

Chapter 1: Introduction, Purpose and Need, Planning Background



Algific slope located on Driftless Area NWR. USFWS

1.1 Introduction

This document is an integrated Comprehensive Conservation Plan (CCP) and Environmental Impact Statement (EIS) for the Driftless Area National Wildlife Refuge (Refuge). It will follow the basic and accepted format for an EIS and each alternative presented will contain the core of a CCP, namely goals, objectives, and strategies. Since it is an integrated document designed to meet the requirements for both an EIS and a CCP, some sections in the EIS format were expanded (notably Chapter 1, Planning Background) to meet this dual function. In addition, various referenced appendices relate to either the EIS, CCP, or both, as applicable.

The Driftless Area NWR was established in 1989 under the authority of the Endangered Species Act of 1973 for the protection and recovery of the federally threatened Northern monkshood plant (*Aconitum noveboracense*) and endangered Iowa Pleistocene snail (*Discus macclintocki*). These species primarily occur on a rare and fragile habitat type termed algific talus slopes (cold air slopes). The habitat harbors species that require a cold environment, some of which date from the ice age. The habitat is described in more detail in Chapter 3. These are areas where cold underground air seeps onto slopes to provide a constant cold microenvironment.

The National Wildlife Refuge System Improvement Act of 1997 requires all national wildlife refuges to complete a Comprehensive Conservation Plan to describe Refuge management for a 15 year time frame. The Comprehensive Conservation Plan and preferred alternative described herein will describe direction for the Refuge for the next 15 years (2005-2020) aimed at conserving enough populations of the above species to reach recovery goals, as well as conserving unique algific talus slope habitat and the associated community of rare plants and animals. The lands that are part of the Refuge also harbor other wildlife. Therefore, this plan describes general habitat restoration and management for other species. Refuges are for people, too. We describe how we envision a balance of public use and habitat preservation, within the National Wildlife Refuge System management principle that wildlife comes first. Detailed habitat, land acquisition, and visitor services management plans will be developed to provide further guidance for management activities.

We prepared this Environmental Impact Statement using 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 we describe three alternatives for future Refuge management, the environmental consequences of each alternative, and our preferred management direction. We designed each alternative as a mix of fish and wildlife habitat prescriptions and wildlife-dependent recreational opportunities, and then we selected our alternative based on its environmental consequences and its ability to achieve the Refuge's purpose.

1.2 Purpose and Need for Action

1.2.1 Purpose

The purpose of this EIS is to adopt and implement a CCP for Driftless Area NWR. The Service is considering a range of alternatives of how best to manage the Refuge. A second purpose of the EIS is to present and adopt a Fire Management Plan (FMP) for the Refuge.

CCPs are designed to guide the management and administration of national wildlife refuges for a 15 year period, help ensure that each refuge meets the purpose for which it was established, and contribute to the overall mission of the Refuge System. The CCP helps describe a desired future condition of the Refuge, and provides both long-term and day-to-day guidance for management actions and decisions. It provides both broad and specific policy on various issues, sets goals and measurable objectives, and outlines strategies for reaching those objectives. A CCP also helps communicate to other agencies, and the public, a management direction for a refuge to meet the needs of wildlife and people.

A long-term management direction does not currently exist for Driftless Area NWR. Management is currently guided by endangered species recovery plans, general policies, and shorter-term plans. The Refuge Improvement Act of 1997 mandates that the Secretary of the Interior, and thus the Service, prepare CCPs for all units of the National Wildlife Refuge System by October, 2012. In addition to this mandate, there are several reasons why preparation of a CCP is needed at this time. There are new threats to endangered species habitat, new laws and policies have been put in place, new scientific information is available, and levels of public use and interest have increased.

The National Environmental Policy Act of 1969 requires that federal agencies, and thus the Service, follow basic requirements for major actions significantly affecting the quality of the human environment. These requirements are: 1) consider every significant aspect of the environmental impact of a proposed action, 2) involve the public in its decision-making process when considering environmental concerns, 3) use a systematic, interdisciplinary approach to decision making, and 4) consider a reasonable range of alternatives. This EIS documents those requirements and provides the necessary information and analysis to the decision-maker or responsible official.

Finally, the planning process is an excellent way to inform and involve the general public, state and federal agencies, and non-government groups who have an interest, responsibility, or authority in the management or use of certain aspects of Driftless Area NWR.

1.2.2 Need

The CCP that ultimately arises from this Final CCP and EIS will help ensure that management and administration of the Refuge meets the mission of the Refuge System, the purpose for which the Refuge was established, and the goals for the Refuge. The mission, purpose, and goals are considered the needs or benchmarks for defining reasonable alternatives presented in Chapter 2. The alternatives, along with an evaluation of consequences in Chapter 4, will form the basis for a

decision. These three needs are summarized below. More detail on issues related to these needs can be found in Section 1.10 Planning Issues.

Need 1: Contribute to the Refuge System Mission. The mission of the National Wildlife Refuge System set forth in the Refuge Improvement Act of 1997 is:

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

Need 2: Help Fulfill the Refuge Purpose. The Refuge purpose is defined by the Endangered Species Act of 1973; that is: to conserve fish or wildlife which are listed as endangered or threatened species or plants (16 USC 1534 ESA). Achievement of the Refuge purpose will help reach endangered species recovery goals that will lead to delisting.

The Refuge has reached its existing approved acquisition acreage. Since Refuge establishment, additional information indicates the need to expand the Refuge geographic area and acreage, as well as to address ecological issues related to protection of endangered species.

Need 3: Help Achieve Refuge Goals.

Goal 1. Habitat: Conserve endangered species habitat and contribute to migratory bird and other wildlife habitats within a larger landscape. Related needs are to:

- # permanently conserve additional endangered species habitat to achieve delisting of the target species.
- # permanently conserve additional habitat for glacial relict species of concern to preclude listing
- # manage invasive species
- # restore grassland and forest habitats
- # assist others to manage off Refuge impacts to endangered species habitat

Goal 2. Species management: Manage and protect endangered species, other trust species, and species of management interest based on sound science through identification and understanding of algific slope communities and associated habitats. Related needs are to:

- # ensure all algific slopes and endangered species locations are known
- # inventory plants and animals associated with algific talus slopes
- # update the recovery plans for Iowa Pleistocene snail and Northern monkshood
- # determine the amount of buffer area needed to adequately protect algific slopes
- # assess deer impacts to the Refuge and endangered species

Goal 3. Visitor Services: Visitors understand and appreciate the role of the Refuge in protecting endangered species. Related needs are to:

- # provide wildlife-dependent recreation while protecting endangered species habitat
- # provide environmental education

1.3 Decision Framework

The Service's Regional Director (Region 3) in the Twin Cities, Minnesota is the responsible official for approving the Final CCP and EIS in a Record of Decision. The Record of Decision will identify the selected alternative that will become the Final CCP. The selected alternative will be one of the alternatives in this Final CCP and EIS, although the final decision may reflect modification of certain elements of the alternatives based on public review and comment. The Final EIS contains individual substantive comments, or a summary of like-comments, received from the public, agencies, and other interested parties, along with a Service response.

1.4 Planning Background

1.4.1 Recovery Plans

The goal of the Endangered Species Act is the recovery of listed species to levels so that protection under the Act is no longer necessary. The U.S. Fish and Wildlife Service develops and implements recovery plans for species that are listed as threatened and endangered. These plans outline tasks necessary to stabilize and recover listed species.

1.4.1.1 Iowa Pleistocene Snail

The Iowa Pleistocene snail (*Discus macclintocki*) was listed as endangered in 1977 because of the small number of populations, small total population, and its very restricted and fragile habitat type. It is also listed as endangered by the states of Iowa and Illinois. The U.S. Fish and Wildlife Service completed a recovery plan in 1984 written by Dr. Terry Frest. At that time the snail was known from 18 small sites in Clayton and Dubuque Counties, Iowa and Jo Daviess County, Illinois. Fossil records indicate that the snail was once widely distributed in the Midwest during the Pleistocene era (approximately 300,000-500,000 YBP). It is therefore considered a glacial relict species and its habitat is restricted to cold algific talus slopes (see Section 3.2.2 for a description). Threats to the species and its habitat listed in the recovery plan are human disturbance, logging, grazing, road building, quarrying, sinkhole filling, pesticides, house construction, and natural factors such as rock slides and stream undercutting or weather related factors. An additional, more recent threat is invasive species.

The main features of the recovery plan are to gain control of algific talus slopes where the snail occurs and protect them from human disturbances. Restoration and monitoring are also stated as being important. The Iowa Pleistocene snail can be considered for reclassification from endangered to threatened if permanent protection of 16 of the existing colonies can be achieved and documentation of stable or increasing populations can be done. Delisting can be considered if stringent protection of at least 24 or more sufficiently dispersed viable breeding colonies is obtained. A viable population from a genetic standpoint would be a breeding population of 500; however, further study on this number is needed. Dr. Frest states that it is likely other sites remain to be found. Indeed, further surveys by him and others in the 1980s discovered a new total of 37 sites in Clayton, Clinton, Fayette, Delaware, Dubuque, Jackson Counties, Iowa and Jo Daviess County, Illinois.

The basic premise of the recovery plan is to protect all of the sites with viable breeding colonies. Even though the number of sites has since increased, it still is not large and nearly all should be



Golden saxifrage. Bob Clearwater

protected for delisting. The recovery plan needs updating to include all known sites, new monitoring information, new threats, and to refine downlisting and delisting criteria. Although 22 snail sites currently have some protection, 12 of these need additional protection of algific slopes and/or sinkholes to be considered fully protected for delisting purposes. The remaining 15 sites have no protection. Some of the largest populations are not protected and the species needs protection across its range to preserve genetic differences and to protect against catastrophic events in one area.

1.4.1.2 Northern monkshood

Northern monkshood (*Aconitum noveboracense*) was listed as threatened in 1978 because of its limited range and habitat preference. It is also listed as threatened by the states of Iowa, Wisconsin, and New York and endangered in Ohio. A recovery plan was completed in 1983. It was one of the first plant species listed under the Endangered Species Act. Monkshood requires a cold soil environment associated with cliffs, talus slope, algific slope, or spring/headwater stream situations. Its habitat is typically in rugged areas and on fragile cliffs or slopes that cannot tolerate a great deal of disturbance. In 1983, there were 24 sites known in Iowa, Wisconsin, Ohio, and New York. The authors acknowledged that Iowa had the greatest potential for discovery of new sites. There are now 83 known sites in Iowa, 18 in Wisconsin, two in New York, and one in Ohio. Sites vary greatly in population size from just a few plants to thousands of plants. Threats are dams and reservoirs, road construction, power line maintenance, logging, quarrying, grazing, developments, scientific overcollecting, and natural events. On algific slope sites, disturbance or filling of the sinkholes is also a threat. More recently, invasive species, and in particular garlic mustard, have become a threat as well.

