Chapter 4: Management Direction

Summary of Future Management Direction

Cold air vent on Driftless Area NWR. USFWS

Permanent protection of habitat is the primary recovery goal for the Iowa Pleistocene snail and Northern monkshood as the habitat cannot be restored once lost and the species are difficult to reintroduce. As well as meeting recovery goals, protection of additional algific slopes or maderate cliffs would meet the Service's goals of conserving biological integrity, diversity and environmental health. Refuge land protection will meet key recovery goals for these species and may prevent future listing of other land snail and plant species.

Permanent conservation of algific talus slopes goes beyond protection of the slope itself from physical disturbance. New information and threats since the recovery plans were written increase the need for active management to meet multiple recovery goals for delisting. Some slopes are, or may be, impacted by invasive species (garlic mustard), high local deer populations, erosion runoff into sinkholes, and vegetative succession on adjacent habitat. This alternative takes a long-term ecological approach to endangered species conservation and meets multiple recovery goals that can lead to delisting of the Iowa Pleistocene snail during the life of the CCP. The Service also has the responsibility to manage Refuge lands in an ecologically sound manner for other wildlife species. The objectives in this CCP are aimed at taking care of existing Refuge habitats as well as adding lands for endangered species protection.

The total approved acquisition area for the Refuge is 6,000 acres in 22 counties (four states) according to a revised Land Protection Plan (Appendix I). The LPP is the total Refuge acreage desired to complete the Refuge project and is a longer term plan than the CCP. Expansion into additional counties will allow potential acquisition and protection of large populations, populations across the species' ranges, and protection of the majority of populations. The 2,275 acres listed in the objectives is the acreage we believe we can protect within the 15-year life of the CCP given anticipated levels of willing sellers, funding, and the need to accomplish other Refuge objectives. The acreage includes that needed to permanently protect algific slopes including sinkholes and buffer areas to protect from adjacent land uses. Protection may also be achieved in cooperation with other agencies.

Habitat

Inspection of Refuge units will increase to 8 hours/week and a law enforcement officer shared with the McGregor District of Upper Mississippi River NWFR. Invasive species control, particularly for garlic mustard, will increase. Iowa Pleistocene snail and Northern monkshood monitoring will continue. More study of algific slopes, such as determining the impacts of shade to aid with

restoration decisions on adjacent habitat, will be completed. A biologist has been added to the staff. Conservation site plans for potential acquisition areas will be completed. Approximately 2,200 acres of endangered species habitat above the 2004 level will be conserved through acquisition or other means to meet delisting criteria of the Iowa Pleistocene snail and contribute to recovery goals for Northern monkshood and Leedy's roseroot. Seventy-five acres above the 2004 level will be conserved to help preclude listing of glacial relict snail species of concern. Of course, acquisition levels are dependent on funding and willing sellers.

Forty acres of grassland will be restored at the Howard Creek Unit. Forty-one acres of forest will be reestablished at the Fern Ridge unit (Figure 16), 7 acres at the Howard Creek unit (Figure 17), and 68 acres at the Pine Creek unit (Figure 18). A management plan will be developed for all other forest lands to describe how forests would provide habitat for migratory birds and other wildlife. Habitat management plans will be prepared for newly acquired lands.

Species Management

Surveys for new algific talus slopes and associated species will be done. Species inventories of selected algific talus slopes would aid in understanding of these unique communities. Recovery plans for the Iowa Pleistocene snail and Northern monkshood will be updated. Study of the location and function of sinkholes will be initiated. An evaluation of deer populations and their impacts on the Refuge will be completed.

Visitor Services

A wildlife observation trail will be added to the Howard Creek Unit. Office and Visitor Center space will continue to be shared with the McGregor District, although space is limited. A new professionally developed interpretive display, as well as increased environmental education will be completed. An interpretive park ranger will be shared with McGregor District. Threshold visitor use levels will be determined. A Visitor Services Plan will be completed.

Cultural Resources

Cultural resources on federal lands receive protection and consideration that would not normally apply to private or local and state government lands. This protection is through several federal cultural resources laws, executive orders, and regulations, as well as policies and procedures established by the Department of the Interior and the Service. The presence of cultural resources including historic properties cannot stop a federal undertaking since the several laws require only that adverse impacts on historic properties be considered before irrevocable damage occurs. However, the Refuge will seek to protect cultural resources whenever possible.

