

# **ENVIRONMENTAL ASSESSMENT to the WILDLAND**

## **FIRE MANAGEMENT PLAN for**

### **HAMDEN SLOUGH**

#### **NATIONAL WILDLIFE REFUGE**



January, 2008

**Selection of Alternative  
And  
Finding of No Significant Impact (FONSI)  
to the  
Hamden Slough NWR Fire Management Plan and Environmental Assessment**

An Environmental assessment (EA) has been prepared to identify the possible fire management options and alternatives along with the corresponding environmental consequences of such alternatives to the Hamden Slough National Wildlife Refuge. This EA was written following the guidelines as set forth in the National Environmental Policy Act of 1969 (NEPA). This EA addressed two action alternatives along with evaluating the consequences of the no-action alternative.

**Alternative Selection:** The preferred alternative selected was alternative A which includes important and critical habitat restoration of the northern tallgrass prairie ecosystem. This habitat management and restoration is dependent upon the use of prescribed fire to successfully restore these sites.

**Justification:** The fire management program to be implemented on Hamden Slough NWR will successfully preserve and restore prairie wetland and grassland habitats for the myriad of fish and wildlife species dependent upon fire adapted ecosystems.

**Finding of No Significant Impact:** Based upon an evaluation of the information contained within this EA and the Fire Management Plan, I have determined that implementing the preferred alternative A is not a major Federal action that would alter and negatively impact the quality of the human environment within the context of Section 102(2)c of the National Environmental Policy Act of 1969. An Environmental Impact Statement will not be necessary to prepare. This decision is based upon the following facts:

- 1) Implementation of the fire program will restore and maintain critical northern tallgrass prairie habitat and associated wetland and grassland ecosystems originally found on the prairie landscape.
- 2) Minimal impacts will occur to soil and water resources. These resources will be enhanced through restoration of natural habitats and nutrient movement and cycling.
- 3) Cultural resource sites discovered will be protected from disturbance.
- 4) The Refuge contains no federally-listed threatened or endangered species. As determined by the Intra-Service Section 7 Biological Evaluations, fire activities will have no effect on these species.

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Regional Director, FWS, Region 3

Date:



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## **Environmental Assessment for Hamden Slough NWR Fire Management Plan**

### **Abstract**

The U.S. Fish and Wildlife Service is proposing to implement a Fire Management Plan (FMP) for Hamden Slough National Wildlife Refuge (NWR) located in northwest Minnesota. This plan will specify a fire management direction for Hamden Slough NWR, as described in detail through a set of goals, objectives, and strategies. This Environmental Assessment (EA) considers the biological, environmental, and socio-economic effects that implementing the FMP (the preferred alternative) and other management alternatives will have on the most significant issues and concerns identified during the planning process.

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# Chapter 1

## Purpose and Need for the Proposed Action

### Purpose:

The purpose of the Environmental Assessment is to consider various alternatives for managing fire at Hamden Slough NWR. This management direction is described in detail through a set of goals, objectives, and strategies in the Fire Management Plan (FMP). The action is needed to address current management issues and to establish what action will be taken in regard to future use of fire as a management tool and fire suppression efforts.

This Environmental Assessment (EA) was prepared using the guidelines of the National Environmental Policy Act of 1969. The Act requires us to examine the effects of proposed actions on the natural and human environment. In the following sections, alternatives for future Refuge fire management, the environmental consequences of each alternative, and the preferred management direction are described.

### Need:

In order to meet Federal and specifically FWS regulations, an approved fire management plan must be in place before any prescribed burning may take place on Hamden Slough NWR.

The 1995 Final Report of the Federal Wildland Fire Management Policy and Program Review provides guiding principles that are fundamental to the success of the Federal wildland fire management program and implementation of review recommendations. These recommendations include Federal wildland fire policies in the areas of: safety, planning, wildland fire, prescribed fire, preparedness, suppression, prevention, protection priorities, interagency cooperation, standardization, economic efficiency, wildland/urban interface, and administration and employee roles. The 2001 Federal Fire Management Policy update addresses 17 distinct items, the foremost being safety; all FMPs and fire management activities must reflect this commitment.

The Federal Wildland Fire Management Policy that now governs wildland fire management provides for a full range of responses and the opportunity for wildland fires to be managed for resource benefits. This policy represents a significant departure from past fire management practices. All ignitions occurring in wildland areas are now classified as wildland fires or prescribed fires. Wildland fires include any non-structure fire, other than prescribed fire, that occurs in the wildland, regardless of whether the origin is natural (generally lightning) or human (accident or arson). All wildland fires will receive a suppression response. Prescribed fires include any fire ignited by management actions to meet specific objectives. Prior to the ignition of prescribed fires, a written, approved prescribed fire plan must exist, and NEPA requirements must be met. This EA constitutes the requisite NEPA documentation and compliance for the FMP. Specific needs include:

- Wildland fires are managed with the appropriate management response as

directed by the FMP and analysis of the specific situation.

- .
  - Minimize burned area due to high values to be protected, threats to life or property, or other social, political, and economic considerations that outweigh potential environmental benefits.
- .
  - Implement a wildland fire suppression decision-making process that evaluates and compares alternative strategies with respect to safety, environmental, social, economic, political, and resource management objectives.
- .
  - Meet current Departmental and Service policies as well as Congressional direction regarding need for consistent, up-to-date FMPs.
- .
  - Plan for use of prescribed fire to restore the historic role of fire to fire dependent or fire adapted habitats.
- .
  - Use prescribed fire or other appropriate tools to reduce hazardous fuels to protect both Refuge improvements and reduce risk of fire escape to adjacent land ownerships.

The FMP for the Refuge has been developed to provide direction and continuity in establishing operational procedures to guide all fire management activities. The Refuge FMP is needed to guide us while implementing resource management objectives as defined in our Establishment EA. The FMP will be updated as needed to comply with all permanent management plans as they are developed. The Refuge's current FMP is 6 years old and is being updated per agency policy. A Comprehensive Conservation Plan for the Refuge is scheduled to begin in 2010.

The goal of this FMP and the Alternatives developed is the management of wildland fire to:

- a. Provide for fire fighter and public safety.
- b. The protection of property.
- c. Provide for protection of habitats required by endangered and threatened species.
- d. Implement a safe and cost effective program of resource protection and enhancement.
- e. Reduce hazardous fuels; and protect native biotic communities.

The alternatives detailed in this document will accomplish these goals to varying degrees.

### **Background:**

Hamden Slough NWR was established in 1989 to restore and protect 8,565 acres of native prairie and wetlands on the historic range of the northern tallgrass prairie of western Minnesota. This site was identified as 5,944 fee title acres in a refuge designated core area, and 2,621 acres on a surrounding lease – easement zone.



Hamden Slough NWR currently holds 3,402 acres in fee title in west central Minnesota, within Becker County. The refuge is about 7 miles northwest of Detroit Lakes, Minnesota and just east of the Buffalo River. The nearest communities are Audubon, Minnesota, about 1 mile southwest of the southern boundary of the refuge, and Callaway, Minnesota, about 3 miles east of the northern boundary. The refuge is rectangular with the approximate dimensions of 10 miles in the north-south direction by about 1.3 miles in the east-west direction (Figure 1).

The wide array of both resident and migratory species found on the Refuge is due to the varied habitat types found in the grassland/wetland complex. The mix of grasslands, wetlands, and emergent marsh all contribute to the species diversity of the wildlife community found at the Refuge. Fire is a critical ecological process in development and continuation of the northern tallgrass prairie and wetland ecosystem that has created the habitat required by many species of wildlife that are of management concern within the Region.

Historically, wildland fire played a major role in maintaining the northern tallgrass prairie ecosystem and associated wetland habitats. Fire was crucial in maintaining the early successional stages of the vegetation found here. Today, prescribed fire will be the preferred tool for restoring and maintaining these prairie grassland habitats.

