planning team. In early December 2002, the planning team hosted an open house in Thief River Falls, with participation by members of the public, local officials, non-profit groups, and state agencies. In January 2003, an all-day focus group meeting/workshop was held at Northland Community and Technical College in Thief River Falls. The entire group addressed each issue on a list of concerns, issues and opportunities generated by earlier scoping. The discussions, suggestions, comments and analyses from these meetings and groups provided valuable information for the authors of this plan.

Representatives of the Minnesota Department of Natural Resources and the Red Lake Band of the Chippewa participated with Refuge staff and the planning team in a three-day biological review and goals/objectives/alternatives workshop. The workshop drafted a vision and goals for Agassiz NWR , in addition to crafting three management alternatives and various objectives for the Refuge.

In addition, for the specific purposes of this Hunting EA...

1. Written consultations were provided (attached) with concurrence signatures as follows:

**Youth Waterfowl Hunt** – Review and concurrence for migratory bird species by:

- USFWS Region 3 Migratory Bird Office
- USFWS Region 3 Flyway Biologist
- MNDNR Biologist

**Deer Archery, Blackpowder, and Youth Hunts, and Grouse Hunts** - Review and concurrence for residential species by:

- MNDNR Biologist

2. This EA was made available to the public for a 30 day review at the Thief River Falls Public Library and Refuge Headquarters on February 26, 2007 through March 30, 2007.

## Chapter 7: References & Literature Cited

**Agassiz National Wildlife Refuge Comprehensive Conservation Plan.** 2005. USFWS. 181p.

**Waterfowl Population Status, 2006.** U.S. Fish & Wildlife Service. July 2006. 61p.

**A Report on the Development of a Waterfowl Hunting Advocacy and Waterfowler recruitment Program for North America.** Delta Waterfowl. December 2006. 26 p.

Wilkins, K.A., M. C. M.D. Otto. **Trends in Duck Breeding Population, 1955-2006.** USFWS, Division of Migratory Bird Management. Administrative Report, July 2006.

**Status of Wildlife Populations Fall 2006.** MNDNR, Division of Wildlife, Wetland Wildlife and Populations Research.

**2005 Minnesota Deer Harvest Report.** MNDNR, Division of Fish and Wildlife.

**Zone Hunting Maps and Statistics (2005).** MNDNR website > Outdoor activities > Hunting > Deer > Hunting maps and statistics.

**A Cultural Resources Management Plan for Agassiz National Wildlife Refuge, Marshall County, MN.** Sept 2002. The 106 Group Ltd.

*Personal Communications* with Doug Franke, Thief River Falls Area Wildlife Manager, MN DNR. January 31, 2007.

## Appendix Response to Public Comments

The Service solicited public comment for the February 2007 Environmental Assessment for a Proposed Hunting Plan for Agassiz National Wildlife Refuge (NWR). The 30-day review period began February 26, 2007 and ended on March 30, 2007. Copies of the document and the 2005 Agassiz National Wildlife Refuge Comprehensive Conservation Plan (CCP) were available in the Thief River Falls library and at Refuge Headquarters. News releases announcing its availability for comment were sent to 28 media outlets, including newspapers, TV, and radio stations throughout northwest Minnesota and Grand Fork and Fargo in North Dakota.

Five written comments were received and one verbal comment.

Supportive comments: Four comments were in favor of the Proposed Action to implement the 2007 Hunt Plan which would open 4,220 acres of the refuge to a one or two day youth waterfowl hunt; 14,800 acres to a two day youth deer hunt; the entire refuge to a muzzleloader deer hunt with restricted access; and the entire refuge to grouse hunt hunting with restricted access and a shortened season. Three of these comments were from individuals and one from the Minnesota Deer Hunter's Association - Thief River Falls Chapter.

Non-supportive comments: One comment from an individual was against opening the refuge to more hunting opportunities. The other comment was, by the Humane Society of the United States (HSUS). There were no comments by HSUS that were specific to the proposed hunting plan at Agassiz NWR, however, some of the comments which may apply to Agassiz NWR are summarized and responded to below.