The primary goal of the recovery plan is to provide a basis for delisting by providing security for all known northern monkshood locations against damage or destruction of the existing habitats. This security could be in various forms of acquisition, easement, fencing, landowner awareness. Additional goals were searches for new sites, much of which was completed in the 1980s, and propagation research.

This recovery plan also needs revision to include all of the known sites, more recent research, and more precise downlisting and delisting criteria. The viable population size for protection efforts needs to be determined. Currently there are 45 monkshood sites in some form of permanent protection. Some of these are small populations. Similar to snail sites, many of the protected sites need additional slope/cliff, sinkhole, or buffer area protection to be considered fully protected for delisting purposes. Monkshood also needs additional protection across its range.

1.4.1.3 Leedy's Roseroot

Leedy's roseroot was listed as threatened in 1992 because of its low numbers, few and disjunct populations, and specialized cliffside habitat. It is also listed as threatened by the state of Minnesota. The recovery plan was approved in 1998. The plant is found in only specialized Cliffside habitat. In Minnesota, it occurs on moderate cliffs which are cooled by air exiting underground passages (see Section 3.2.2). There are only three populations in New York and four in Minnesota. One site in Minnesota is owned by the Department of Natural Resources. Besides its disjunct occurrences and low numbers, the major threats are on-site disturbances and groundwater contamination.

Leedy's roseroot may be considered for delisting when all three privately owned Minnesota populations are protected by conservation easements or fee title acquisition by a public agency or private conservation organization, the contamination threat is removed from the fourth Minnesota population, and specific protection measures are taken for New York populations. Protected populations must be geographically distinct, self-sustaining, and have been protected for five consecutive years by measures that will remain effective following delisting. Additional tasks needed include locating new populations, determining the hydrologic relationship of cliffs with upland areas, securing funding for site protection, securing landowner involvement, implementing monitoring, providing public education, and maintaining a genetic bank.

1.4.2 Previous Acquisition Planning

The original land protection plan (LPP, U.S. Fish and Wildlife Service 1986) for the Refuge outlined the purposes, objectives, protection alternatives, and proposed action for the Refuge related to land acquisition. The LPP called for protection of approximately 25 sites cumulatively containing approximately 700 acres in eight counties (Figure 1). A project of this size was expected to bring approximately 70 percent of the known Northern monkshood population and 75 percent of the known Iowa Pleistocene snail population under direct Service protection.

More locations occupied by these species have been discovered since the LPP and recovery plans were written. Currently known sites include 83 Northern monkshood sites in Iowa and 18 in Wisconsin. There are 36 known snail sites in Iowa and one in Illinois. Forty-five of the monkshood sites and 22 of the snail sites are in some form of permanent protection including Refuge, state, county, and Nature Conservancy lands.

In 1993, a preliminary project proposal (PPP) was approved by the Director of the Fish and Wildlife Service to develop a detailed plan to acquire up to an additional 6,220 acres in 25 counties in Illinois, Iowa, Minnesota, and Wisconsin to protect enough monkshood and snail sites to meet recovery plan goals. The PPP also added acquisition areas for the plant, Leedy's roseroot (*Sedum integrifolium ssp leedyi*), which was listed as threatened in 1992. The plant grows on similar moderate cliff habitat on four sites in southeast Minnesota. The primary recovery goal for Leedy's roseroot is permanent protection of all known sites on which it occurs (U.S. Fish and Wildlife Service 1998).

The PPP also aimed to protect other rare species associated with algific talus slopes and similar rare habitats. The plants golden saxifrage (*Chrysozplenium iowense*) and sullivantia (*Sullivantia sullivantia*) and eight species of glacial relict land snails are associated with algific talus slopes and similar habitats throughout the Driftless Area. At that time these were Category 2 candidate species for federal listing¹. Some of these species occur only in the Driftless Area, or the majority of their populations occur in the Driftless Area. Known locations were documented during surveys done in the 1980s. Since that time, sullivantia was found to occur more commonly on cliff habitats in Wisconsin and Iowa. It is now only state listed in Illinois and Minnesota and is not a U.S. Fish and Wildlife Service species of concern. It was first thought to be specific to algific talus slopes and moderate cliffs, but is now considered relatively common on these, and other cliff habitats. Some of the counties proposed in the 1993 PPP were included only for protection of sullivantia and are no longer considered areas for potential acquisition (Figure 1). The other species are included in a preliminary draft species of concern list for Region 3. None are candidate species at this time. An updated status assessment for the snail species is currently being completed by the Service's Region 3 Division of Endangered Species.

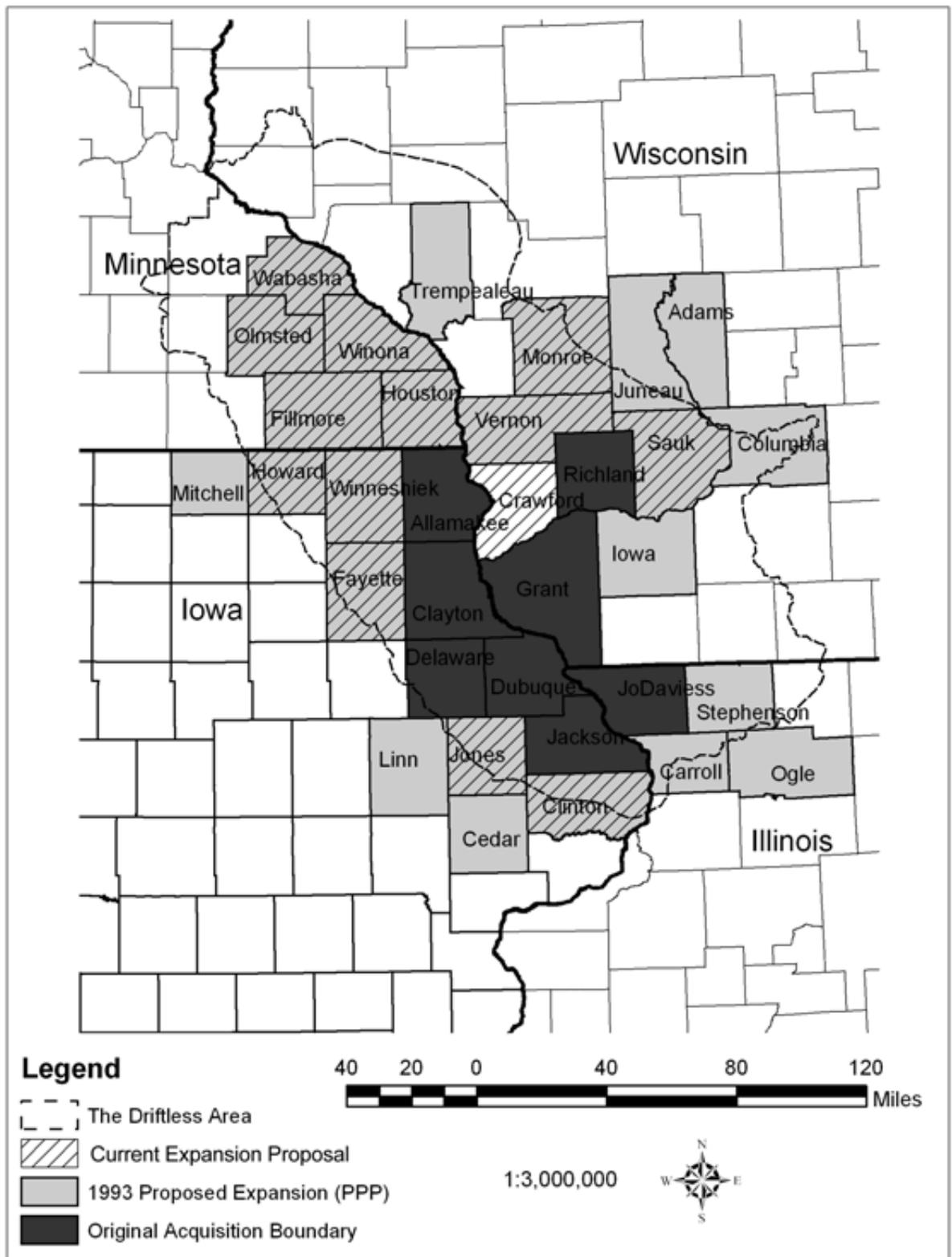
Mitchell County in Iowa contains only two sites which are already protected in a county park. Therefore, this county was removed from the current expansion proposal. Crawford County, Wisconsin was added to the current expansion proposal because of its potential to contain habitat for endangered species and species of concern.

1.4.3 Overview of the Planning Process

This CCP process began in April 2002 as part of the Upper Mississippi River NWR Complex CCP. The Complex consists of four districts on the Mississippi River, Trempealeau NWR in Wisconsin, and Driftless Area NWR in Iowa. Because of the different purpose, land base, and management needs of Driftless Area NWR, it is treated as a separate CCP following much of the same process and timeline as the Upper Mississippi Complex CCP.

1. The Service discontinued the use of a list for "category 2 candidates" in 1996. None of these species are currently candidates for listing under the Endangered Species Act.

Figure 1: Refuge Land Acquisition Boundaries



We are required to do detailed planning (Service policy) when we anticipate adding more than 40 acres to a refuge. Because the Refuge is proposing to expand its acquisition boundary in two of the alternatives, we completed a Land Protection Plan (Appendix I), which gives the details of the proposed expansion. The Refuge did not pursue detailed planning under the 1993 PPP until the CCP process began in 2002. The CCP effort was the logical time to examine all management and land protection issues related to the Refuge. The LPP addresses the total Refuge acreage desired for the life of the project and is a longer term plan than the CCP.

A stakeholder group was first formed with State agencies and the U.S. Army Corps of Engineers. Meetings with stakeholders were held to introduce the CCP and identify management issues and concerns. Because of the geographic area covered by the Upper Mississippi River Complex as well as the Driftless Area NWR, several public scoping meetings were held in the fall of 2002. Meetings about the Driftless Area NWR were held in Dubuque, Elkader, and Lansing, Iowa, and Prairie du Chien, Wisconsin. The purpose of these scoping meetings was to gather the public's issues and concerns. A 'Manager for a Day' workshop was held in February 2003 in Elkader, Iowa, to develop alternatives to the issues raised by the public and Refuge staff. Three project updates were also sent to approximately 2,600 citizens, non-governmental organizations, media, and legislators.