### **Decision Framework:**

The Regional Director for the Great Lakes-Big Rivers Region (Region 3) of the U.S. Fish and Wildlife Service will use this Environmental Assessment to select one of the alternatives and determine whether the alternative selected will have significant environmental impacts, requiring preparation of an Environmental Impact Statement (EIS). It is recommended that the reader refer to the Fire Management Plan (FMP) for Hamden Slough NWR when reviewing this Environmental Assessment. An FMP is needed to address current management issues, propose a plan of action, and meet current policy which the Service and its partners can use to achieve the future vision for the Refuge.

### **Policy, Authority, Legal Compliance, and Compatibility:**

The National Wildlife Refuge System includes Federal lands managed primarily to provide habitat for a diversity of wildlife species. The purpose(s) for which a particular Refuge is established are specified in the authorizing document for that Refuge. These purposes guide the establishment, design, and management of the Refuge.

Additional authority delegated by Congress, Federal regulations/guidelines, Executive Orders and several management plans guide the operation and the management of the Refuge and provide the framework for the U.S. Fish and Wildlife Service's proposed action. The key statutes and orders that guide Hamden Slough NWR are summarized in the following section and under Authorities for FMP Development, page 8, of the FMP.

**Lacey Act of 1900, as amended (16 U.S.C. 701)**

Under this Law, it is unlawful to import, export, sell, acquire, or purchase fish, wildlife or plants taken, possessed, transported, or sold: 1) in violation of U.S. or Indian law, or 2) in interstate or foreign commerce involving any fish, wildlife, or plants taken possessed or sold in violation of State or foreign law.

**Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) Migratory Bird Treaty Act of 1978 (40 Stat. 755)**

The original 1918 statute implemented the 1916 convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. The 1978 Act amended the MBTA to authorize forfeiture to the U.S. of birds and their parts illegally taken, for disposal by the Secretary as he deems appropriate. Public Law 95-616 also ratified a treaty with the former Soviet Union specifying that both nations will take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations.

**Migratory Bird Conservation Act (1929), as amended (16 U.S.C. 715-715s)**

The Act of 1929 established a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of Interior for acquisition with Migratory Bird Conservation Funds. The Secretary of Interior is authorized to cooperate with local authorities in wildlife conservation and to conduct investigations, to publish documents related to North American birds, and to maintain and develop Refuges.

**Refuge Improvement Act (1997)**

This Act calls for managing the National Wildlife Refuge System to conserve biological diversity by applying the latest scientific information and methods to Refuge management and its evaluation, and by expanding the system through planned land acquisition. The Act also addresses how to determine the compatibility of each activity or “use” allowed on a Refuge with the purpose of the Refuge and the “wildlife first” mission of the National Wildlife Refuge System. It also requires each Refuge or District to develop a 15-year comprehensive conservation plan.

**Fish and Wildlife Coordination Act (1934), as amended (16 U.S.C. 661-666).**

The Act of 1934 authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with Federal and State agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. In addition, this Act authorizes the preparation of plans to protect wildlife resources, the completion of wildlife surveys on public lands, and the acceptance by the Federal agencies of funds or lands for related purposes, provided that land donations received the consent of the State in which they are located.

**Refuge Recreation Act, as amended, (Public Law 87-714.76 Sta. 653; 16 U.S.C. 460k 4 September 28, 1962).**

This Act authorized the Secretary of the Interior to administer Refuges, hatcheries, and other conservation areas for recreational use, when such uses do not interfere with the area’s primary purposes.

**National Wildlife Refuge System Administration Act of 1966 (U.S.C. 668dd-668ee).** This Act provides guidelines and directives for administration and management of all areas in the system,

including “wildlife Refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas.”

**Fish and Wildlife Conservation Act of 1980 (Public Law 96-366, dated September 29, 1980). (“Non-game Act”) (16 U.S.C. 2901-2911; 94 Stat. 1322).**

Public Law 96-366 authorized the Service to monitor and assess migratory non-game birds, determine the effects of environmental changes and human activities, identify those likely to become candidates for endangered species listing, identify appropriate actions, and report to Congress 1 year from enactment. It also requires the Service to report at 5 year intervals on actions taken.

**The National Wilderness Preservation Act of 1964 Public Law 88-577 (16 U.S.C. 1131-1136)**

Established a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes. From this Act, Wilderness Areas are designated.

**The Protection of Timber Act of 1922 (42 Stat.857; 16 U.S.C. 594)**

Provides basic authority for the Secretary of the Interior to protect timber of lands under the Department’s jurisdiction from fire, disease, and insects.

**The Federal Noxious Weed Act Public Law 93-629 (7 U.S.C. 2801 et. Seq.; 88Stat. 2148)**

Established a program to control the spread of noxious weeds.

**Fish and Wildlife Act of 1956, as amended [16 U.S.C. ss 742f (a) (4) (5)].**

This Act is the specific law granting authority for acquiring lands for national wildlife refuges. Under this Act, the Secretary of the Interior is authorized to take steps as may be required for the development, advancement, management, conservation, and protection of fish and wildlife resources including but not limited to research, development of existing facilities, and acquisition by purchase or exchange of land and water or interests therein. The Act also authorizes the Service to accept gifts of real or personal property for its benefit and use in performing its activities and services. Such gifts qualify under Federal income, estate, or gift tax laws as a gift to the United States.

**Land and Water Conservation Fund Act of 1965.**

This Act provides funding through receipts from the sale of surplus Federal land, appropriations from oil and gas receipts from the outer continental shelf, and other sources for land acquisition under several authorities. Appropriations from the Fund may be used for matching grants to the states for outdoor recreation projects and for land acquisition by various Federal agencies, including the Service.

**The Refuge Revenue Sharing Act of 1935, as Amended.**

This Act established procedures for making payments to counties in which national wildlife refuges are located. Such payments come from revenues derived from the sale of products and privileges from national wildlife Refuges, supplemented by Congressional appropriations. The revenues are deposited in a special Treasury account, and net receipts from this are distributed to counties or other units of local government to help offset their loss of tax revenue that occurs when land for national wildlife Refuges is acquired by the Federal Government and removed from tax rolls. Three formulas are used to determine payments.

**Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).**

These Executive Orders prohibit any significant changes to the natural and beneficial values of the floodplain or wetland and require avoidance of direct and indirect support of floodplain development.

**Executive Order 12996 (Management and Public Use of the National Wildlife Refuge System).**

This order defines a conservation mission for the Refuge System to “preserve a national network of lands and waters for the conservation and management of fish, wildlife, and plants of the United States for the benefit of present and future generations.” Six compatible Wildlife-dependent recreational activities (hunting, fishing, wildlife observation, photography, environmental education, and interpretation) are defined as priority uses. The order also provides for the identification of existing wildlife-dependent uses that would continue to occur as lands are added to the system. The order defines four guiding principles for management: habitat conservation, public use, partnerships, and public involvement.

**National Environmental Policy Act of 1969, as Amended.**

Established a National policy for the environment. Preparation of this EA is a part of the Service’s compliance.

**Executive Order 12372 (Intergovernmental Review of Federal Programs).**

In compliance, copies of this EA will be sent to the Minnesota Clearinghouse.

**Clean Water Act, as Amended.**

Section 404 of this Act requires that a U.S. Army Corps of Engineers permit be obtained prior to dredging or filling in waters of the United States.

**Endangered Species Act of 1973, as Amended**

Provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, through Federal and State actions. A consultation pursuant to Section 7 of the Endangered Species Act was conducted as part of this project to ensure that the proposal would not affect the continued existence of any endangered or threatened species in the project area or result in destruction or adverse modification of their critical habitats.