During early planning of any projects, the Refuge will provide the Regional Historic Preservation Officer (RHPO) a description and location of all projects and activities that affect ground and structures, including project requests from third parties. Information will also include any alternatives being considered. The RHPO will analyze these undertakings for potential to affect historic properties and enter into consultation with the State Historic Preservation Officer and other parties as appropriate. The Refuge will also notify the public and local government officials to identify any cultural resource impact concerns. This notification is generally done in conjunction with the review required by the National Environmental Policy Act or Service regulations on compatibility of uses.

Figure 16: Future Desired Conditions, Fern Ridge Unit, Driftless Area NWR

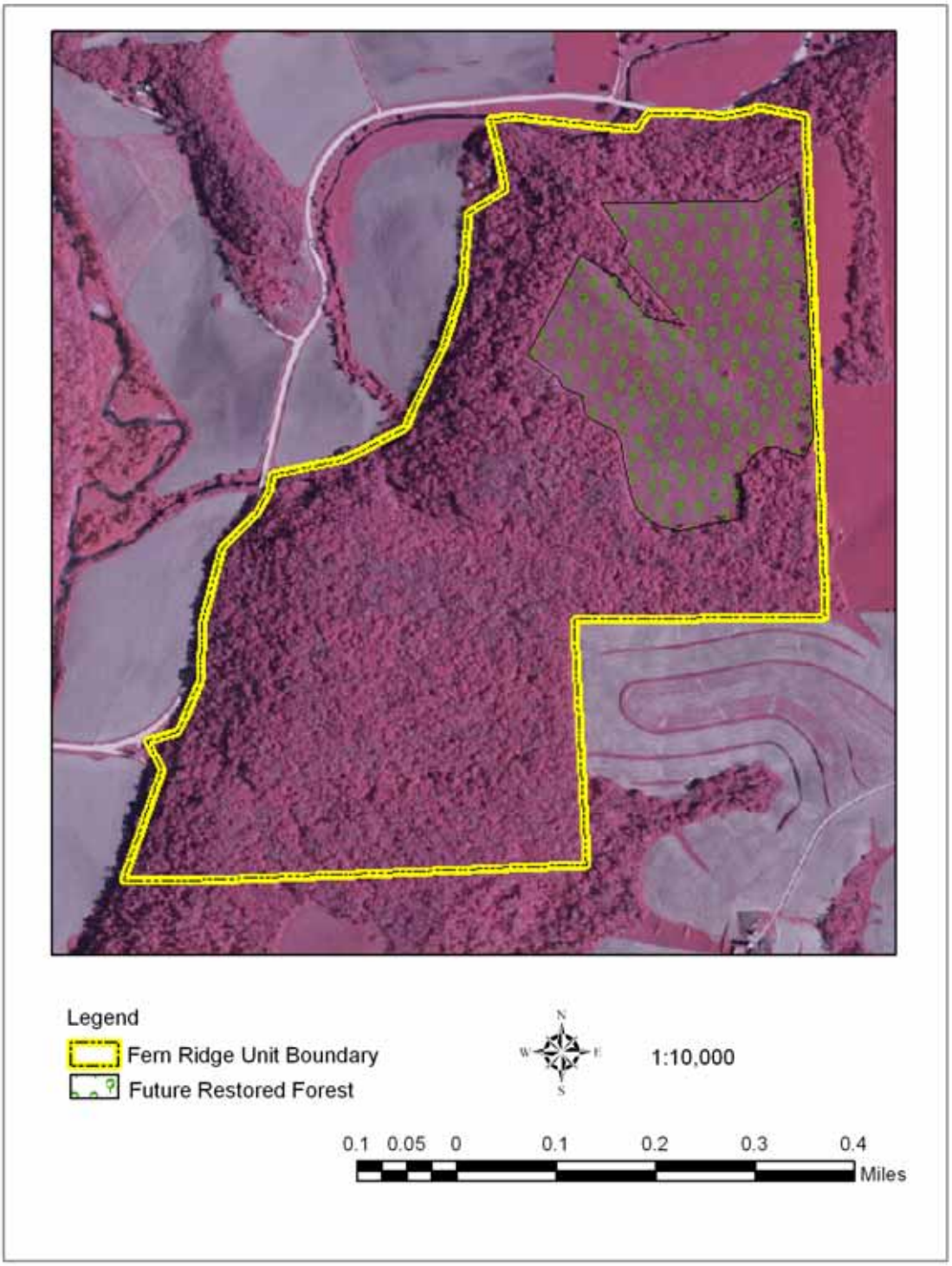


Figure 17: Future Desired Condition, Howard Creek Unit, Driftless Area NWR