1.4.4 Legal and Policy Framework

Driftless Area NWR is managed and administered as part of the National Wildlife Refuge System within a framework of organizational setting, laws, and policy. Key aspects of this framework are outlined below. A list of other laws and executive orders that have guided preparation of the CCP and EIS, and guide future implementation, are provided in Appendix E.

The Driftless Area NWR is managed as part of the Upper Mississippi River National Wildlife and Fish Refuge Complex. The complex is completing a Comprehensive Conservation Plan for each unit, including Upper Mississippi River NWR, Trempealeau NWR, and Driftless Area NWR. Because of the different purpose, land base, and management needs of Driftless Area NWR, this CCP is separate but following much the same time line and process as the other CCPs.

1.4.5 National Wildlife Refuge System Mission, Goals, and Principles

The mission of the U.S. Fish and Wildlife Service is to work with others to conserve, protect, and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people.

The U.S. Fish and Wildlife Service is the primary Federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. Specific responsibilities include enforcing Federal wildlife laws, managing migratory bird populations, restoring nationally important fisheries, administering the Endangered Species Act, and restoring wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System.

1.4.6 Goals of the National Wildlife Refuge System

The Refuge System had its beginning in 1903 when President Theodore Roosevelt issued an Executive Order to set aside tiny Pelican Island in Florida as a refuge and breeding ground for birds. From that small beginning, the Refuge System has become the world's largest collection of lands specifically set aside for wildlife conservation. The administration, management, and growth of the Refuge System are guided by the following goals (Director's Order, January 18, 2001):

- # To fulfill our statutory duty to achieve refuge purposes and further the System mission.
- # To conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.

- # To perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.
- # To conserve a diversity of fish, wildlife, and plants.
- # To conserve and restore where appropriate representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- # To foster understanding and instill appreciation of native fish, wildlife, and plants, and conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.



Northern Flicker: USFWS

The National Wildlife Refuge System is a network of more than 540 refuges encompassing 95 million acres of lands and waters, 41 wetland management districts that are responsible for 2.4 million acres of Waterfowl Production areas, and 50 coordination areas covering 317,000 acres that are managed by State fish and wildlife agencies under cooperative agreements. Refuge System lands span the continent from Alaska's Arctic tundra to the tropical forests in Florida and from the secluded atolls of Hawaii to the bogs of Maine.

National wildlife refuges are established for different purposes. Most refuges have been established for the conservation of migratory birds, while some have been established to provide habitat for endangered species. Others have been formed to protect and propagate large mammals such as bison, elk, and desert bighorn sheep. Refuge habitats consist of a great diversity of plants and animals.

Refuges also provide unique opportunities for people. When it is compatible with wildlife and habitat needs, refuges can be used for wildlife-dependent activities such as hunting, fishing, wildlife observation, photography, environmental education and environmental interpretation. Many refuges have visitor centers, wildlife trails, automobile tours, and environmental education programs. Nationwide, an estimated 39.5 million people visited national wildlife refuges in 2003.

The National Wildlife Refuge System Improvement Act of 1997 established many mandates aimed at making the management of national wildlife refuges more consistent. The preparation of comprehensive conservation plans is one of those mandates. The legislation requires the Secretary of the Interior to ensure that the mission of the National Wildlife Refuge System and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity, and environmental health of the Refuge System.

1.4.7 The National Wildlife Refuge System Improvement Act of 1997 and Related Policy

The Improvement Act of 1997 amended the National Wildlife Refuge System Administrative Act of 1966 and became a true organic act for the System by providing a mission, policy direction, and management standards. Below is a summary of the key provisions of this landmark legislation, and subsequent policies to carry out the Act's mandates.

Established Broad National Policy for the Refuge System:

- # Each refuge shall be managed to fulfill the mission and its purposes.
- # Compatible wildlife-dependent recreation is a legitimate and appropriate use.

- # Compatible wildlife-dependent uses are the priority public uses of the System.
- # Compatible wildlife-dependent uses should be facilitated, subject to necessary restrictions.

Directed the Secretary of the Interior to:

- # Provide for the conservation of fish, wildlife, and plants within the System.
- # Ensure biological integrity, diversity, and environmental health of the System for the benefit of present and future generations.
- # Plan and direct the continued growth of the System to meet the mission.
- # Carry out the mission of the System and purposes of each refuge; if conflict between, purposes takes priority.
- # Ensure coordination with adjacent landowners and the States.
- # Assist in the maintenance of adequate water quantity and quality for refuges; acquire water rights as needed.
- # Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the System.
- # Ensure that opportunities for compatible wildlife-dependent recreation are provided.
- # Ensure that wildlife-dependent recreation receive enhanced consideration over other uses of the System.
- # Provide increased opportunities for families to enjoy wildlife-dependent recreation.
- # Provide cooperation and collaboration of other federal agencies and States, and honor existing authorized or permitted uses by other Federal agencies .
- # Monitor the status and trends of fish, wildlife, and plants in each refuge.

Provide Compatibility of Uses Standards and Procedures:

- # New or existed uses should not be permitted, renewed, or expanded unless compatible with the mission of the System or the purpose(s) of the refuge, and consistent with public safety.
- # Wildlife-dependent uses may be authorized when compatible and not inconsistent with public safety.
- # The Secretary shall issue regulations for compatibility determinations.

Planning:

- # Each unit of the Refuge System shall have a Comprehensive Conservation Plan completed by 2012.
- # Planning should involve adjoining landowners, State conservation agencies, and the general public.

1.4.7.1 Compatibility Policy

No uses for which the Service has authority to regulate may be allowed on a unit of the Refuge System unless it is determined to be compatible. A compatible use is a use that, in the sound professional judgment of the refuge manager, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge. Managers must complete a written compatibility determination for each use, or collection of like-uses, that is signed by the manager and the Regional Chief of Refuges in the respective Service region. A list of compatibility determinations applicable to uses described in this Final CCP and EIS is included in Appendix D.

1.4.7.2 Biological Integrity, Diversity, and Environmental Health Policy

The Service is directed in the Refuge Improvement Act to “ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present

and future generations of Americans...” The biological integrity policy helps define and clarify this directive by providing guidance on what conditions constitute biological integrity, diversity, and environmental health; guidelines for maintaining existing levels; guidelines for determining how and when it is appropriate to restore lost elements; and guidelines in dealing with external threats to biological integrity, diversity and health.

1.4.8 Wilderness Review

As part of the CCP process, we reviewed the lands within the boundaries of Driftless Area NWR for wilderness suitability. No lands were found suitable for designation as Wilderness as defined in the Wilderness Act of 1964. The Refuge does not contain 5,000 contiguous roadless acres, nor does the Refuge have any units of sufficient size to make their preservation practicable as Wilderness.

1.4.9 Cultural Resources

The National Wildlife Refuge System Improvement Act of 1997 requires consideration of archeological and cultural values as part of the planning for each Refuge. A cultural resources management overview and plan was conducted and completed in November 2002 (Commonwealth Cultural Resources Group, Inc.) under contract with the U.S. Fish and Wildlife Service. The overview included counties with existing Refuge lands and counties with potential acquisition areas. They reviewed lands in Allamakee, Clayton, Delaware, Dubuque, Fayette, and Jackson counties, Iowa and Grant County, Wisconsin. Two historic archeological sites were identified on the Refuge. The location of 27 previously identified archaeological sites within one mile of the study units and statistical analysis of other data indicates a high probability for unrecorded sites on the Refuge.

1.5 Other Conservation Initiatives

1.5.1 Upper Mississippi River/Tallgrass Prairie Ecosystem

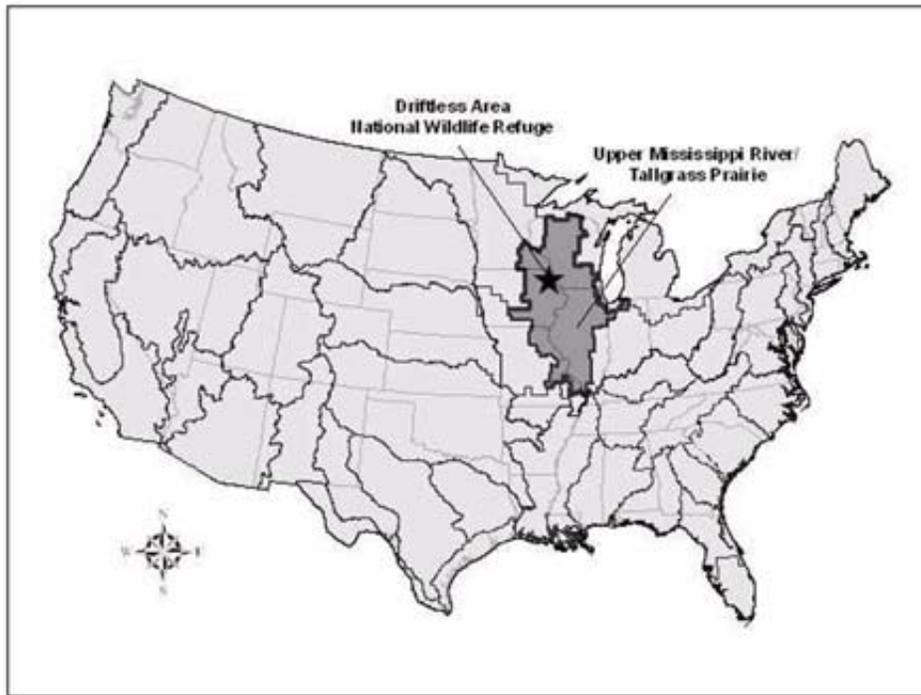
The U.S. Fish and Wildlife Service has implemented an ecosystem approach to fish and wildlife conservation. Under this approach the Service’s goal is to contribute to the effective conservation of natural biological diversity through perpetuation of dynamic, healthy ecosystems by using an interdisciplinary, coordinated strategy to integrate the expertise and resources of all stakeholders.

Driftless Area NWR lies within the Upper Mississippi River/Tallgrass Prairie Ecosystem (Figure 2). The Upper Mississippi River/Tallgrass Prairie Ecosystem is one of eight ecosystems that comprise the Great Lakes-Big Rivers Region (Region 3) of the U.S. Fish and Wildlife Service. The Upper Mississippi River/Tallgrass Prairie Ecosystem is a large and ecologically diverse area that encompasses land in the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The Mississippi River bisects the Ecosystem east and west. Major rivers in the Ecosystem include the Minnesota, Chippewa, Black, Wisconsin, Iowa, Rock, Skunk, Des Moines, Illinois, and Kaskaskia (Figure 3).