**National Historic Preservation Act.**

Section 106 of the Act of 1966 requires Federal agencies to consider the effects of their undertakings on properties meeting the criteria for the National Register of Historic Places. The regulations in 36 CFR, Part 800, describe how Federal agencies are to identify historic properties, determine effect on significant historic properties, and mitigate adverse effects. Section 110 of the 1966 Act codifies the salient elements from Executive Order 11593, “...to ensure that historic preservation is fully integrated into the ongoing programs and missions of Federal agencies.” Section 110 also requires each Federal agency to establish a program to inventory all historic properties on its land.

**Archaeological Resources Protection Act.**

Section 14 of this Act of 1979 requires an inventory program of all Federal lands. It applies to the protection of all archeological sites more than 100 years old (not just sites meeting the criteria for the National Register) on Federal land and requires archaeological investigations on Federal land

be performed in the public interest by qualified persons.

### **The Native American Graves Protection and Repatriation Act of 1990.**

This Act directed Federal agencies to protect Native American human remains and associated burial items located on or removed from Federal land.

## **Chapter 2**

### **Management Alternatives**

#### **Introduction:**

All alternatives considered within this EA deal with various combinations of 3 fire types; human caused wildland fires, naturally occurring wildland fires and management ignited prescribed fires. Under all alternatives discussed within this EA, all human-caused wildland fires and all escaped management ignited prescribed fires will be suppressed. The following definitions are used throughout this document.

Suppression - All the work of extinguishing or confining a fire beginning with its discovery.

Management Ignited Prescribed Fire - Fire intentionally ignited to accomplish management objectives in specific areas under prescribed conditions identified in an approved Prescribed Fire Plan.

Minimum Impact Suppression Techniques (MIST) - The application of strategy and tactics that effectively meet suppression and resource objectives with the least environmental, cultural and social impacts.

Naturally Ignited Wildland Fire- Fire ignited by natural means (usually lightning)..

Appropriate Management Response - The specific actions taken in response to a wildland fire to implement protection and/or fire use objectives.

The following alternatives are viable management alternatives developed with input from knowledgeable individuals and scrutinized by impartial professionals. **The alternatives are:**

***Alternative A: (Preferred) Prescribed burning would be utilized as a management tool. All wildland fires will be suppressed.***

***Alternative B: (No Action) No prescribed burning will be used. All wildland fires will be immediately suppressed.***

***Alternative C: No prescribed burning will be used. All wildland fires will be monitored and managed accordingly.***

#### **Descriptions of Alternatives**

**Alternative A: (Preferred) Prescribed burning would be utilized as a management tool. All wildland fires will be suppressed.**

This alternative would allow for flexibility when considering management options. There are many benefits to the use of prescribed burning which, when combined with other management techniques such as mechanical treatments, allows for the best habitat management results. Often, a sequence of fires is needed for restoration, and fires are needed periodically to maintain native prairie. A considerable amount of effort will be expended in restoring northern tallgrass prairie on Hamden Slough NWR. The use of prescribed fire will allow for the successful re-establishment and restoration of these grasslands. Not only can time and money be saved, but the effects of fire management will meet habitat objectives in this fire dependent ecosystem better than any other method.

All wildland fires will be suppressed. Without the proper site preparation and pre-ignition controls involved in prescribed burning, wildland fires will have a greater likelihood of adversely affecting life, personal property, facilities, infrastructure and/or endangered species. Wildland fires will be suppressed utilizing Minimum Impact Suppression Techniques (MIST).

**Alternative B - (No Action) No prescribed burning will be used. All wildland fires will be immediately suppressed.**

This alternative prevents the use of prescribed burning as a habitat management tool. Other, less effective and less efficient measures will be used to accomplish management objectives. All wildland fires will be suppressed immediately. The wetlands and water that are interspersed throughout the Refuge would act to help contain wildland fires and reduce the occurrence of ignition. Without the proper site preparation and pre-ignition controls involved in prescribed burning, wildland fires have greater likelihood of affecting life, personal property, facilities, infrastructure and having undesired effects on habitat. Wildland fires will be suppressed utilizing MIST.

**Alternative C - No prescribed burning will be used. All wildland fires will be monitored and suppressed accordingly.**

This alternative prevents the use of prescribed burning as a management tool. Wildland fires would be allowed to burn in all areas of the Refuge, as long as they meet the following criteria:

- must not endanger human life or health.
- must not endanger private or government-owned property.
- benefits must outweigh damage to natural resources.
- must not have any negative impact on endangered, threatened, or rare species.
- must be capable of being easily brought under control with the resources immediately available.
- are subject to a daily review of fire behavior and conditions in a Wildland Fire Implementation Plan. Wildland fires will be suppressed utilizing MIST for which policy states a fire use plan is required.

## **Chapter 3**

### **Affected Environment**

#### **General:**

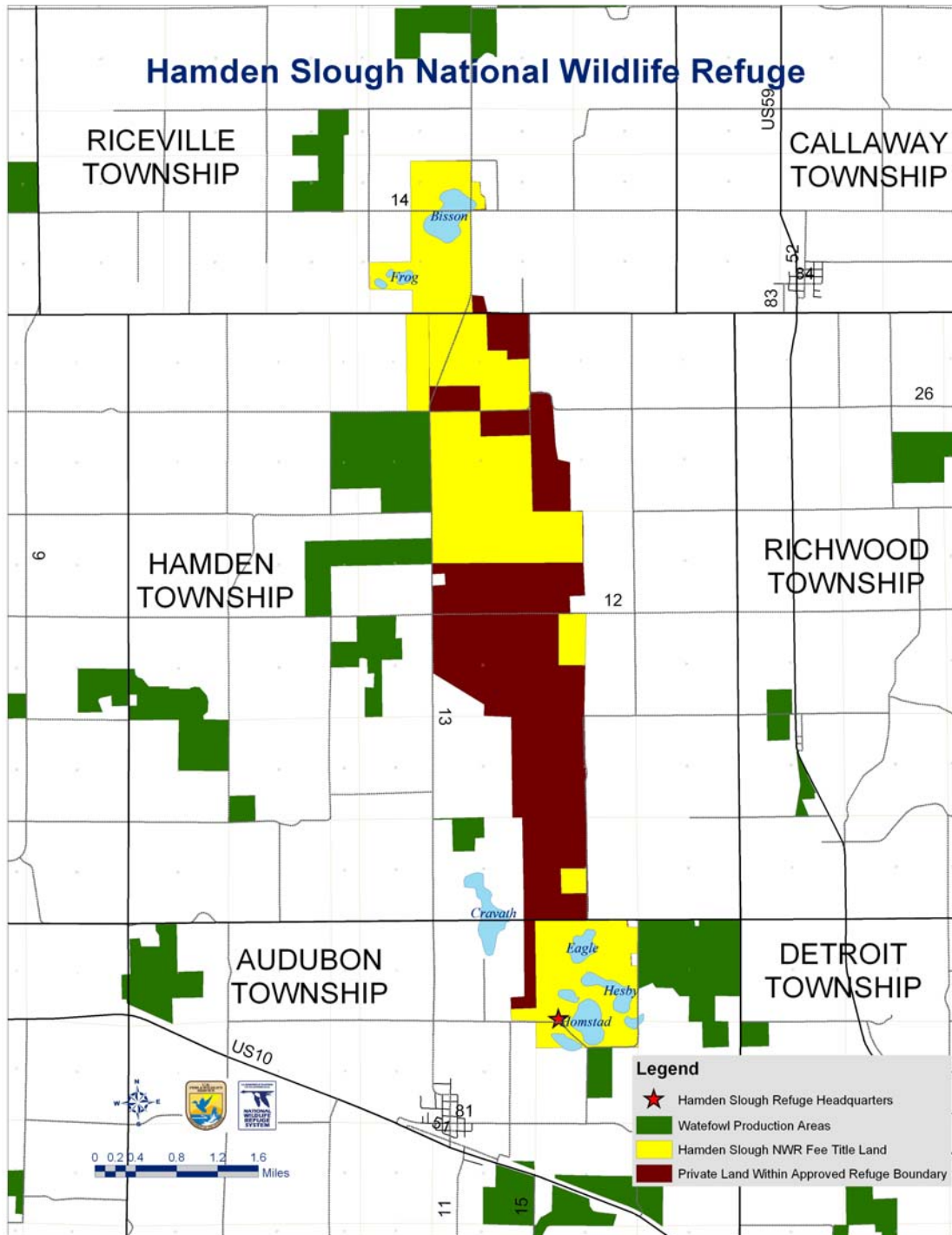
Hamden Slough NWR, established in 1989, is currently 3402 acres. Additional acquisition is planned. The Refuge is managed by the Detroit Lakes Wetland Management District, Detroit Lakes, Minnesota. A former office facility and a storage warehouse exist on the Refuge as well as water control structures, parking areas, and a trail.