The HSUS

- ...“objects to the inadequate notice and amount of time for commenting” on the document. The Service solicited comments during the 30-day review period from February 26 through March 30, 2007. Announcements of the public review period were sent to 28 media outlets in northwest Minnesota and North Dakota. Also, the Agassiz CCP process was completed in July of 2005. Prior to the completion notices were printed in the Federal Register as follows:

Notice of Intent to Prepare a CCP	February 20, 2003
Notice of Availability of Draft CCP	March 9, 2005
Notice of Availability of Final CCP	August 26, 2005

The Agassiz CCP outlined the hunting alternatives listed in this Environmental Assessment. Public comments were noted in Appendix J of the CCP and responses to those comments are in Appendix K of the CCP. Comments from those appendices specific to hunting and recreation on the refuge are attached.

- ...states that the Service must ensure the availability of sufficient funds before approving hunting on the refuge. This comment refers to the Refuge Recreation Act. Sufficient funds are available to implement the 2007 Hunt Plan for Agassiz NWR. The youth hunts are supported by local sportsmen's organizations. The muzzleloader –deer and grouse hunters will have access primarily as walk in; interior roads will not be plowed; gates are already in place to regulate access.
- ...states that the Service has compromised the biological integrity of refuges by allowing hunting and that the Service does not consider impacts of hunters on non-consumptive users. The HSUS also claims that hunting and the number of hunters is decreasing and the Service has not capitalized on potential economic gain that would come from non-consumptive users. The Service notes these comments.
- ...states that woodcock, American black ducks, pintail, greater and lesser scaup, and king rails should not be hunted because their populations are declining. The Service relies on the Migratory Bird Sport Hunting Frameworks to set hunting regulations of migratory birds annually. The Frameworks are based on the best biological information available. Woodcock are not open to hunting at Agassiz NWR and there are no king rails. Black ducks are rarely seen as the refuge is on the fringe of their

range. Scaup do not nest on the refuge and their migration through the refuge has not begun at the time of the Youth Waterfowl Hunt.

- ...states that the environmental assessment “does not adequately address the cumulative impacts of hunting across the entire Refuge system nor even, for that matter, the region of the state in which the refuge resides”. The comment is noted for the entire refuge system. The Service disagrees that cumulative impacts were not adequately addressed at the state level. The refuge fits its hunting program within the State of Minnesota’s regulations which take into consideration the cumulative impacts of hunting across the state.
- ...states that the environmental assessment does not consider temporal or monetary investments necessary to isolate consumptive and non-consumptive users on the refuge. The muzzleloader/deer and grouse hunts occur in November and December. This is a time when most migratory birds have left the refuge. The Auto-tour route is closed at the end of October or during the first major snow event. Regulated public access (must obtain a key from the office) to the interior of the refuge is restricted in September (based on banding site locations) and shut down completely in October. Visitation by non-hunters during the proposed hunts are very few at this time of year and are well regulated when they occur. Proposed winter activities, such as cross country skiing, will not be considered until the end of December.

**Following are excerpts from the 2005 Agassiz NWR CCP summarizing public involvement, comments and responses.**

**NOTE: Appendix J and K are from the 2005 Agassiz NWR Comprehensive Conservation Plan. Only comments specific to hunting and public use are included. For a complete list of comments and responses reference the 2005 Agassiz NWR CCP pp 163-181.**

## **[CCP]Appendix J: Public Scoping Process**

### **Appendix J: Public Scoping Process**

#### **Open House**

On the evening of December 5, 2002, the USFWS and Agassiz staff welcomed the public to an open house and CCP/EA scoping meeting at the Heritage Center in Thief River Falls. About 30 individuals attended the meeting, most of whom were from Marshall County and all of whom were Minnesota residents. Attendees listened to an overview of the CCP and NEPA processes and then were given the chance to address the gathering. Rather than provide information, cite concerns, or list issues they would like to be addressed in the CCP and NEPA documents, most of the speakers took the opportunity to acquaint fellow stakeholders and the USFWS with their own ideas as to how Agassiz should be managed in the future. The following comments were made in the order shown:

- \* Refuge should allow bow-hunting.
- \* Refuge allows for adequate public use – it's open to a sufficient extent to see and appreciate resources.
- \* Refuge should open more areas to public visitation.
- \* Refuge should manage wildlife using biology/science instead of politics, to the maximum extent feasible.
- \* Refuge should allow for cross-country skiing trails.
- \* Refuge should allow fishing.