1.5.2 Migratory Bird Conservation Initiatives

U.S. Fish and Wildlife Service and other conservation plan priorities for migratory birds, such as Partners in Flight, are used to develop management guidelines for birds. The Refuge is within the Upper Great Lakes Plain physiographic area 16 as identified by the Partners in Flight Bird

Figure 2: Upper Mississippi River/Tallgrass Prairie Ecosystem



Conservation Plan (Knutson et al. 2001) and Bird Conservation Region 23 (Prairie Hardwoods Transition) identified by the North American Bird Conservation Initiative (Figure 4).

Iowa, Minnesota, Wisconsin, and Illinois are currently writing state wildlife conservation plans. Wisconsin has a Bird Conservation Plan, and Minnesota is working towards one. The Refuge will incorporate elements of these plans into management when possible.

1.5.3 Region 3 Fish and Wildlife Resource Conservation Priorities

The Government Performance and Results Act (GPRA) required the U.S. Fish and Wildlife Service to identify its most important functions and to direct its limited fiscal resources toward those functions. From 1997 to 1999 within Region 3, a group looked at how best to identify the most important functions of the Service within the region. The group recognized that the Service has a complex array of responsibilities specified by treaties, laws, executive orders, and judicial opinions that dwarf the agency's budget. The group recognized that at least two approaches are possible in identifying conservation priorities – habitats and species. The group chose to focus on species because 1) species represent biological and genetic resources that cannot be replaced; 2) a focus on species conservation requires a concurrent focus on habitat; and 3) by focusing on species assemblages and identifying areas where ecological needs come together the Service can select the few key places where limited efforts will have the greatest impact. Representatives of the migratory bird, endangered species, and fisheries programs in Region 3 identified the species that require the utmost attention given our current level of knowledge. Representatives prioritized the species based on biological status (endangered or threatened, for example), rare or declining levels, recreational or economic value, or “nuisance” level. The group pointed out that species not on the prioritized list are important too. But, when faced with the needs of several species, the Service should emphasize the

Figure 3: Watershed Surrounding Driftless Area NWR

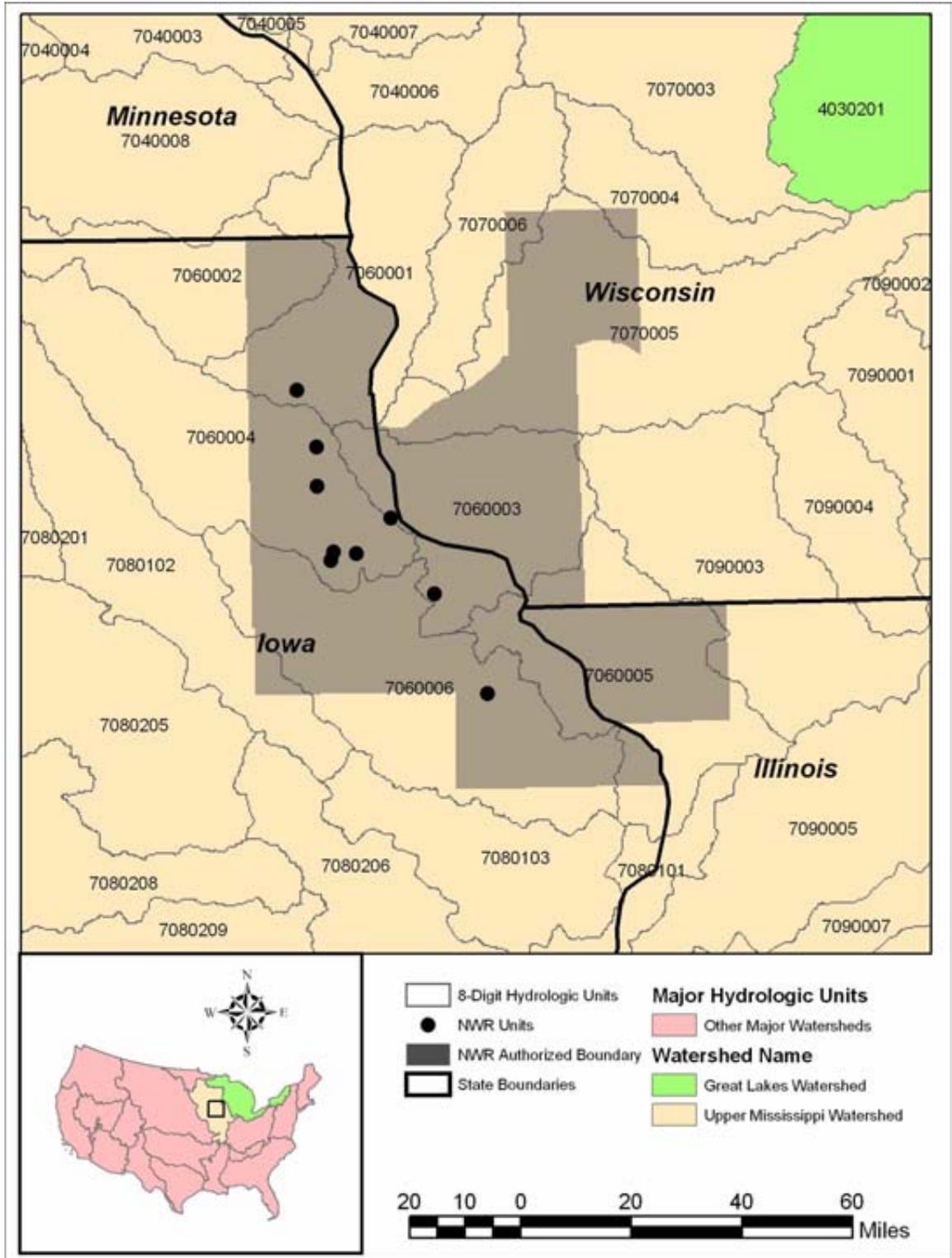
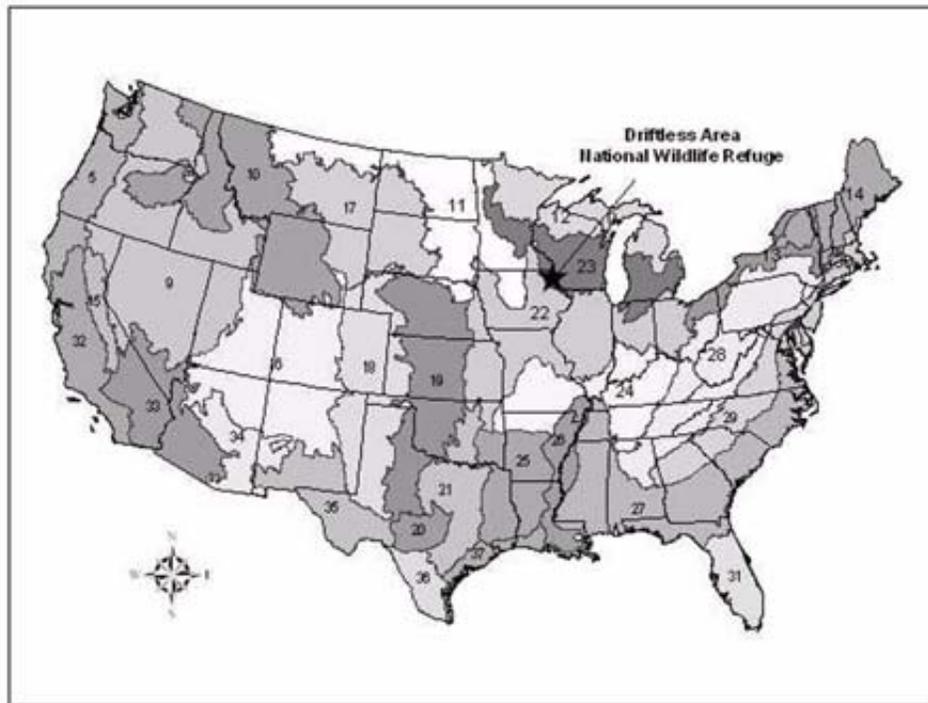


Figure 4: Bird Conservation Regions, Region 3 of the USFWS



species on the priority list. The Iowa Pleistocene snail, Northern monkshood, Leedy’s roseroot, and glacial relict snails are among the Regional Resource Conservation Priorities.

1.5.4 Other Plans

The Nature Conservancy (TNC) completed a Prairie-Forest Border Ecoregion Plan in 2001. The Iowa Pleistocene snail, other glacial relict snails, Northern monkshood, and threatened Leedy’s roseroot were identified as conservation targets in that plan. Algific talus slopes were identified as ecologically important areas by TNC. The Nature Conservancy Plan also identified Important Bird Breeding Areas in northeast Iowa that include potential Refuge acquisition areas. Elements of the TNC Plan, primarily for land protection, are related to habitat management for the Refuge.

The Driftless Area Initiative was formed in the last few years under the auspices of the USDA’s Resource Conservation and Development program as a four-state partnership. This project encourages multi-state collaboration and cooperation to enhance and restore this region’s ecology, economy, and cultural resources in balanced, integrated fashion. The Driftless Area Initiative will have various projects related to Refuge goals. One current project is to increase and promote forest habitat for neotropical migratory birds in the four-state region. Refuge land acquisition and visitor services goals also mesh with goals of the Driftless Area Initiative for improving water quality and improving public knowledge of the Driftless Area as a special and unique ecoregion.

Table 1: Driftless Area NWR Units in Iowa (2004)

Unit Name	Acres	County	Year Acquired	Species present
Bankston	57	Dubuque	1991	Iowa Pleistocene snail
Cow Branch	110	Clayton	1996	Iowa Pleistocene snail Northern monkshood
Fern Ridge	207	Clayton	1991	Iowa Pleistocene snail
Hickory Creek	17	Allamakee	2001	Northern monkshood
Howard Creek	209	Clayton	1989/1990	Iowa Pleistocene snail Northern monkshood
Kline Hunt Hollow	6	Clayton	1991	Northern monkshood
Lytle Creek	20	Jackson	1991	Northern monkshood
Pine Creek	140	Clayton	2002	Northern monkshood
Steeles Branch	15	Clayton	1990	Northern monkshood

1.6 Brief History of Refuge Establishment, Acquisition, and Management

1.6.1 Refuge Establishment and Acquisition

The Driftless Area NWR was established in 1989 under the authority of the Endangered Species Act of 1973 for the protection and recovery of the federally threatened Northern monkshood and endangered Iowa Pleistocene snail. The Refuge currently consists of nine units in Allamakee, Clayton, Dubuque, and Jackson Counties in northeast Iowa (Figure 5). The Refuge encompasses 781 acres, with individual units ranging from 6 to 209 acres (Table 1). The original authorized acquisition area for the Refuge was approximately 700 acres in eight counties in Iowa, Illinois, and Wisconsin (Figure 1) (U.S. Fish and Wildlife Service 1986). Section 1.4.2 has additional background information on Refuge acquisition planning. The most recent acquisitions were through land exchanges in 2001 and 2002. The Refuge has reached its approved acquisition acreage.