The Refuge lies within the tallgrass prairie biome of west-central Minnesota. Eastern forests rapidly transition to the western prairie grasses (McNabb and Avers 1994). This biological diversity of vegetation is highly attractive to wildlife, especially migratory birds. But intense agriculture and the associated draining of wetlands over the past 100 years has had a cataclysmic effect on this historic wildlife area. In the north central plains, an estimated 99% of the tallgrass prairie has been plowed under, and over 90% of the prairie wetlands drained. Around Hamden Slough NWR, more than 55,000 wetlands have been drained. This loss and fragmentation of the prairie has resulted in a precipitous drop of prairie wildlife populations. Most notable during the last 30 years, has been the decline of migratory prairie bird populations. Many species of waterfowl, including the Eastern Prairie Pothole population of Canada geese, shorebirds, neotropical migrants, and avian predators rely on the shallow-water and prairie habitats that have been restored on the refuge. When fully restored, the Refuge will provide the largest contiguous block of wetland-prairie habitat in the region.

#### **Climate**

The Refuge's climate is continental with cold winters and warm summers and is highly variable. Average annual precipitation is 32 inches. Precipitation typically falls during two peak periods, one in early summer and a less pronounced peak in September. Average maximum annual temperature is 58 degrees Fahrenheit and average minimum annual temperature is 36 degrees Fahrenheit. The growing season is 180 days. July is the warmest month and January the coldest month.

**Figure 1 - Location of Hamden Slough NWR**





## **Physical Features**

Hamden Slough NWR is situated on 3,402 acres in west central Minnesota within Becker County. The refuge is about 7 miles northwest of Detroit Lakes, Minnesota and just east of the Buffalo River. The nearest communities are Audubon, Minnesota, about 1 mile southwest of the southern boundary of the refuge, and Callaway, Minnesota, about 3 miles east of the northern boundary. The refuge is rectangular with the approximate dimensions of 10 miles in the north-south direction by about 1.3 miles in the east-west direction (Figure 1). The refuge occupies land on the easternmost edge of the tallgrass prairie.

Hamden Slough NWR topography is nearly level on the north end and mildly sloping on the southern portion. Soils are well drained, very deep clay loams which form a thick till over glacial outwash. The surface layer of the soil is generally grayish black loam to a depth of 8 inches. The subsoil layer is composed of silty sandy clay that is light gray and mottled. The subsoil layer extends below a depth of 6.5 feet. The available water capacity of the soil is very high and the permeability can be rapid. There is a high water table at or near the surface, on the lower slope of the glacial outwash ridge.

Eastern forests dramatically give way to the western prairie at Hamden Slough NWR. Refuge topography is nearly level on the north end and mildly sloping on the southern portion. It is also the lowest elevation in a 42 sq. mile watershed, which provides excellent wetland conditions even in drier periods. The available water capacity of the soil is very high and the permeability can be rapid. There is a high water table at or near the surface on the east side of the Refuge boundary. The Refuge east boundary lies along the lower slope of the glacial outwash ridge.

The Refuge is almost entirely surrounded by private land, mostly former grasslands, agricultural lands and wetlands. A few Waterfowl Production Areas, owned in fee title by the Fish and Wildlife Service, as well as conservation easements are adjacent to the Refuge.

## **Vegetation**

The Hamden Slough National Wildlife Refuge falls within the Northern Tallgrass Prairie and prairie-woods transition zone of the Prairie Pothole Region. The Northern Tallgrass Prairie contains a mixture of native grasses including but not limited to; Little Bluestem (*Schizachyrium scoparium*), Blue Grama (*Bouteloua gracilis*), and the *Stipa* family of grasses including needle grass (*Hesperostipa comata*) and porcupine grass (*Hesperostipa spartea*). The transition upland/lowland grasslands contain Big Bluestem (*Andropogon gerardii*) and Indian grass (*Sorghastrum nutans*), while the wet lowland grasslands contain Prairie cordgrass (*Spartina pectinata*), and Blue joint reedgrass (*Calamagrostis Canadensis*). Tallgrass prairie, including some native prairie remnants, comprises 3,550 acres (60%) of the proposed 5,944 acre refuge. The dominant restored grassland species on the refuge is big bluestem (*Andropogon gerardii*). The Refuge also contains some cool season exotic grasses such as reed canary grass and smooth brome in areas that have not yet been restored. Aquatic emergent vegetation such as cattails is also present in wetlands as well as typical prairie wetland submergent vegetation. Portions of the Refuge have been hayed and farmed in some years to temporarily enhance habitat for certain species of wildlife.

Other habitat types on the refuge include 2,218 acres (37%) of palustrine wetland, 113 acres (2%) of woodland, 218 acres (0.5%) of open water, and 173 acres (0.5%) of bare soil and paved areas. The palustrine wetland category includes all growth stages of palustrine vegetation including early successional wetland.

Major Habitat Types currently on the Hamden Slough National Wildlife Refuge are as follows:

Native Prairie (virgin)	20 acres
Farmland	195 acres
Forested	5 acres
Wetland	2002 acres
Seeded Native Grasses & Forbs	1180 acres

### **Invasive Species**

Three categories of undesirable species (invasive, exotic, noxious) are found within the Refuge. Invasive species are alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Executive Order 13112 requires the Refuge to monitor, prevent, and control the presence of invasive species. Exotic species are those that are not native to a particular ecosystem. Service policy directs the Refuge to try to maintain habitats free of exotic species. Noxious weeds are designated by the U.S. Department of Agriculture or the Minnesota Department of Agriculture as species which, when established, are destructive, competitive or difficult to control. Canada thistle, plumeless thistle, and leafy spurge are introduced species that occur on the Refuge that are classified as noxious weeds in Minnesota.

Currently, most Refuge control efforts focus on Canada thistle, plumeless thistle, spotted knapweed. Exotic and invasive plant species pose one of the greatest threats to the maintenance and restoration of the diverse habitats found on the Refuge. They threaten biological diversity by causing population declines of native species and by altering key ecosystem processes like hydrology, nitrogen fixation, and fire regimes. Left unchecked, these plants can come to dominate areas and reduce the value of the land as wildlife habitat. However, areas of good native tallgrass prairie can successfully compete with many invasive and exotic species. There is often a seed source of many of these exotic/invasive species on the lands surrounding the Refuge, thus in order to be effective in our management plans, we must bring together a complex set of interests including private landowner, commercial, and public agencies to combat invasive species and restore native plants.

### **Wildlife**

Hamden Slough NWR provides habitats for, and subsequently attracts, an abundance of wildlife species. A complete species list can be found in the Fire Management Plan.

Eleven species of amphibians, 5 species of reptiles, 35 species of mammals, and 223 species of birds have either been recorded or can reasonably be expected to be present on the Refuge for a portion of the year.