Meeting attendees were also provided with a comment form or questionnaire, and encouraged to fill it out and submit it that evening or mail at a later date. The comment form contained the following questions:

*What do you think are the most important issues facing the refuge?  
How do you think these issues can be resolved?*

*Should refuge habitats be managed any differently than they are today?  
Are the types of use and visitation permitted and encouraged by the refuge appropriate?  
Any other comments you would like to make?*

Those interested in making comments had until January 18, 2003 to submit this form. Any member of the public who wished to comment in writing also had until that date to send a letter. Comments could be sent by U.S. mail, e-mail, or via the Agassiz website on the Internet. Approximately 40 comment forms and other written comments were submitted to the refuge during the scoping process.

Comments, concerns, and suggestions received from the public and stakeholders during scoping included the following (the number in parentheses is the number of comments making essentially the same point):

### **What do you think are the most important issues facing the refuge?**

- \* Public outreach resources
- \* Resource utilization
- \* Refuge expansion
- \* Public use/involvement
- \* Loss of moose population (2)
- \* Management of deer, moose, and other brushland wildlife populations
- \* Public access is too restrictive
- \* Determine if the refuge is managing people or resources
- \* Public use and proper management
- \* Keeping “wildlife first” on a national wildlife refuge
- \* Funding
- \* Management of healthy wolf/moose populations
- \* Showing the public that the USFWS is not anti-sportsman
- \* Opening up part of refuge for duck hunting
- \* Conflicts between different uses – managing people while maintaining commitment to wildlife and other resources
- \* Allowing knowledgeable, experienced staff to manage refuge without interference

### **How do you think these issues can be resolved?**

- \* Increase research funding and funding programs for public outreach
- \* Work with local interests, perhaps through a board or cooperative
- \* Assist local residents to initiate wildlife watching tours that could be a source of local income while putting residents in touch with visitors
- \* Open some mowed roads to foot traffic and cross-country skiing in winter
- \* Close refuge to the public
- \* Allow no hunting or harvesting of refuge resources

- \* Open more of refuge to hunting, especially south of Rte. 7 to duck hunting
- \* Obtain space or building where public can view videotape of what USFWS does
- \* Open refuge south of County Rte. 7, Northwest Pool and Pool 8.
- \* You can't please everybody (2)

**Are the types of use and visitation permitted and encouraged by the refuge appropriate?**

- \* Yes (13)
- \* There is a strong pressure to expand uses, but remember that it is a "wildlife" refuge
- \* Expand all kinds of appropriate public use; conduct economic study laying out benefits of refuge
- \* Uses are entirely appropriate but public waterfowl hunting opportunities can be expanded (2)
- \* Logging, bow and arrow hunting, waterfowl hunting, and cross-country skiing should all be permitted
- \* Gates on roads should be opened to allow public to view and enjoy more wildlife
- \* There is interest in visitation to the wilderness area
- \* Consider allowing small game/upland gamebird hunting
- \* Incorporate more local history (e.g. homesteading, Civilian Conservation Corps, University of Minnesota Experiment Station) into visitation program, such as with a video Provide for a true wilderness camping experience via canoe
- \* The opportunity for wildlife and natural resource-related research on the refuge is important and should continue, as should birding, deer hunting, and moose observation opportunities
- \* It is pleasing that refuge is managed for non-game as well as game species
- \* Major portion of refuge is inaccessible; thus, there is greater traffic on portion that is open; experience of viewing birds from car is diminished by other passing cars
- \* Limited hours of visitor center on weekends restrict opportunity for locals to ever get inside
- \* Existing facilities and activities like tower, visitor center, viewing ducks and public involvement are very good but bicycling, cross-country skiing, and snowshoeing areas should be promoted (2)
- \* A true refuge would be closed to the public, and some places, even to refuge personnel; public could use nearby state parks that are now underused and in danger of being closed Motorized off-road vehicles should not have increased access
- \* Given declining numbers of deer hunters, new concepts for future herd management may be required
- \* Spend less money on research and more on refuge appearance
- \* Refuge is not a park and public use of refuge should be compatible with wildlife
- \* Keep visitor restrictions in place; public has adequate access to all areas
- \* Some refuges are open more and others are almost in a lockdown status
- \* Need to open gates to allow motor vehicles access to more of refuge; one road is not enough
- \* Native flowers and grasses would attract more people; wildflower/ native plants landscaping around headquarters is good demonstration to public (2)