The purposes and goals of the Refuge are directly tied to recovery plans which describe the steps needed to recover and conserve the Northern monkshood and Iowa Pleistocene snail (U.S. Fish and Wildlife Service 1983, 1984). Because of the fragile nature of their habitat and the low number of populations for each of these species, the primary recovery goal for both species is protecting and conserving the majority of remaining populations and their habitat. The primary threats to the habitat are grazing, logging, sinkhole filling, erosion, pesticides, invasive species, and development. Therefore, acquisition also includes land surrounding the endangered species habitat to provide a buffer area from some of these threats.

1.6.2 Management History

A management prospectus was completed by the Refuge in 1990 (U.S. Fish and Wildlife Service) to guide Refuge management. At that time, the Refuge consisted of the Howard Creek (208 acres) and Steeles Branch (15 acres) units. The prospectus outlined the need for strict protection of the algific slopes including fencing and signing, a low public use profile, and no development of public use facilities. Buffer areas to protect sinkholes, and cleaning of debris from sinkholes were also mentioned. Management of habitat surrounding algific slopes was to be through natural succession

Figure 5: Location of Driftless Area NWR in Iowa



or planting, depending on the site. Most habitat management has occurred on the Howard Creek unit. Two former agricultural fields (51 acres) at the Howard Creek unit were planted with cool season grasses after cooperative farming ended around 1992. Over the years, box elder trees invaded these fields. Box elder trees and other invasive species were controlled with cooperative farming beginning in 1999 and 51 acres have been recently planted to native prairie grasses and forbs. Restoration and management of invasive species at this site are ongoing. Management on the other units has consisted of signing, fencing, law enforcement, and maintaining good relationships with the Refuge neighbors. The Howard Creek and Fern Ridge units were opened for public use in 1994 (see section 1.6.3.5). Northern monkshood population monitoring began in 1991 and Iowa Pleistocene snail population monitoring in 2001. Monitoring occurs on Refuge and sites owned by others.

1.6.3 Current Refuge Management Activities

The Refuge consists of nine scattered tracts or ‘units’ totaling 781 acres (Table 1, Figure 5). The Refuge contains upland hardwood forests, grassland, stream and riparian habitats. The landcover for each unit is displayed in the following figures:

- # Bankston Unit (Figure 6)
- # Cow Branch Unit (Figure 7)
- # Fern Ridge Unit (Figure 8)
- # Hickory Creek Unit (Figure 9)
- # Howard Creek Unit (Figure 10)
- # Kline Hunt Hollow Unit (Figure 11)
- # Lytle Creek Unit (Figure 12)
- # Pine Creek Unit (Figure 13)
- # Steeles Branch Unit (Figure 14)

The current management practice is to protect endangered species habitat, restore other habitats to presettlement vegetation when possible, control invasive species, and permit limited public use that is compatible with the purposes of the Refuge. Presentations and tours are given as requested and staff time allows. The Refuge office is co-located with the McGregor District of Upper Mississippi River NWFR. An equipment storage warehouse and information kiosk were constructed in 2004 on the Howard Creek unit of the Refuge. Boundary fences and dirt surfaced roads are the only other constructed developments on the Refuge. One full time Refuge Operations Specialist is assigned to the Refuge and supervised by the District Manager, McGregor District, Upper Mississippi River NWFR.

Partners have been important players in Refuge activities over the years. The Nature Conservancy helped establish the Refuge and has worked extensively with the Refuge since then. The Nature Conservancy owns several preserves on which algific talus slopes occur and works to preserve the biodiversity of the Driftless Area. They have conducted algific slope inventory and research, contacted landowners, provided summer interns, and worked on acquisitions in a cooperative effort to protect the unique resources of the area. The Iowa Natural Heritage Foundation has also been a valuable partner in landowner contacts and land acquisition. Other agencies and individuals have assisted with prairie restoration at the Howard Creek unit. The Iowa DNR also owns preserves that protect algific talus slopes and federally listed species and has been an important partner in land protection and management.

1.6.3.1 Endangered Species

The primary goal of Refuge management for endangered species is preventing disturbance to their habitat. Endangered species habitat is closed to all public entry because the species and their habitat