Waterfowl species that use the prairie wetlands of this area of Minnesota include: redhead, Northern shoveler, blue-winged teal, mallard, wood duck, canvasback, and Canada goose. Other waterfowl use the prairie wetlands in this area to a lesser degree: pintail, gadwall, lesser scaup, and ring-necked duck. Some of these species rely on grains for food most of the year but during the spring and summer, they shift to aquatic plants and insects. They depend on the wetlands for food during the breeding season. The Refuge contains habitat important to bird species other than waterfowl, including songbirds, marsh and wading birds, shorebirds, raptors, and upland game birds such as the greater prairie chicken, sharp-tailed grouse, ring-necked pheasant, and wild turkey.

The Refuge provides key tallgrass prairie and grassland habitat in the mosaic of prairie pothole wetlands that are so incredibly productive and important ecosystem habitats for resident and migratory birds. The original tallgrass prairie and prairie wetland complexes of western Minnesota were important habitats for countless migratory birds. However, the prairie pothole region of Minnesota has lost 99 percent of its original, pre-settlement prairies, and over 90 percent of its wetlands to farming and other land use activities. Grassland bird species have shown steeper, more consistent, and geographically more widespread declines than any other group of North American birds (Knopf 1994). Fifty-five grassland plants or animal species in the U.S. are threatened or endangered (Samson and Knopf 1994). The Refuge helps fill the void of this ever threatened grassland and wetland habitat complex so important to sustaining viable bird populations.

Minnesota has developed a State Wildlife Action Plan that has analyzed the animal species of Minnesota, identified those most in need of attention because they are declining or are dependent on habitat or places that are declining, and suggests conservation measures to ensure their survival. It lists those Species of Greatest Conservation Need. The State's analysis provides a good basis for coordination of Refuge activities with the State and other conservation organizations. This information is available in the State Wildlife Action Plan (<http://www.wildlifeactionplans.org/minnesota.html>).

## Mammals

The Refuge supports 35 species of resident mammals that are locally abundant depending on the availability of food sources, loafing areas and security habitat. White-tailed deer are fairly abundant within the Refuge, as are rabbits. Furbearers, including fox, coyote, long and short tailed weasels, skunk, mink, beaver and raccoons also are locally common and seen in the area on a regular basis.

## Fish

Data from surveys conducted in 1983-1992 indicated that seven species of fish were found on WPAs in the region. Hamden Slough NWR likely contains a similar species assemblage. These species were bullhead, yellow perch, white sucker, golden shiner, pumpkinseed, fathead minnow, stickleback and mud minnow.

## Invertebrates

The wetlands on Hamden Slough NWR contain typical prairie wetland invertebrates. Limited sampling has been done. Freshwater invertebrates are an extremely important food source for waterfowl, especially for hens during spring migration and egg laying.

## Reptiles and Amphibians

Eleven species of amphibians and five species of reptiles have been recorded. Streams, ditches and wetland basins provide the aquatic habitat required for a variety of turtles, frogs, toads, salamanders, and snakes. No surveys have been conducted on Refuge lands to document species presence or distribution, although some species such as snapping turtle, painted turtle, and spring peepers are commonly seen or heard.

Reptiles and amphibians are important food sources for many mammals, birds and fish. Their numbers and diversity are often indicators of the health of an ecosystem. Many species of reptiles and amphibians are declining on a state and nationwide basis.

## Wetlands

Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin et al. 1979). It is estimated that the contiguous United States contained 221 million acres of wetlands just 200 years ago (Dahl 1990). By the mid-1970s, only 46 percent of the original acreage remained (Tiner 1984). Wetlands now cover about 5 percent of the landscape of the lower 48 states.

Wetlands are important to both migratory and resident wildlife. They serve as breeding and nesting habitat for migratory birds and as wintering habitat for many species of resident wildlife. Humans also benefit from wetlands as these habitats improve water quality and quantity, reduce flooding effects, and provide areas for recreation.

Wetlands are classified using a number of attributes including vegetation, water regimes (the length of time water occupies a specific area), and water chemistry. Refuge wetlands are classified using the following water regime descriptions (Cowardin et al 1979):

- Temporarily flooded-surface water is present for brief periods during the growing season. The water table usually lies below the soil surface most of the season, so plants that grow in both uplands and wetlands are characteristic.
- Seasonally flooded-surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the surface.
- Semi-permanently flooded-surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
- Permanently flooded-water covers the land throughout the year in nearly all years. Vegetation is composed of obligate hydrophytes, such as cattails.

The Refuge has focused on saving and restoring a complex of wetlands. This will provide resting and nesting cover for 219 species of migratory and nesting birds. Currently, many species of

waterfowl, shorebirds, neotropical migratory songbirds, and birds of prey rely on the shallow water and prairie habitat that has been restored on the Refuge.

Wetland diversity is important because wetlands change continuously; a single wetland cannot be maximally productive all the time. Waterfowl use different types of wetlands at different times during the breeding season. Laying hens may forage in ephemeral, temporary, and seasonal wetlands early in the season and shift to semi-permanent and permanent wetlands after the brood is hatched. Marsh birds need a variety of wetlands in close proximity so they can shift from one wetland to another as the wetlands cycle through different phases. Wetland complexes include a variety of basins, some shallow and some deep, in close proximity. Diverse wetland complexes are rare today because most shallow ephemeral, temporary, and seasonal basins have been drained.

Freshwater wetlands like those on the Refuge are among the most productive in the world (Weller 1982). The dynamic water cycle creates a rich environment for many waterfowl and other marsh birds. Cycling water accelerates decomposition of marsh vegetation, resulting in a natural fertilizer. When the basins recharge in the spring, the water becomes a soup of nutrients and supports a diverse and healthy population of aquatic invertebrates, which feed reproducing waterfowl and marsh birds throughout the spring and summer.

The Refuge contains 2,218 acres (37%) of palustrine wetland, 218 acres (0.5%) of open water. The palustrine wetland category includes all growth stages of palustrine vegetation including early successional wetland. Most of these wetlands are restored from historical basins and more restoration is planned in the future.

### **Threatened, Endangered, and Candidate Species**

There are no federally listed threatened and endangered species that occur in Becker County. There was an incidental sighting of a piping plover on the Refuge in July, 1999. (U.S. FWS Endangered & Threatened Species List).

The State of Minnesota lists an additional 14 threatened or special concern species, which have been sighted or nest on the refuge. The 6 nesting species are: Wilson's phalarope, marbled godwit, Nelson's sharp-tailed sparrow, common moorhen, greater prairie chicken, and snapping turtle. (Minnesota DNR: Endangered, Threatened and Special Concern Species). The Fire Management Plan lists species identified as Threatened, Endangered and of Special Concern by the State of Minnesota under state statutes.

## **Chapter 4**

### **Environmental Consequences**

#### **Impacts Common to All Alternatives**

There are potential impacts common to all of the proposed alternatives. They are found as follows and not repeated in the individual alternatives.

## **Cultural Resources**

Impacts to archeological resources by fire resources vary. Preparation for prescribed fire activities or to control wildfire is subject to Section 106 of the National Historic Preservation Act. Rather than repeat the protocols and procedures followed within region 3 of the U.S. Fish and Wildlife Service here, the accepted methodology is described in detail and found in Appendix A of the Hamden Slough NWR Fire Management Plan.

No site listed on the National Register of Historic Places is located on fee title tracts within the designated boundaries of the refuge. A total of 11 potential archaeological sites, and 2 recorded archaeological sites, were located within the refuge's designated boundary, by IMA (Institute for Minnesota Archaeology) Consulting, Inc., in November 1997. The two recorded sites are still in private ownership. IMA Consulting recommended that an archaeological survey of these areas should be performed prior to any planned ground-disturbing activities.

If new sites are discovered, the Regional Office Historical Preservation Officer and appropriate State Historic Preservation Officer will be contacted.