### **Any other comments you would like to make?**

- \* Some refuges are open more and others are almost in a lockdown status
- \* Less water equals earlier ice equals thicker ice equals safer ice equals more deer hunting area
- \* How much longer will the refuge allow hunting?
- \* Agassiz is unique and needs to be preserved and managed; due to its remote location, it will never have a lot of visitors compared to other refuges
- \* Are there any volunteer programs available? Perhaps visitor center could have more weekend programs in the summer thereby allowing for more access by locals
- \* Would like to see better cooperation between USFWS and local government authorities
- \* In conversations with other people, most would like to see more foot access to more areas, i.e. walking trails and cross-country skiing
- \* Allow use of electric trolling motors for duck hunting
- \* For sake of public safety, the policy of checking in and off the refuge should be continued
- \* Another motorized trail should be established to Elm Lake or to the west
- \* Weed control around headquarters would make it more attractive
- \* The 12-sq. mile block of habitat including Eckvoll and Elm Lake WMA is extremely diverse and valuable, providing benefits to the area, particularly flood control, wildlife viewing, waterfowl production and overall wildlife diversity
- \* More area needs to be used for the sportsman
- \* Agassiz is a wonderful paradise for wildlife and should continue being managed for maximum wildlife use
- \* Allow a limited amount of hunting for ducks and geese; also bow hunting and black powder hunting for deer; allow county and township officials on CCP process to be on the committee
- \* Keep up the good work (2) \* Environmental education is important for people to support and understand what the refuge does; inviting school and community groups to the refuge for tours is a good way to provide this
- \* Stay with primary goal of wildlife enhancement; all other goals are secondary
- \* One or two pools should be stocked with fish to benefit neighbors who would like to fish refuge
- \* Image would be improved if refuge told public all the things it is doing, like helping save certain species; it would also be good to have a native flower garden open to the public to encourage them to plant wildflowers; this year I planted 50 kinds of wildflowers and have many kinds of butterflies and semi-rare birds;
- \* I think you are doing a great job
- \* Refuge staff should be active in environmental issues surrounding the refuge such as flood management issues
- \* It would be useful to have a table and a portable toilet at each of the kiosks; many visitors stop for leaflets along the road; perhaps a notebook for sightings should be placed there to record birds seen when the refuge office is closed

- \* The Red Lake Department of Natural Resources has had an excellent working relationship with Agassiz Refuge and looks forward to continued to continued cooperative projects; refuge personnel have always gone out of their way to involve the Red Lake DNR in state-of-the-art education and research efforts, and their outreach efforts have contribute to the growth and development of Red Lake's Wildlife Program; Red Lake DNR is confident the refuge is in good hands
- \* Keep up the good work!

**Other General Written Comments Received During Scoping:**

- \* There needs to be a way for more access to the refuge.
- \* There should be an outdoor toilet available when the visitor center is locked. (Note: A portable toilet has been available on-site for several years.)
- \* Please ban hunting and trapping on your National Wildlife Refuge
- \* The Thief River Falls Chamber of Commerce & Visitor's Bureau is supportive of the various amenities at the refuge, especially additional interpretive programming for visitors to the community; the refuge is a primary attraction for visitors to the Thief River Falls area.

# [CCP] Appendix K: Response to Comments

## Appendix K: Response to Comments

The following is a summary of the comments received on the Draft CCP and how the issues are addressed in the CCP.