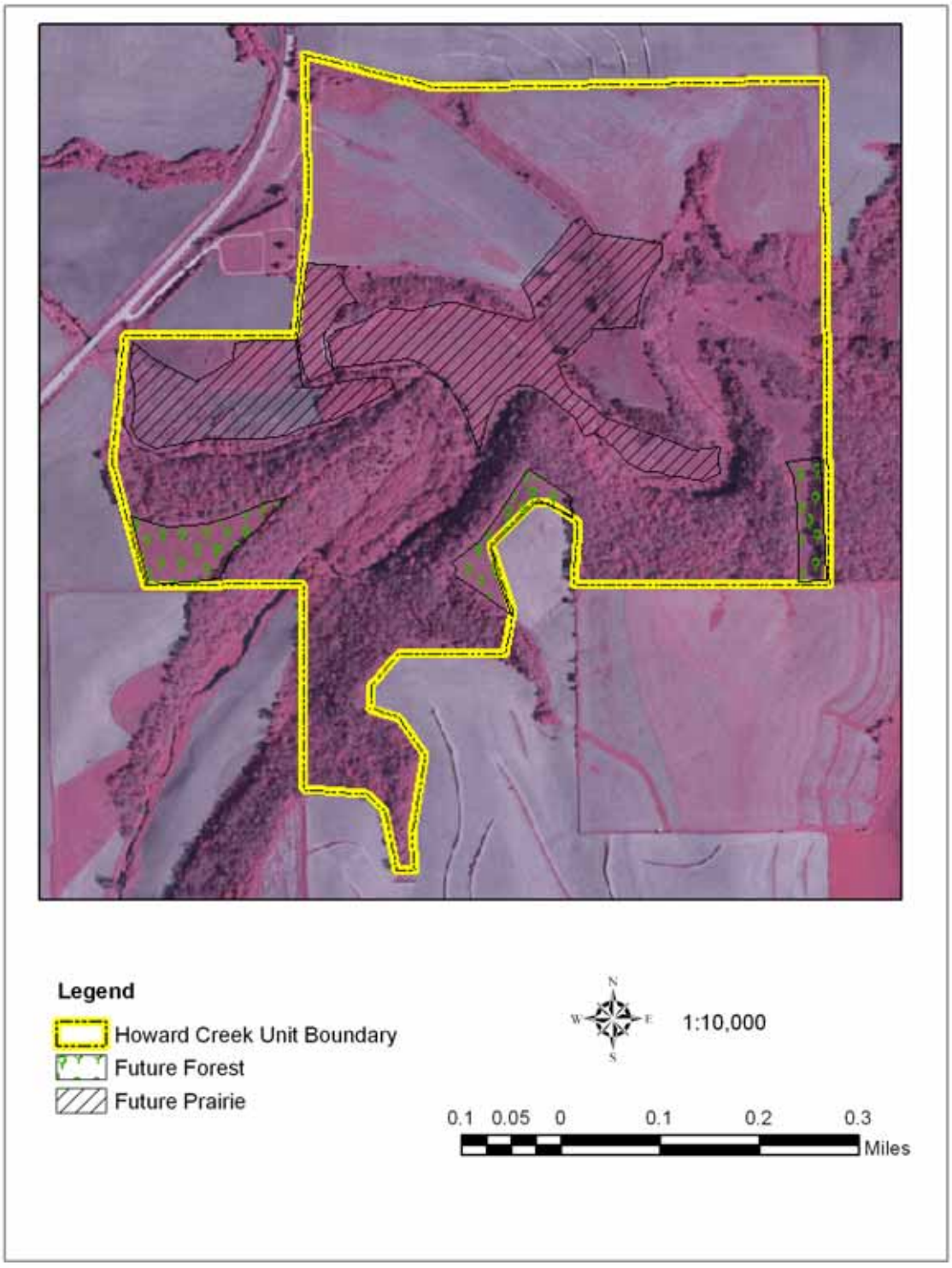
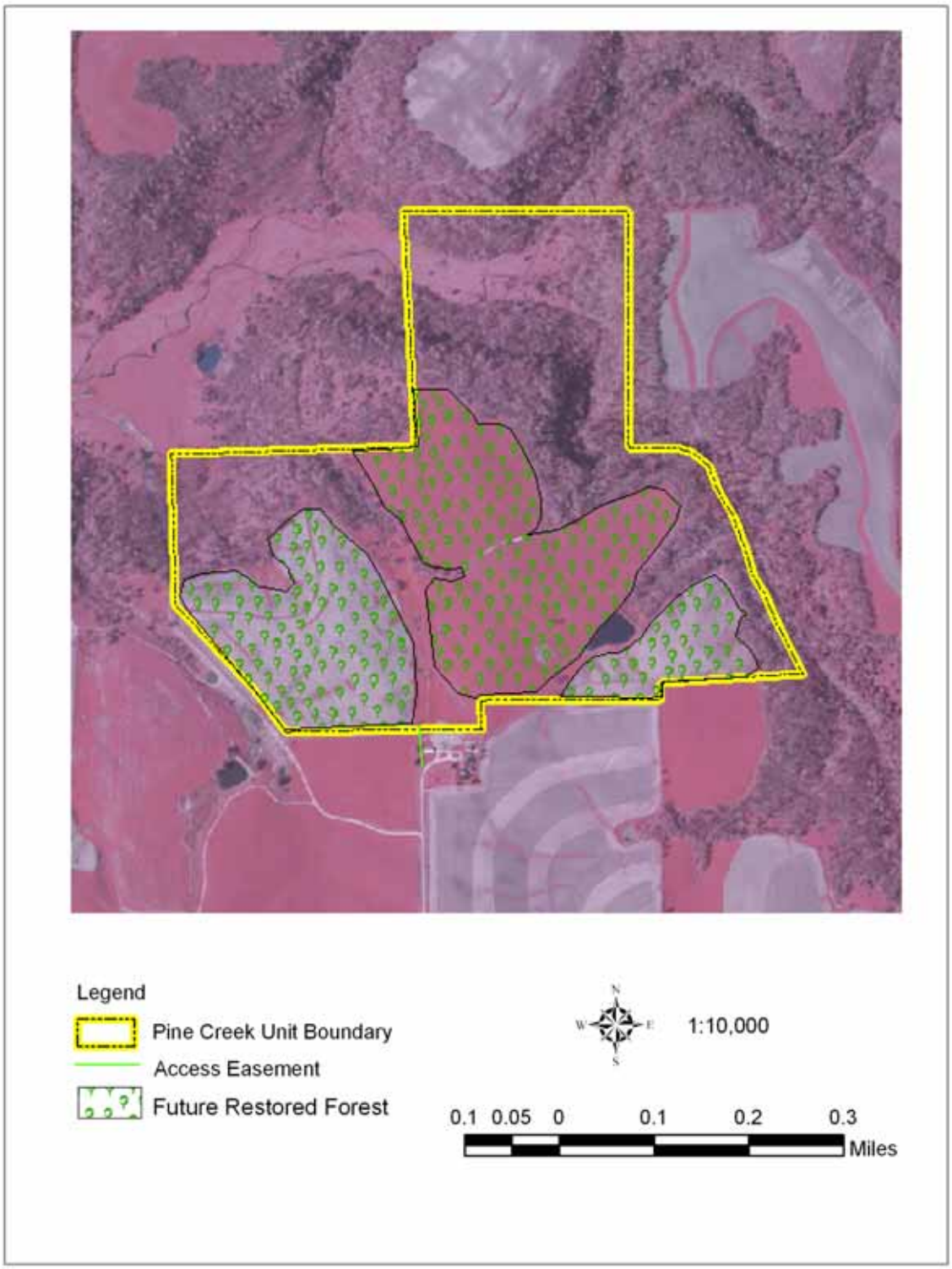


Figure 18: Future Desired Condition, Pine Creek Unit, Driftless Area NWR



Goals, Objectives and Strategies

Habitat Goal

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

Objective 1: Increase management of physical and biological impacts to algific slopes by eliminating invasive species (on slopes), maintaining zero impacts from public use, and reducing off Refuge impacts on two units by 2015.