The alternatives described and considered for selection are as follows:

**Alternative A: (Preferred) Prescribed burning would be utilized as a management tool. All wildland fires will be suppressed.**

## **Habitat Impacts**

This alternative would allow for flexibility when considering habitat management options, particularly in restoration and maintenance of northern tallgrass prairie ecosystems. Prescribed fire will allow for the control of undesirable grasses and encroaching woody vegetation, can increase quality and quantity of grasses, suppress certain invasive plants, increase plant diversity, shift species composition, and increase seed production (Higgins et al.). Tallgrass prairie evolved with, and is adapted to fire. Fire is a natural part of the cycle of maintaining prairies and is the best means of achieving the desired habitat benefits of native and restored prairie on Hamden Slough NWR. The transition of previously farmed agricultural lands to restored native grasses is best accomplished and maintained with the use of prescribed fire.

Fire may also be used as a tool to eliminate woody vegetation encroaching in moist soil areas and to reduce the canopy of dense stands of vegetation. Vegetation control on moist soil units may be more effective with the periodic use of fire, and fire may trigger germination of beneficial plants. Many of the wetlands on the Refuge are choked with cattails or other emergent vegetation. Prescribed burning can reduce the accumulation of dead vegetation and create openings in dense stands of marsh vegetation (Kjellsen and Higgins 1990).

## **Biological Impacts**

Conversion of prairie lands and wetlands to desirable and diverse native vegetation will provide higher quality habitat for migratory grassland birds, ground nesting birds, and other Service trust wildlife species than introduced grasses and forbs. Fire in grasslands increases soil nutrients which in turn provide benefits to plants. Further, fire provides many complex and subtle

beneficial effects to grasslands and specific plant species and is natural to the ecosystem. Some plant species are adapted to fire and dependent on it for germination.

### **Listed Species**

An incidental sighting of a piping plover occurred once on the Refuge, but no known threatened or endangered species occur on the Refuge. Piping plovers nest on bare alluvial and sand and gravel areas with little vegetation. Fires likely would not destroy nests or affect piping plovers if they were present.

### **Administration**

Prescribed burning is generally more cost-effective than other management tools. Without the use of prescribed burning, heavy equipment, chemicals, or livestock will be required to accomplish management goals of habitat restoration. Heavy equipment is expensive and time consuming to operate. Chemical use, for controlling undesirable vegetation is costly, demands strict oversight, and may pose unknown risks to the environment. Use of grazing animals requires construction and maintenance of fence.

### **Health and Safety**

Lack of fire would allow fuels to build to hazardous levels, thus creating more wildfire potential and fires that are more difficult to control. This can create more safety concerns for firefighters. Periodically removing litter accumulation through prescribed fire will reduce this hazard. There is some risk of visitors being on or near an area where either wildland fire or prescribed fire operations are ongoing. Mitigation of this risk involves the use of closures, signage and patrol by Refuge staff. Employees would be at some risk during all fire operations including prescribed fire application. The use of chemicals and heavy equipment for the control of undesirable vegetation can also pose a health risk to the applicator and the environment.

### **Cumulative Impacts**

There are several potential impacts that may be considered cumulative. One is the effect of smoke from either wildland or prescribed fires on air quality within the Refuge area. Prescribed fires also take place on the adjacent Detroit Lakes Wetland Management District, a five county district with over 40,000 acres of scattered waterfowl production areas (WPA's). These WPA's contain similar habitat to the Refuge and burns are conducted for similar reasons. While there may be multiple burns occurring on the same day, this is limited because the same staff conduct burns on both areas. Proper planning of prescribed fire operations and adherence to the Minnesota smoke management plan would mitigate a large percentage of this impact over the immediate area. Prescribed fire smoke effects on regional air quality and that impact on the visibility in the area is not known but can be expected to add to haze levels on burn days. Smoke from wildland fire would also have an effect on regional haze but is considered a natural event under the EPA air quality regulations.

Fire can temporarily reduce habitat, but prescribed fire planning would address issues of timing to

reduce conflicts with nesting and fledging seasons. Fall burns can reduce winter cover for wildlife. Both spring and fall burns may occur at the same time that agricultural fields are bare, creating a cumulative temporary lack of cover. There may also be increased runoff for a short time before green up occurs on burned areas.

Prescribed burning will keep fuels at manageable levels and prevent the accumulation of hazardous fuels that will affect fire severity. A cumulative benefit, therefore, is manageable fires that can meet particular habitat goals.

Another cumulative effect is restoration of native vegetation to Refuge grasslands, supported by fire application. Under this alternative, prescribed fire use would restore and maintain the valuable northern tallgrass prairie ecosystem. The prairie ecosystem would not function well without the presence of fire. Fire supports a diversity of plants that have evolved with fire. This in turn supports a diversity of wildlife, in particular declining grassland birds and other trust species. Therefore, the cumulative benefit of prescribed burning under this alternative is improvement of habitat that will contribute to increased populations of grassland birds and other species.

Grasslands are recognized by many as the most imperiled ecosystem worldwide. The avian assemblages associated with grasslands also are at risk - grassland bird populations have shown steeper, more consistent, and more geographically widespread declines than any other guild of North American species (Department of the Interior 1996). Breeding Bird Survey data from 1966-1993 indicate that almost 70 percent of 29 grassland bird species adequately surveyed by BBS data had negative population trends; more than half of these were statistically significant (Northern Prairie Wildlife Research Center, USGS). Restoration of the northern tallgrass prairie would increase the acreage of this valuable and currently reduced cover type so important to bird habitat.

**Alternative B - (No Action) No prescribed burning will be used. All wildland fires will be immediately suppressed.**

### **Habitat Impacts**

Under this alternative, some aspects of habitat management can be completed with mechanical, chemical, or biological methods; however, management would be less efficient and provide fewer ecological benefits. Achieving the full ecosystem functions from a tallgrass prairie requires the presence of fire. Without the ability to conduct prescribed burns on the Refuge, habitat conditions will deteriorate for grassland species. Grassland areas would be less attractive to migrating grassland birds, ground nesting birds, and other wildlife species. Increased encroachment of undesirable woody plants, high levels of litter accumulation, decreased prairie plant diversity, and increased exotic plants would be the likely habitat result in the absence of fire. Management options for dealing with invading aquatic emergent vegetation would also be limited to mechanical, chemical, and biological options.

### **Biological Impacts**

Less than optimal management yields decreased grassland structure and diversity and decreased habitat quality for grassland nesting birds including waterfowl, prairie chickens, and passerine



birds. Nearly every species which relies upon the grassland/wetland habitat complex would be potentially negatively impacted should management lose the ability to properly utilize prescribed fire as a management tool. Growth of trees and shrubs in these grassland areas, buildup of litter, and reduced plant species diversity would greatly reduce their value for grassland nesting species of birds. Many of these bird species will not nest or reproduce successfully near trees and many need diverse plants to provide diverse food sources. Fire dependent plants and other benefits, such as increases in soil nutrients, would not occur to contribute to the diversity of the prairie stand.

Management practices involving mechanical site disturbances to control undesirable vegetation may leave soils barren and exposed to the elements. The siltation of wetlands within the Refuge could take place resulting in declining water quality and is a major concern. There is the potential for wildland fires under extreme drought conditions to result in increased runoff due to the removal of the grass and duff layer with a resultant decrease in water quality. Use of chemicals in the absence of fire may pose unknown threats to wildlife.

### **Listed Species**

No listed species are known to occur on the Refuge.

### **Administration**

Heavy equipment, chemicals, or grazing animals will be required to accomplish management goals. Heavy equipment is expensive to acquire and maintain, time consuming to operate and requires specialized operator training. Mechanical methods of controlling vegetation are costly and labor intensive. The labor required to complete the mechanical methods is more expensive due to the hours consumed by equipment operations, maintenance and fuel. The use of chemicals is costly and demands strict supervisory oversight and may pose unknown risks to the environment. Mechanical and chemical treatments on a regular basis are not as cost effective as prescribed fire application. Use of grazing animals would require fences that are also costly to install and maintain.