Figure 6: Bankston Unit Landcover, Driftless Area NWR

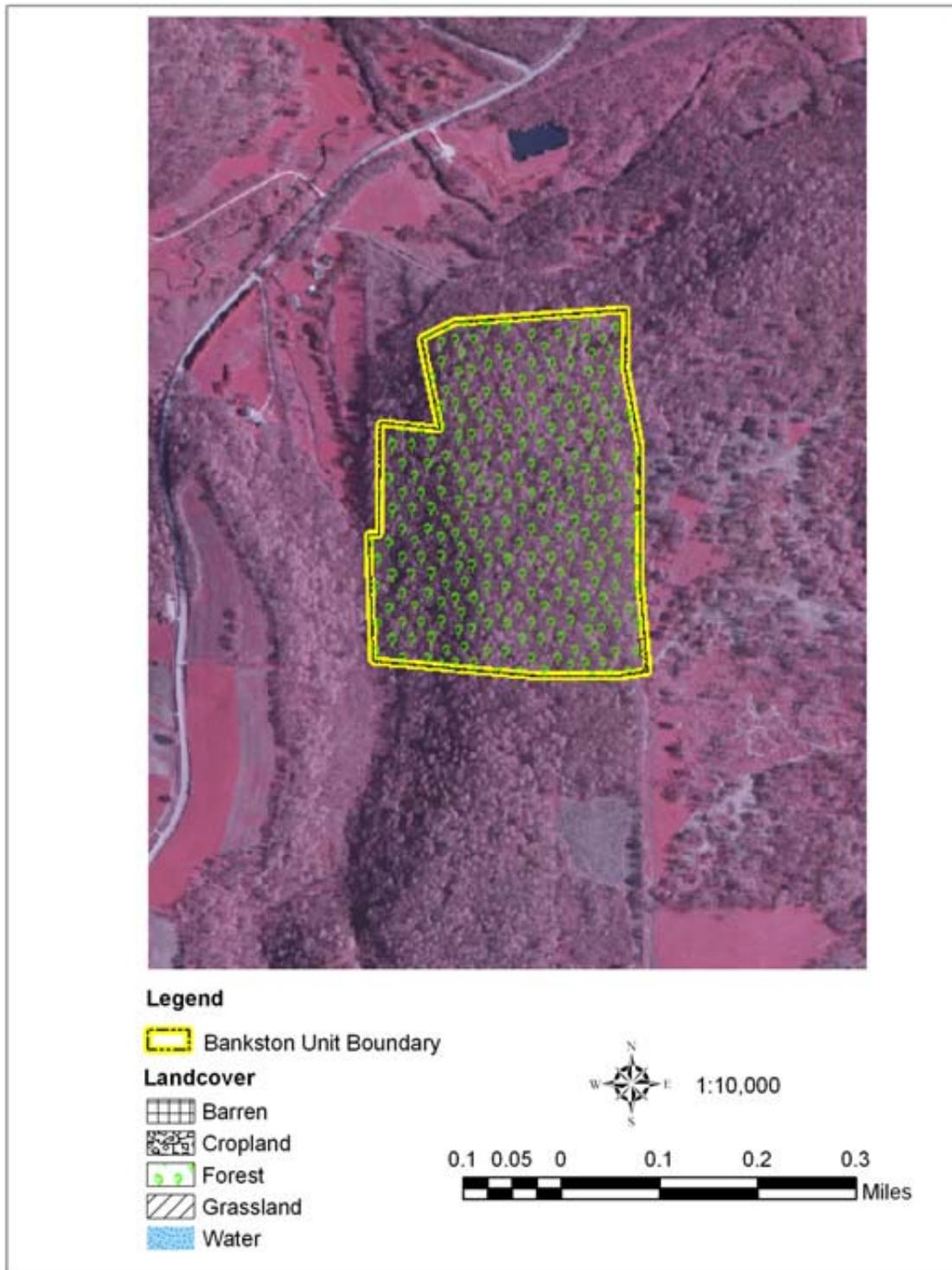


Figure 7: Cow Branch Unit Landcover, Driftless Area NWR

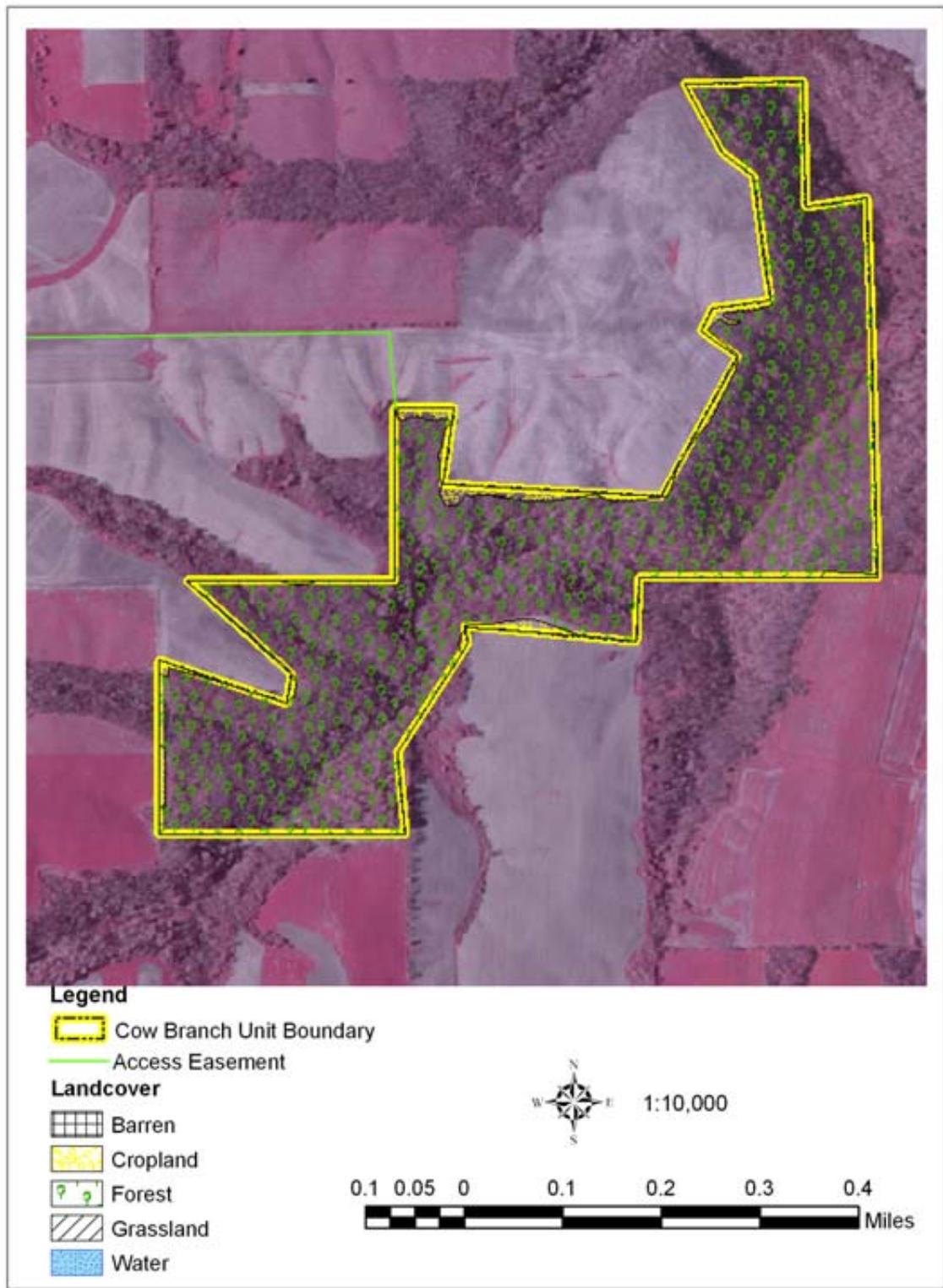


Figure 8: Fern Ridge Unit Landcover, Driftless Area NWR

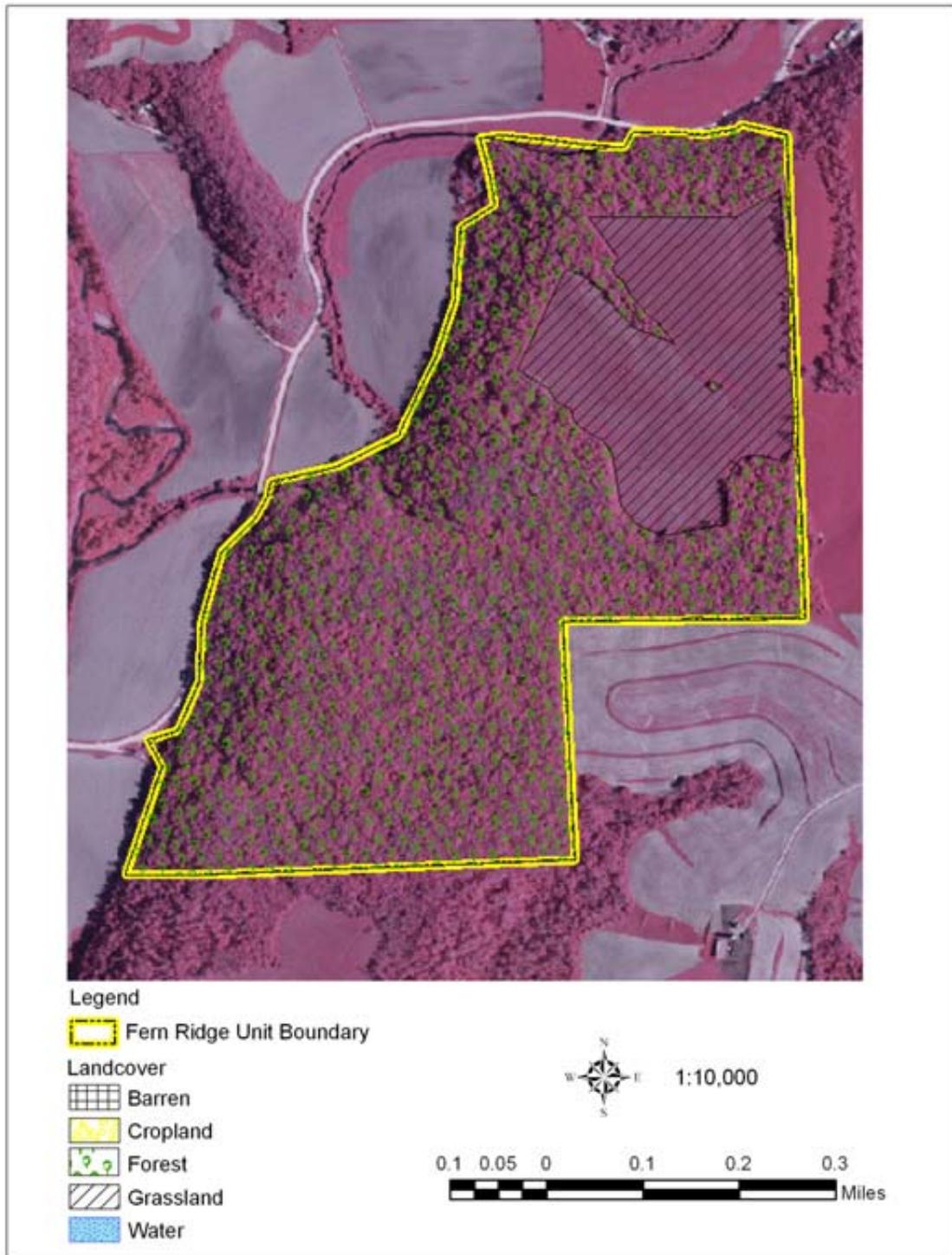


Figure 9: Hickory Creek Unit Landcover, Driftless Area NWR



Figure 10: Howard Creek Unit Landcover, Driftless Area NWR

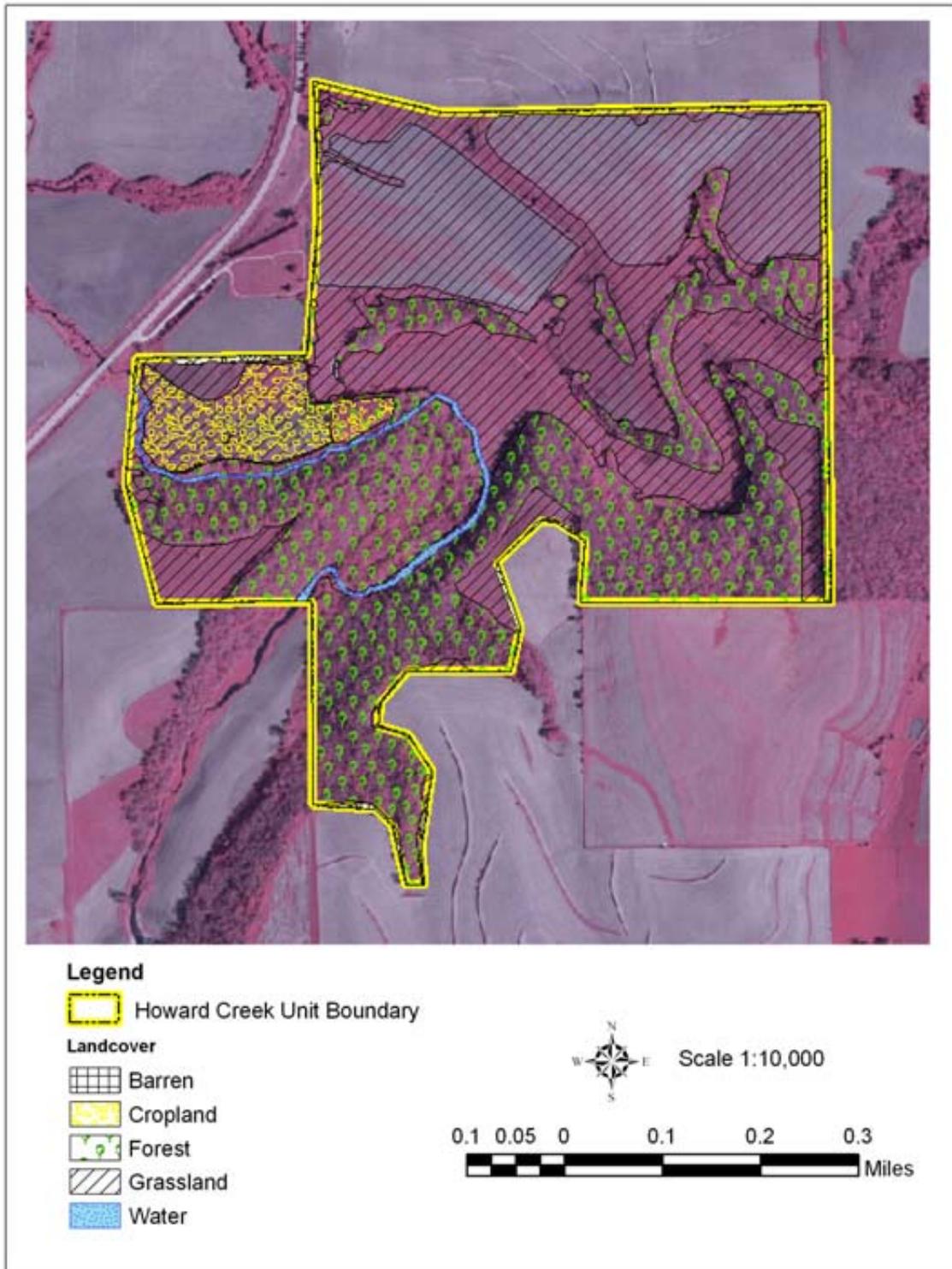


Figure 11: Kline Hunt Hollow Unit Landcover, Driftless Area NWR



Figure 12: Lytle Creek Unit Landcover, Driftless Area NWR

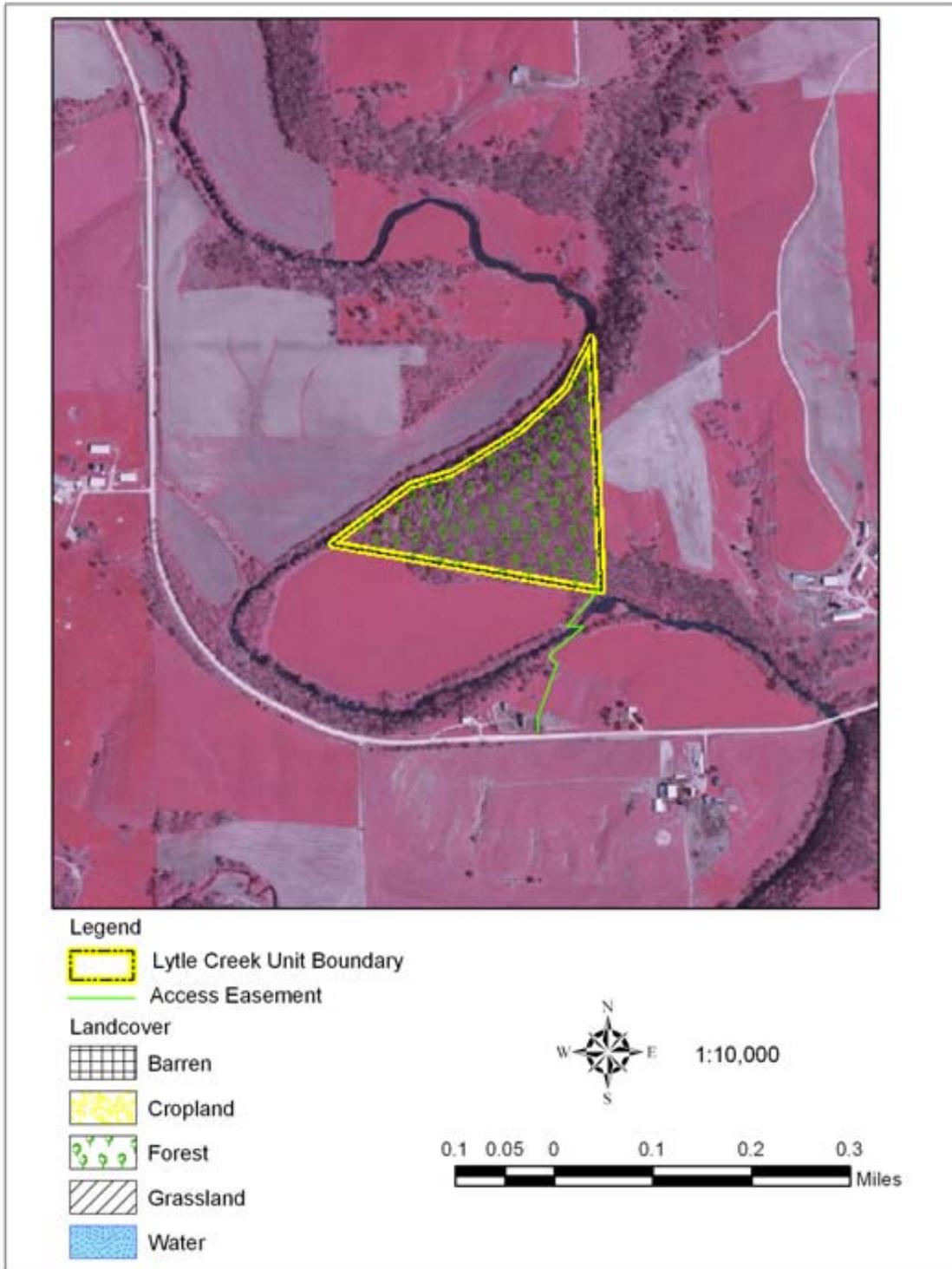


Figure 13: Pine Creek Unit Landcover, Driftless Area NWR

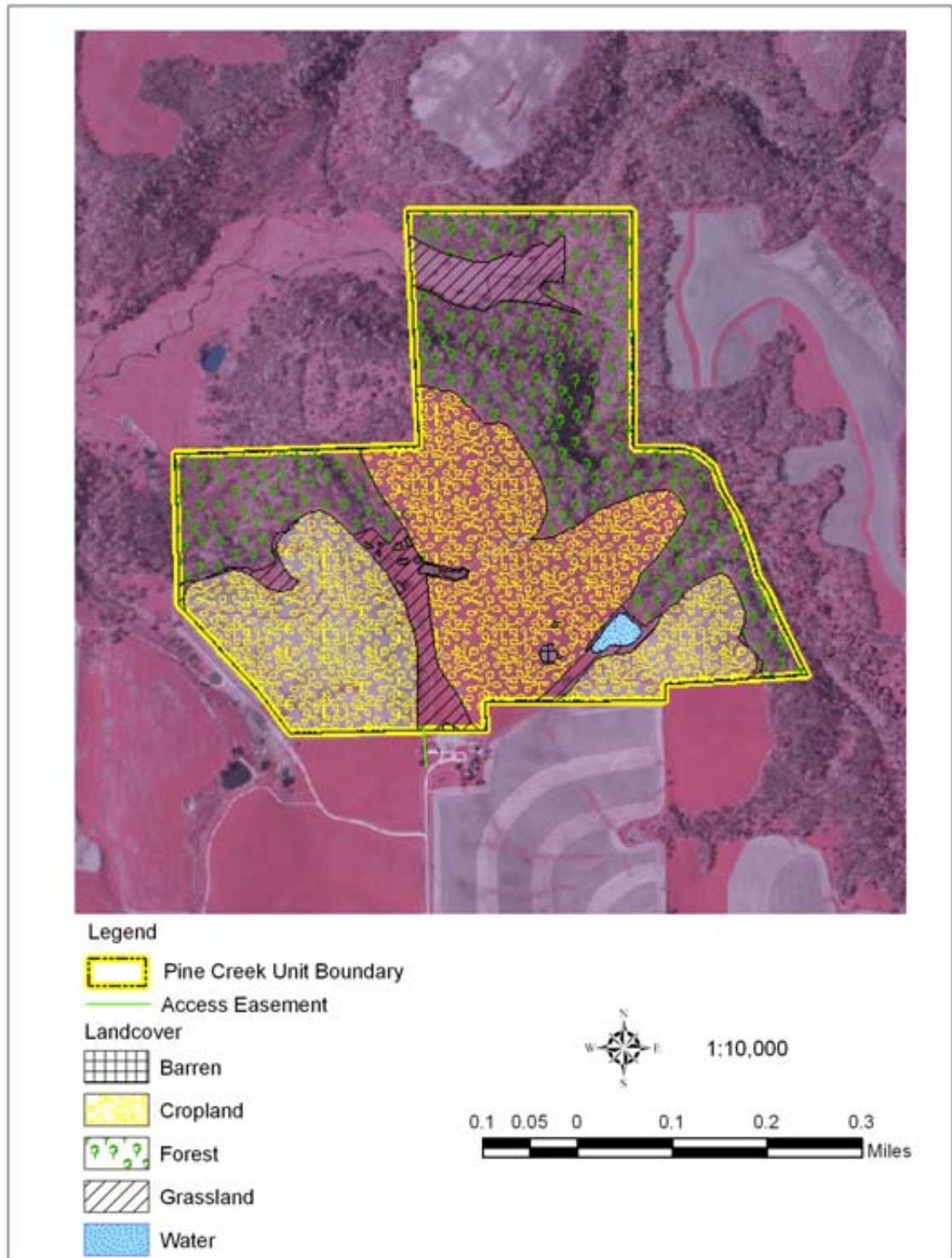
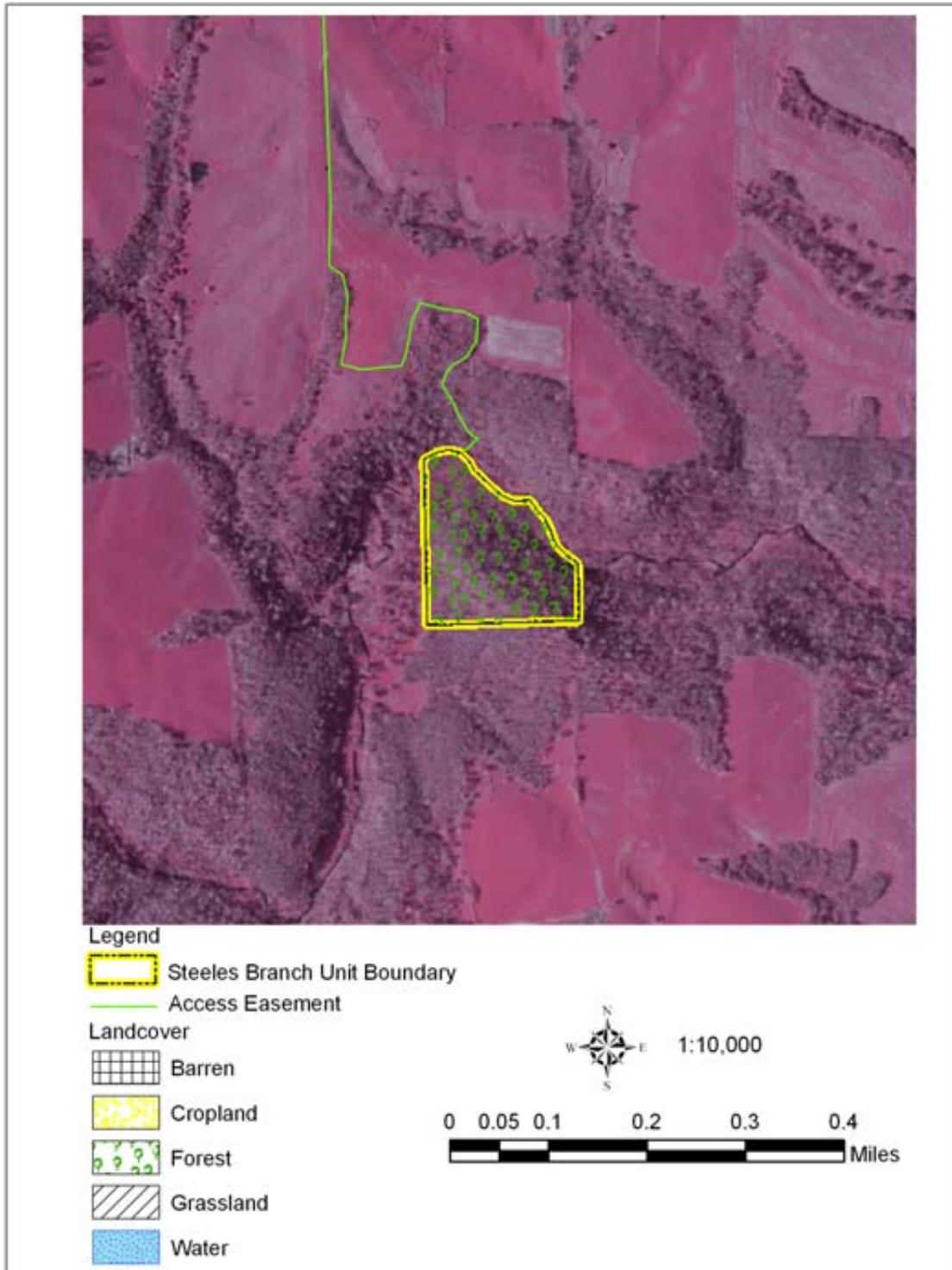


Figure 14: Steeles Branch Unit Landcover, Driftless Area NWR



are fragile. Algific slopes are typically steep, with a loose talus rock layer on the surface. Seven of the nine Refuge units are closed to all public entry because there is inadequate buffer around the algific talus slopes to allow human activity and there is not sufficient public access. Entry to several units is via an easement granted across private land. The two largest units, Howard Creek and Fern Ridge, are open to hunting, fishing, and wildlife observation. These units lie adjacent to public roads from which there is public access. The algific talus slopes are posted as closed to public entry on these open units. All units are periodically inspected by Refuge staff and law enforcement officers.