Rationale: The Refuge purpose is to conserve endangered and threatened species. This objective is tied to the purpose of the Refuge and Iowa Pleistocene snail and Northern monkshood recovery plan goals for permanent protection of habitat. Algific talus slopes are fragile because of the steep slopes with a loose surface rock layer. All algific slopes would remain closed to all public entry. However, some management activity on algific slopes is needed to maintain their biological integrity. Invasive garlic mustard is competing with Northern monkshood. It has unknown effects on the Iowa Pleistocene snail, but we speculate garlic mustard could affect its specific food requirements. Removal of garlic mustard can be completed by carefully hand pulling it on some sites, but may take several years to control using this method because of the seed bank present. Vegetation adjacent to algific talus slopes can affect temperatures and other microclimate characteristics important to the species that inhabit them. Study of the impact of shade on algific talus slopes would help in determining what the best restoration options are adjacent to the slopes. Population monitoring of both species would continue at 2004 levels on selected sites on and off Refuge. These management activities would be done under specific guidelines such as restricting the number of people, number of sites, avoiding more sensitive sites, using wildlife trails, and other restrictions to prevent damage to the habitat.

Strategies:

1. Maintain existing closed areas.
2. Ensure boundary signing and fencing on all units are adequate
3. Increase inspection of units, on average 8 hours per week, particularly during hunting seasons.
4. Share a law enforcement officer with the McGregor District of UMRNWFR.
5. Increase contact with landowners adjacent to the Refuge to prevent impacts from grazing, logging, invasive species, erosion, and sinkhole filling. Specifically, use USDA programs, Partners for Fish and Wildlife program or endangered species funding to reduce erosion impacts to the Fern Ridge and Cow Branch units.
6. Remove all garlic mustard from algific slopes on the Howard Creek and Lytle Creek units in ways that minimize disturbance. Expand garlic mustard control efforts in surrounding habitats on all units.
7. Monitor Iowa Pleistocene snail and Northern monkshood populations (on Refuge and other public and private lands) at 2004 level of effort to measure population trends for recovery and as an indicator of habitat condition.

8. Monitor soil/vent temperatures on algific talus slopes with data loggers that collect daily temperature.

9. Fund research to determine impacts of shade on algific talus slopes, particularly in regard to Northern monkshood. Complete study by 2010. This would aid in determining the best restoration alternative adjacent to algific slopes.

10. Add a wildlife biologist to the staff to help accomplish additional work.

Objective 2: Restore existing 40 acres of grassland on the Howard Creek Unit to a mixture of at least 25 species of local genotype grasses and forbs by 2009.

Rationale: Other wildlife habitats are present on the Refuge and should be managed for Service trust resources when possible. Native climax vegetation would likely do best on the land and require the least long term maintenance once established. The Howard Creek Unit contains remnant native prairies and much of the area was once prairie or savanna. Some planting of native prairie species has already taken place on this unit and this objective is aimed at completing grassland restoration for the Howard Creek Unit.

Strategies:

1. Use fire and other techniques to control invading woody vegetation on remnant and restored prairies.

2. Use biological, chemical, and mechanical controls to control invasive species on other habitats.

3. Develop partnerships with local groups to restore prairie and possibly create demonstration areas.

4. Plant a mixture of native grasses and forbs (local genotype).

Objective 3: Establish oak-hickory forests on all lands that were historically hardwood forest under pre-European settlement conditions by 2012.

Rationale: The majority of Driftless Area Refuge habitat is or was hardwood forest that has been impacted by past agricultural or logging uses. Some forests are degraded and some were completely cleared for farming. Habitat immediately adjacent to algific talus slopes may affect such factors as microclimate (i.e. shade helps maintain cool conditions) and encroachment of invasive species. Restoration of forests is important to maintaining endangered species habitat.

Although Refuge units are relatively small, they do provide habitat for Region 3 Resource Conservation Priority species and migratory non-game birds of management concern. These species will be encouraged through habitat restoration planning. Fragmentation of habitats both within and around Refuge lands is a concern for migratory bird management because of the effects of predators and parasitic cowbirds. Restoration of native vegetation on the Refuge would reduce, but not eliminate, fragmentation within units and would provide closer connection to forest in the surrounding landscapes. Active restoration by planting trees would speed restoration and provide the species desired for wildlife habitat.