### **Health and Safety**

Lack of fire would allow fuels to build to hazardous levels, thus creating more wildfire potential and fires that are more difficult to control. This creates more risk to firefighters. The use of chemicals for the control of undesirable vegetation can pose a health risk to the applicator. There is some risk to Refuge visitors under this alternative from wildland fire but none from prescribed fire operations. Wildland fire suppression risks to employees is identical to the risk under Alternative A, there is no employee risk from prescribed fire operations since they would be banned from use under this alternative.

### **Cumulative Impacts**

There are several potential impacts that may be considered cumulative. One is the effect of smoke from wildland fires on air quality within the Refuge area. Smoke from wildland fire would also have an effect on regional haze but is considered a natural event under the EPA air quality regulations. Prescribed fire is not an issue under this alternative and there would be less smoke

than in the other alternatives since all fires would be suppressed.

The second cumulative effect is related to restoration of native prairie grassland from their current condition by the use of chemical, mechanical, or biological methods. Restoration would be slowed and reduced without the use of fire as a management tool. Therefore, there would be a cumulative loss in habitat for grassland birds and other wildlife. Chemical and mechanical methods are much more costly to implement than is prescribed fire. The use of grazing animals would require construction and maintenance of fences.

A third potential effect is the enhancement or reduction of neotropical and migratory bird populations with changing habitat conditions. Mechanical, chemical, and biological treatments would have to be timed to reduce conflicts with nesting and fledging seasons.

### **Alternative C - No prescribed burning will be used. All wildland fires will be monitored and managed accordingly.**

#### **Habitat Impacts**

Under this alternative, some aspects of habitat management can be completed; however, management would be less efficient and provide fewer ecological benefits. Achieving the full ecosystem functions from a tallgrass prairie requires fire. Without the ability to conduct prescribed burns on the Refuge, habitat conditions will deteriorate for grassland species. Grassland areas would be less attractive to migrating grassland birds, ground nesting birds, and other wildlife species. Increased encroachment of undesirable woody plants, high levels of litter accumulation, decreased prairie plant diversity, and increased exotic plants would be the likely habitat result in the absence of fire. Management options for dealing with invading aquatic emergent vegetation is limited to mechanical, chemical, and biological options.

#### **Biological Impacts**

Less than optimal management yields decreased grassland structure and diversity and decreased habitat quality for grassland nesting birds including waterfowl, prairie chickens, and passerine birds. Use of chemicals in the absence of fire may pose unknown threats to wildlife.

Grassland conditions would deteriorate, making them less attractive to migrating birds, ground nesting birds, and other wildlife species. Without the effective use of fire, grassland and wetland areas will likely experience invasion by undesirable vegetation forcing waterfowl, shorebirds, and other species to look for suitable habitat elsewhere. Nearly every wildlife species on the Refuge would be negatively impacted should management lose the ability to properly utilize prescribed fire. Wildland fires would be allowed to burn as long as they weren't posing a threat to private, government, historical, or economically important properties. Under this Alternative, whole sections of upland grasslands and wetland areas could potentially be destroyed. In addition, fires that are not in prescription for reaching certain habitat objectives may be too hot due to increased fuel loads, or in other ways cause damage to the plant community. Large areas burned from uncontrolled fires could cause a major shift in habitat types and wildlife usage, and could also potentially threaten wildlife populations on the Refuge. Species utilizing wetlands for nesting and resting cover could be adversely affected due to the loss of habitat and the destruction of plant species. In addition, depending on the time of occurrence of the wildfire, ground nesting birds

could be severely impacted through the loss of active nests.

Management would be by mechanical, chemical, and biological means. The natural maintenance of the northern tallgrass prairie and associated wetland ecosystem through the use of prescribed fire would not occur.

### **Listed Species**

No listed species occur in Becker county.

### **Administration**

Prescribed burning is generally more cost-effective than other management tools. Without the use of prescribed burning, heavy equipment and chemicals will be required to accomplish management goals of habitat restoration. Heavy equipment is expensive and time consuming to operate. Chemical use, for controlling undesirable vegetation is costly, demands strict oversight, and may pose unknown risks to the environment. Further, these two methods are not natural to the ecosystem as is fire. Grazing requires fences that can be costly to install and maintain over time.

### **Health and Safety**

Lack of prescribed fire would allow fuels to build to hazardous levels, thus creating more wildfire potential and fires that are more difficult to control and that create undesired effects. This creates more risk to firefighters. The use of chemicals for the control of undesirable vegetation can pose a health risk to the applicator. There is some risk to Refuge visitors under this alternative from wildland fire but none from prescribed fire operations. Wildland fire suppression risks to employees is similar to that under Alternative A. However, fewer fires may be suppressed and only monitored in this alternative creating less risk to personnel. Fires that are allowed to burn, but then later need to be suppressed may be larger and more difficult to control. There is no employee risk from prescribed fire operations since that is banned from use.

The use of chemicals for the control of undesirable vegetation can also pose a health risk to the applicator and the environment. There is some risk of visitors being near an area where wildland fire use operations are ongoing. Mitigation of this risk involves the use of closures, signage and patrol by District staff. There is no employee risk from prescribed fire operations since that technique is banned from use.

### **Cumulative Impacts**

There are several potential impacts that may be considered cumulative. One is the effect of smoke from wildland fires on air quality in the Refuge airshed. Smoke from wildland fire would also have an effect on regional haze but is considered a natural event under the EPA air quality regulations. Monitored fires are likely to be longer duration events.

The second cumulative effect is related to restoration of native vegetation to Refuge prairie grasslands. Tallgrass prairie will not function properly and will be decreased in quality and vigor without prescribed fires. Wildfires that are allowed to burn may provide some benefits, but may not be in the right areas with the right timing and the right conditions to achieve habitat

objectives. Relying solely on chemical, mechanical, and biological methods will reduce the ecological functioning of the prairie. With a reduction in the native grassland community will also come a decline in the wildlife that depends on it.

A third potential effect is the enhancement or reduction of neotropical and migratory bird populations with changing habitat conditions. Mechanical, chemical, and biological treatments would have to be timed to reduce conflicts with nesting and fledging seasons. The potential for larger burned areas from wildfires that are monitored include possible migrations of many species to less desirable areas, a decrease in biodiversity, a decline in waterfowl usage, damage to rare plants as well as a decline in some animal species populations. These declines could result from reduced habitat and water quality and reduced plant diversity. The tallgrass prairie would not provide its full ecological function in the absence of fire.

### Summary of Environmental Consequences by Alternative

<b>Impact</b>	<b>Alternative A - Full Wildland Fire Suppression, Prescribed fire applied as necessary. May Include the use of mechanical, chemical, biological fuels treatments as needed.</b>	<b>Alternative B - Full Wildland Fire Suppression, No prescribed fire applied (No Action Alternative)</b>	<b>Alternative C - Wildland Fire Monitored and Managed Accordingly, No Prescribed Fire Applied.</b>
Environmental Justice	No Environmental Justice Issues identified	No Environmental Justice Issues identified	No Environmental Justice Issues identified
Cultural Resources	Wildland Fire Impacts expected to be minimal	Wildland Fire Impacts expected to be minimal	Wildland Fire Impacts expected to be minimal
Habitat	Habitat Improved	Potential decline in habitat quality.	Potential decline in habitat quality.
Biological	Improvement	Decline	Decline in biological quality and diversity.
Listed Species	No Change	No Change	No Change
Administrative	Reduced Management Impacts	Higher costs for management are likely	Higher costs for management are likely
Health and Safety	Some increased risk in prescribed fire operations. No change to public safety.	No prescribed fire employee risk, but risk from other methods of vegetation manipulation. No change to public safety. Higher fuel loads create increased risk to firefighters.	Some decrease to employee safety, but risk from other methods of vegetation manipulation. Potential elevated risk to public safety. Higher fuel loads create increased risk to firefighters.
Cumulative	Improvement of overall northern tallgrass prairie and wetland ecosystem habitat. Greatly improved habitat for migratory bird species and waterfowl, along with resident plants and animals	No meaningful change	No meaningful change