**Comment 1:** Two organizations wrote opposing the use of “thrillcraft” or personal watercraft, snowmobiles, all-terrain vehicles and two-stroke outboard motors on national wildlife refuges. One organization indicated that off-highway vehicle use needs to be addressed in the CCP to avoid possible future misunderstandings and controversies.

**Response:** We added the following statement to Chapter 4 in the Public Education and Recreation section: “The use of off-road vehicles such as snowmobiles, ATVs, motorized boats, etc. by the public for recreational purposes has never been permitted on Agassiz Refuge’s lands and waters. The CCP would maintain this policy over the next 15 years.”

**Comment 5:** One organization opposes the inclusion of hunting and trapping in each of the management alternatives presented in the CCP/EA.

**Response:** Hunting is one of the six wildlife-dependent public uses of national wildlife refuges specifically encouraged by the National Wildlife Refuge System Management Act of 1997 (the “Organic Act” of the Refuge System). Whenever a particular type of hunting is compatible with the Refuge’s purposes, goals and objectives, and can be conducted in a sustainable manner, it may be permitted. Wildlife populations are monitored, and where, as in the case of moose at present, the population is below the population objective, hunting is suspended or reduced until the population recovers.

Limited trapping is conducted at Agassiz of furbearers that damage infrastructure, like muskrat and beavers, and other mammalian predators and carnivores. The trapping by several permittees is on a sustainable, relatively small scale. Trapping data indicate that there is no adverse direct effect on the long-term populations of target species or indirect effect on related prey species. As with hunting, trapping is suspended when the populations of target species appear to be low; for example, no trapping of river otters was permitted in 1993 and 1994 because of low numbers and trapping of muskrats was closed in 2004/2005 due to low numbers. Low numbers of muskrats were due to a combination of drawdown and flooding events during the peak of litter production and not as a result of trapping.

**Comment 6:** One organization asserts that the Draft CCP for Agassiz does not meet the requirements of the National Wildlife Refuge System Improvement Act of 1997 because insufficient investigation of biological integrity, diversity and environmental health were undertaken prior to plan preparation. They state that rigorous biological analyses need to be conducted of wildlife populations to ensure that there is a surplus, before making any compatibility determinations about the killing of wildlife.

**Response:** The Draft CCP listed a number of wildlife surveys and censuses that are conducted at Agassiz, such as of moose, deer, waterfowl, and scent stations which in sum provide an adequate basis for making informed decisions on the compatibility of hunting and trapping. Beginning in 2004 an annual spotlight count of predators was initiated on a 22 mile route to alleviate any deficiencies in predator population data. In addition, the year-to-year trapping records themselves, and long-term trends in these numbers, furnish valuable information that can be used in opening or closing seasons. Recognizing that it does not have limitless

budgetary and personnel resources to conduct ideal surveys that would yield perfect information on wildlife population sizes, the Refuge and Service use adaptive resource management, several features of which are monitoring, feedback, flexibility, and making adjustments in midcourse whenever the data point in that direction.

**Comment 7:** One commenter favors Alternative C (the Service's Preferred Alternative and basis for the proposed plan) because of the additional hunting opportunities it would furnish.

**Response:** Comment acknowledged. The commenter is correct that this alternative would indeed expand hunting opportunities at Agassiz.

**Comment 9:** One commenter opposes opening the Refuge to waterfowl hunting because waterfowl need sanctuary in a region with many areas open to hunting and because non-hunters deserve a spot where they can see waterfowl unmolested by hunters.

**Response:** The proposed opening for a youth waterfowl hunt would be at Farmes Pool on the southern edge of the Refuge south of Rte. 7. This is limited to one weekend and adjoins a State Area which is open to waterfowl hunting. Opening this area would reduce crippling losses and spread hunters out on an area easily accessible by youth. The Service supports this type of wildlife-dependent activity. The great majority of the Refuge would remain closed to waterfowl hunting and would therefore continue to constitute a sanctuary for ducks and geese and those humans who appreciate observing and photographing them.

**Comment 10:** One organization supports implementation of the Preferred Alternative (C) because it integrates effective wildlife and habitat management with expanded public use opportunities.

**Response:** Comment acknowledged. The Service appreciates this statement of support from a partnering organization.

**Comment 11:** One national organization supports the Service's Preferred Alternative and commends the ambitious and ecologically sound management objectives outlined in the CCP.