Most of the Refuge units are fenced to keep cattle from entering Refuge lands and to delineate boundaries. Refuge personnel maintain regular contact with neighboring landowners.

The invasive species, garlic mustard (*Alliaria petiolata*) has invaded some algific slopes. There is concern about its competition with Northern monkshood and other rare plants as well as possible effects on snail food sources. Garlic mustard is abundant on two slopes and has been hand removed from them during the last three years to begin control. Removal will likely be a continual effort until the seed bank is depleted. The forest surrounding these algific slopes also has abundant garlic mustard.

The recovery plans for both species require population monitoring to determine population status. A monitoring plan for Northern monkshood was developed cooperatively with the Iowa Department of Natural Resources and TNC in 1991. This monitoring has been conducted on Refuge sites as well as Iowa Department of Natural Resources preserves, TNC preserves, and private lands since 1991. A protocol for Iowa Pleistocene snail monitoring was developed in 2001 (Henry et al. 2003) and has been carried out each year since. Monitoring for both species occurs on a subset of the total number of known sites.

Refuge staff maintain contact with private landowners who have endangered species on their land in order to educate them about the fragile area on their land and inquire about possible acquisition or other forms of permanent protection. Some sites have been fenced through the Service's Endangered Species Landowner Incentive Program to prevent damage from cattle. The Nature Conservancy, Iowa DNR, and the Iowa Natural Heritage Foundation have been partners in landowner contact and land acquisition. The Refuge recently acquired Hickory Creek and Pine Creek units through land trades involving Upper Mississippi River NWFR lands. But, acquisition is currently limited by available funds and the need for additional Service authorization for Refuge expansion.

1.6.3.2 Grassland Habitat

There are 175.6 acres of grassland on the Refuge. The majority of grassland habitat exists on the Howard Creek unit (109.93 acres) and the Fern Ridge Unit (42.22 acres) (Figure 10 and Figure 8). Remnant native prairie exists on the Howard Creek unit (approximately 6 acres). The remainder of the grassland on Howard Creek unit is either cool season grasses or has been recently planted to native prairie species. The grassland on the Fern Ridge unit was cleared of trees by the previous owner for agriculture and is currently vegetated by cool season exotic grasses.

Prescribed burning has been used since 1996 to restore prairie remnants and control woody vegetation on the Howard Creek unit. Forty-eight acres of native prairie have been planted in former agricultural fields on the Howard Creek Unit. Cooperative farming has been used to prepare fields for planting. Currently, there are 81 acres in the cooperative farming program, primarily at the Pine Creek Unit. Invasive species control has taken place as staff time allows through the use of biological, mechanical and chemical control, mainly at the Howard Creek unit.

1.6.3.3 Forest Habitat

There are 535.32 acres of forest habitat on the Refuge. The majority of Refuge forests have been impacted by past grazing and logging. No restoration of forest habitats has been completed;

however, tree seeds were collected in 2003 and sent to a nursery to grow trees for planting on the Refuge. Forest inventory and management plans are needed.

1.6.3.4 Streams

Cow Branch, Fern Ridge, Howard Creek, Pine Creek, and Steeles Branch units contain coldwater or warmwater streams with associated riparian areas. Lytle Creek, Hickory Creek, and Kline Hunt Hollow units have streams adjacent to the boundary. Spring fed streams on Pine Creek and Cow Branch units flow into designated trout streams off of the Refuge. Hickory Creek is a designated trout stream stocked with brown and brook trout by the Iowa DNR. Dry Mill Creek on the Fern Ridge unit is a put and grow trout stream that flows into the Turkey River. Steeles Branch creek was formerly stocked by the Iowa DNR but is no longer. Springs on the Refuge feed most of these streams. The Pine Creek unit also has a small manmade pond about one acre in size. Bankston unit does not contain any streams.

1.6.3.5 Recreation

Currently, the Howard Creek and Fern Ridge units of the Refuge are open for deer and upland game hunting. Special regulations regarding hunting dates and weapons are in place. Specifically, deer hunting is allowed only with archery and muzzleloader. Hunting dates are restricted to November 1 to January 15. Upland game hunting is allowed with approved non toxic shot. Spring turkey hunting is prohibited. These two units are also open for wildlife observation and photography. Fern Ridge and Steeles Branch units are open for fishing. All algific slopes are posted closed areas with no public entry. There are no public use trails. Educational programs and tours are occasionally given as requested by local groups or photographers.

Volunteers have assisted with habitat restoration at the Howard Creek unit. The Nature Conservancy has provided a summer intern for several years to work at the Refuge. Interns have assisted with endangered species monitoring, landowner contacts, invasive species removal, and other Refuge and TNC activities.

1.6.3.6 Cultural Resources

Reviews for threats to cultural resources on Refuge units are currently completed and submitted to the Regional Historic Preservation Officer as management activities arise. Recent examples of management activities include stabilizing a stream bank, building a warehouse, and burying debris from tree clearing.

1.7 Refuge Purposes

The purpose of Driftless Area NWR is to conserve fish or wildlife which are listed as endangered or threatened species or plants (16 USC 1534 Endangered Species Act of 1973). The purposes and goals of the Refuge are directly tied to recovery plans which describe the conditions needed to recover the Northern monkshood and Iowa Pleistocene snail (U.S. Fish and Wildlife Service 1983, 1984). See Section 1.4.1.

1.8 Refuge Vision Statement

The vision for the Upper Mississippi River NWR Complex is: The Complex is beautiful, healthy, and supports abundant and diverse native fish, wildlife, and plants for the enjoyment and thoughtful use of current and future generations. This can be stepped down to apply to Driftless Area NWR as follows: The Refuge is beautiful, healthy, and supports and conserves native and rare wildlife and plants for current and future generations.

1.9 Refuge Goals

The goals for Refuge management were formulated from major issues identified by staff and the public.

1.9.1 Habitat Goal

Conserve endangered species habitat and contribute migratory bird and other wildlife habitat within a larger landscape.

1.9.2 Species Management Goal

Manage and conserve endangered species, other trust species, and species of management interest based on sound science through identification and understanding of algific slope communities and associated habitats.

1.9.3 Visitor Services Goal

Visitors understand and appreciate the role of the Refuge in conserving endangered species.

1.10 Planning Issues

Four public scoping meetings were held in August and September, 2002 to obtain input on issues. The meetings were held in Dubuque, Elkader, and Lansing, Iowa, and Prairie du Chien, Wisconsin in combination with the Upper Mississippi River NWFR meetings. Eighty-four citizens attended and 21 comments were received. One additional written comment was received after the meetings. An evening “Manager for a Day” workshop was held in Elkader, Iowa in Spring 2003 to obtain potential solutions to the issues. There were 15 participants at the workshop. Four mailings of a CCP newsletter have been sent to a mailing list of 2,800 people including individuals, landowners, organizations, media, and congressional staff (“Appendix H:” on page 155).

From public involvement activities, the Service learned about issues that concerned people about management of the Refuge. Refuge staff also identified issues. We organized the issues into four categories: Habitat Management, Visitor Services, Refuge Expansion, and Species Assessments.

1.10.1 Issue 1: Habitat Management

Because of the purpose of the Refuge, management of endangered species habitat is the top priority. Land acquired for the Refuge typically has been impacted by agricultural or logging activities. Habitats include hardwood forest, grassland and riparian areas. Refuge lands are small parcels, often fragmented from similar habitat in the area. Current management is to restore as much as practical to presettlement habitat types around algific slopes, although lack of funds and staff limit restoration efforts. Several external factors are influencing management efforts on the Refuge. Invasive species such as garlic mustard are impacting endangered species and other wildlife habitat. High local deer populations may also impact habitat. Erosion from farming adjacent to the Refuge can affect habitat on the Refuge.

Potential solutions identified by the public were to develop management strategies for forests, including consideration of deer impacts, expand management of habitats surrounding endangered species habitat, and work to control invasive species.

1.10.2 Issue 2: Visitor Services

Public use has not been emphasized on Driftless Area NWR because of concern for the fragile endangered species habitat, and the small size and lack of access to some units. Two of nine units are currently open to public use. Potential solutions suggested by the public were to maintain current hunting policies but increase awareness of regulations at the site, consider trail development in less sensitive areas, provide on-site information and education at select algific slopes while restricting direct access and negative impacts, provide guided walks, and encourage volunteers.

1.10.3 Issue 3: Refuge Expansion

The Refuge has reached its approved acquisition acreage. Refuge expansion will facilitate recovery goals and allow delisting of target species according to their recovery plans. Refuge land acquisition is aimed at protecting the entire algific slope system (endangered species habitat), including upland sinkholes and buffer area around the slope. Many of the currently protected algific slopes do not have adequate protection of sinkholes nor provide buffer from adjacent agricultural or other uses. Conservation of additional snail and monkshood populations is also needed to preserve genetic diversity over their range, protect large populations, and protect the majority of the populations as required by the recovery plans. Therefore expansion in Wisconsin is needed. Expansion in Minnesota would also allow protection of threatened Leedy's roseroot and species of concern. Protection of Service species of concern may preclude the need for future listing and would conserve a unique representative natural community and its biodiversity.

Potential approaches raised by the public were: to investigate other alternatives in addition to acquisition (e.g. conservation easements), increase funding for land protection, connect parcels of land where possible and expand boundaries to roads, railroads, or more recognizable features.

1.10.4 Issue 4: Species Assessments

Algific slopes were first described and mapped in the 1980s (Frest 1982, 1983, 1985, 1986, 1987). Additional information about algific talus slopes and the species that inhabit them is needed. For example, locations of sinkholes and specific information on distances and function of the cold air flow have not been studied. There are nearly 400 algific slopes/moderate cliffs in the Driftless Area, but not all are occupied by currently listed species (Figure 15). Few in-depth species surveys were done and many of the known algific slope sites were only visited once. There may be rare, endemic, or unidentified species in this habitat. It is important to know what plants and animals depend on this habitat to prepare effective management strategies. Although original surveys to locate this habitat type were systematic and comprehensive, some sites likely remain undiscovered.

Figure 15: Algific Slopes and Species Occurrences in the Driftless Area