## **Chapter 5**

### **List of Preparers**

Cathy Henry, Deputy Project Leader, Detroit Lakes WMD  
Steve Schumacher, Fire Management Officer, Detroit Lakes WMD  
Tim Hepola, Regional Fire Ecologist, Ft. Snelling  
John Dobrovolny, Regional NEPA Coordinator, Ft Snelling

## **Chapter 6**

### **List of Agencies, Organizations, and Persons Contacted**

The news release in Chapter 7 was mailed to the following locations:

#### **Minnesota Department of Natural Resources**

**Detroit Lakes Area Office, Detroit Lakes, MN**

#### **Public Offices/Organizations**

Post Offices: Audubon, Callaway, Detroit Lakes,  
Detroit Lakes Community and Cultural Center

#### **Federal Agencies**

BIA  
NRCS

#### **Local Newspapers and Radio**

Detroit Lakes Tribune – Detroit Lakes, MN  
Lake Area Press – Detroit Lakes, MN  
Fargo Forum – Fargo, ND  
Hawley Herald/Lake Park Journal – Hawley, MN  
KCCM Radio – Moorhead, MN  
KDLM/KKDL Radio – Detroit Lakes, MN  
KRCQ Radio – Detroit Lakes, MN  
KFNW Radio – Fargo, ND  
KVOX Radio – Fargo, ND

#### **Libraries**

Detroit Lakes, MN  
Hawley, MN

## **Chapter 7**

### **Public Comments and Responses**

This Fire Management Plan and Environmental Assessment were opened for a 30 day public review and comment period starting on February 1, 2008. The news release is found on the next page.

IMMEDIATE RELEASE Contact: Steve Schumacher 218-847-4431

**U.S. Fish and Wildlife Service Invites Public Comment on Draft Environmental Assessment and Fire Management Plan for Hamden Slough National Wildlife Refuge**

The U.S. Fish and Wildlife Service is seeking public comment on a draft Environmental Assessment and Fire Management Plan for Hamden Slough National Wildlife Refuge (NWR) in west-central Minnesota. Once approved, the plan will direct the use of prescribed fire and mechanical fuel treatments to properly treat Refuge vegetation and conduct habitat management activities that are vital to the Refuge's wildlife conservation mission for the next 5 years. Refuge management response to wildfires is also addressed in the plan.

Copies of the draft EA and FMP may be requested or viewed by calling the Detroit Lakes Wetland Management District Office at (218) 847-4431. Copies of the EA have also been sent to the Detroit Lakes and Hawley public libraries. Written comments on the FMP can be mailed to Steve Schumacher at Detroit Lakes Wetland Management District, faxed to (218) 847-4156 or sent via e-mail to [Steve\\_Schumacher@fws.gov](mailto:Steve_Schumacher@fws.gov). Comments should be received by the Wetland District office by the close of business March 1, 2008.

Hamden Slough NWR was established in 1989 to restore and protect 8,565 acres of native prairie and wetlands on the historic range of the northern tallgrass prairie of western Minnesota. This site was identified as 5,944 fee title acres in a refuge designated core area, and 2,621 acres on a surrounding lease – easement zone.

Hamden Slough NWR currently holds 3,402 acres in fee title in west central Minnesota, within Becker County. The Refuge is about 7 miles northwest of Detroit Lakes, Minnesota and just east of the Buffalo River. The nearest communities are Audubon, Minnesota, about 1 mile southwest of the southern boundary of the refuge, and Callaway, Minnesota, about 3 miles east of the northern boundary. The refuge is rectangular with the approximate dimensions of 10 miles in the north-south direction by about 1.3 miles in the east-west direction

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 95-million-acre National Wildlife Refuge System, which encompasses 545 national wildlife Refuges, thousands of small wetlands and other special management areas. It also operates 69 national fish hatcheries, 63 Fish and Wildlife Management offices and 81 ecological services field stations. The agency enforces federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their conservation efforts. It also oversees the Federal Assistance program, which distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

## **Chapter 8**

### **References Cited**

- Higgins, K.F., A.D. Kruse, and J.L. Piehl. Effects of fire in the Northern great plains. EC 761. SDSU, Brookings, SD 48pp.
- McNab, W. H. and P. E. Avers. 1994. Ecological subregions of the United States: Section descriptions. Administrative Publication WO-WSA-5. Washington, DC: U.S. Dept. of Agriculture, Forest Service. 267 pp.
- Kjellsen, M.L. and K.F. Higgins. 1990. Grasslands: Benefits of management by fire. FS 857. SDSU, Brookings, SD



## Chapter 9

### Intra-Service Section 7 Biological Evaluations

Originating Person: Cathy Henry Date Submitted: 1/30/08

Telephone Number: 218-847-4431

- I. **Service Program and Geographic Area or Station Name:**  
Detroit Lakes Wetland Management District
- II. **Flexible Funding Program** (e.g. Joint Venture, etc) if applicable:
- III. **Species/Critical Habitat:** List federally-listed, proposed, and candidate species or designated or proposed critical habitat that occur or may occur within the action area:  
Piping plover. No other threatened or endangered species occur in Becker County, MN
- IV. **Location:** Location of the project including County, State and TSR (township, section & range):  
Hamden Slough NWR, Becker county, MN
- . **Project Description:** Describe proposed project or action or, if referencing other documents (e.g. the Grant Proposal), prepare an executive summary (attach additional pages as needed):  
The proposed action is implementation of the preferred alternative of an Environmental Assessment for the Wildland Fire Management Plan for Hamden Slough NWR (see attached) that includes prescribed burning and suppression of wildfires.
- VI. **Determination of Effects:**
  - (A) **Description of Effects:** Describe the effects of the action(s) on the species and critical habitats listed in item III. For each section 7 determination made below, attach an explanation of such determination for all applicable species or critical habitat. Documentation should justify your determination.  
  
A piping plover was observed as an incidental species on Hamden Slough NWR in 1999. It is not known to nest or otherwise occupy the Refuge. Therefore, there are no effects from conducting prescribed burns on the Refuge. If the plover were present, it would likely be in habitats that would have little fuel and would be unlikely to be impacted by a fire.
  - (B) **Determination:** Determine the anticipated effects of the proposed project on species and critical habitats listed in item III. Check all applicable boxes and list the species associated with each determination.

**Response requested**

*"No Effect"* This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. List species applicable to this determination (or attach a list):

\_\_\_\_\_ Concurrence  
(optional)

*"May Affect but Not Likely to Adversely Affect species/critical habitat"* This determination is appropriate when the proposed project is not likely to adversely impact individuals of listed species or designated critical habitat of such species. List species applicable to this determination (or attach a list):

\_\_\_\_\_ Concurrence

*"May Affect and Likely to Adversely Affect species/critical habitat"* This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species or designated critical habitat of such species. List species applicable to this determination (or attach a list):

\_\_\_\_\_ Formal  
Consultation

*"Not Likely to Jeopardize candidate or proposed species/critical habitat"* This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. List species applicable to this determination (or attach a list):

\_\_\_\_\_ Concurrence  
Informal Conference  
optional

*"Likely to Jeopardize candidate or proposed species/critical habitat"* This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. List species applicable to this determination (or attach a list):

\_\_\_\_\_ Formal Conference

\_\_\_\_\_  
Signature Date  
[Supervisor at originating station]

**Reviewing Ecological Services Office Evaluation** (check all that apply):

A. **Concurrence** \_\_\_\_\_ **Nonconcurrence** \_\_\_\_\_

Explanation for nonconcurrence:

B. Formal consultation required \_\_\_\_\_  
List species or critical habitat unit

C. Conference required \_\_\_\_\_  
List species or critical habitat unit

\_\_\_\_\_  
Signature [Reviewing ES Office Supervisor]

Date

Name of Reviewing ES Office