**Response:** Comment acknowledged. The Service appreciates this endorsement of its proposed plan.

**Comment 18:** The DNR supports the continued use of firearms deer hunting on the Refuge during the state season as well as the proposed archery deer hunting season. However, The DNR contends that as proposed, (walk-in hunts only, during and following the firearms season), these hunts would elicit only limited interest and participation by prospective hunters. The DNR thus encourages the consideration of additional archery hunting opportunities on the Refuge prior to the firearms season and suggests that disturbance to migratory waterfowl could be minimized by limiting the area open to archery deer hunting prior to freeze-up.

**Response:** The DNR may be correct in its assessment that the deer archery season as proposed would elicit only limited interest and participation by prospective hunters. However, an early archery season would be a safety concern placing hunters in the field during the Refuge's fall burning season. Fall burning is an important habitat management tool in the transition zone and on the refuge. Recent studies indicate that a more frequent cycle of burning than is currently practiced is needed to effectively control shrublands.

Annually, Agassiz NWR plans to burn between 10,000 to 15,000 acres during spring and fall. Burn units are large with several encompassing 3,000 to 5,000 acres. Adaptive management indicates that fall burning is an important habitat management tool occurring primarily during September and October. Recently during two seasons, fall burning conditions were perfect throughout November both during the deer firearms hunt and afterward. Prescribed burns were not conducted during the deer firearms season, but they were carried out later. However, since these conditions were atypical, refuge staff focused on providing additional hunting opportunities during and after the deer firearms season. It is important to note that local DNR land managers are unable to conduct necessary fall burning due to hunter safety concerns and staff commitment to managing hunts.

Limited access, primarily walk-in access after the deer firearms season may limit interest. During the deer firearms season, archery hunters would have access to the same system of interior roads (20 miles) and parking lots (7) that are available to the firearms hunters. After the firearms hunt there are several parking lots (3), and associated roads (4 miles) within the interior of the refuge that could be left open until snow inhibits safe travel. Also, we plan to open the North Boundary Road (5 miles) after the deer firearms season. In the past, this road has been closed during all state hunting seasons. The details will be worked out in the Step-down Hunting Plan. It should be noted that limited access and OHV prohibitions on the refuge during the deer firearms season attracts hunters that are looking for this kind of experience, this would also be true for a segment of the archery deer hunter population.

**Comment 19:** The DNR states that the grouse hunt as proposed (walk-in hunts only, during and following the firearms deer season), would also draw limited interest and participation by prospective hunters. The DNR thus encourages consideration of opening portions of the Refuge to grouse hunting at other times as well. Disturbance to migratory waterfowl could be minimized by limiting the area open to grouse hunting to unutilized areas prior to freeze-up. Moreover, hunting should be authorized for Sharp-tailed Grouse as well as Ruffed Grouse, since this would have very little anticipated impact to Sharp-tail numbers on the Refuge.

**Response:** The response to Comment 18 would apply here. The refuge agrees to Sharp-tailed Grouse hunting at the same time as Ruffed Grouse hunting.

**Comment 20:** The DNR thinks the proposed youth waterfowl hunt at Farmes Pool is a logical and reasonable addition to the existing youth hunt on the state side of the pool (in Elm Lake WMA).

**Response:** Comment acknowledged.

**Comment 21:** The DNR states that an earlier draft of the plan included a youth firearms deer hunt and encourages the Refuge to consider offering youth hunting opportunities.

**Response:** Objective 3.1 of the Draft CCP, second strategy states: "...Contact and work with Minnesota DNR, schools, ...to explore possible youth hunt for deer on the refuge". The refuge agrees with conducting a special youth deer hunt in conjunction with adjacent State lands under the current parameters of the hunt (one weekend in October) and we have changed the wording of the strategy. The area that will be open to the youth hunt on the refuge will need to be identified in the Step-down Hunting Plan. It will not include the entire area opened during the deer firearms season. If the State decides to extend the season for the youth deer hunt, the refuge will not participate beyond one weekend, as this could affect fall burning activities.