Strategies:

1. Plant 116 acres of native forest on the Pine Creek (68 ac), Fern Ridge (41 ac), and Howard Creek units (7 ac) (Figure 16,Figure 17 and Figure 18).

2. Develop partnerships with local groups to restore forests and evaluate feasibility of establishing reforestation demonstration areas.
3. Inventory exotic invasive species and develop plans for control on each unit.
4. Coordinate with states and partners to develop Habitat Management Plans for each Refuge unit and implement forest management plans for existing forests on the Fern Ridge and Bankston units during the life of the plan.

Objective 4: Permanently conserve 2,200 additional acres of endangered species habitat above the 2004 level to achieve this recovery goal for the Iowa Pleistocene snail and contribute to recovery goals for the Northern monkshood and Leedy's roseroot by 2020.

Rationale: This objective is tied to the purpose of the Refuge and species' recovery plan goals for permanent protection of habitat. More habitat protection is needed to reach these recovery goals. Refuge land protection can lead to delisting of these species and may prevent future listing of other land snail and plant species. Refuge land protection will also conserve biological integrity, diversity, and environmental health according to Service policy.

Cold air vent and mosses on algific slope. USFWS

Overall Refuge expansion is proposed at 6,000 acres in 22 counties (four states) under a revised Land Protection Plan (Appendix I). The LPP is the total Refuge acreage desired to complete the Refuge project and is a longer term plan than the CCP. Expansion into additional counties will allow potential acquisition of large populations, populations across the species' ranges, and of the majority of their populations. Acquisition would not necessarily occur in every location, but where willing sellers exist for known species locations in any of these counties. Acquisition acreage includes algific slopes, associated sinkholes, and buffer areas needed to permanently protect them from adjacent land uses. The acreage listed in this alternative is what we believe is possible to protect in the next 15 years given willing sellers, funding, and Refuge resources. Habitat protection may also be in cooperation with other agencies.

Strategies:

1. Maintain contact with landowners to maintain integrity of sites and identify willing sellers. Use the Service's Partners for Fish and Wildlife program and assistance from partners such as TNC.
2. Acquire additional land adjacent to Refuge sites where the algific slopes or sinkholes are not under permanent protection.
3. Protect an additional 20 snail and monkshood sites.

4. Coordinate with the USFWS Twin Cities Ecological Services office and Minnesota DNR to identify and acquire any Leedy's roseroot site that becomes available.
5. Seek consistent annual Land and Water Conservation Fund appropriations to meet the objective.
6. Work with partners to protect sites through a variety of means such as funding provisions of the Endangered Species Act (Section 6), land trust conservation easements, U.S. Department of Agriculture programs, fund raising, and congressional appropriations.
7. Prioritize sites for protection and prepare site preservation plans in Geographic Information Systems format with state and partner input.
8. Protect sites through conservation easements and fee title acquisition.

Objective 5: Permanently conserve 75 additional acres of habitat above the 2004 level to help preclude listing of glacial relict species of concern by 2020.

Rationale: Some algific slopes are occupied by Service species of concern, but not by threatened and endangered species. This objective would begin to protect sites for these species to help preclude future listing as threatened or endangered.

Strategies:

1. Protect three sites for other species of concern.
2. Maintain contact with landowners to maintain integrity of sites and identify willing sellers. Use assistance from partners such as TNC.
3. Protect sites through conservation easements and fee title acquisition.

Species Management

Goal: 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.

Objective 1: Identify and evaluate new algific slopes in the Driftless Area for the presence of threatened and endangered species and species of concern within 3 years of plan approval.

Rationale: Initial surveys to locate algific talus slopes and associated species were done in the 1980s. Several new algific slopes were found in the last few years just by casual observation, indicating that more may be present than is currently known. A renewed comprehensive survey should be done to ensure that as many algific slopes as possible are known. This information may shed new light on species abundance or threats to endangered and rare species. Survey of potential habitat is a recovery goal.

Strategies:

1. Review existing algific slope records to identify potential new survey locations. Actively search areas that may have been underrepresented in original surveys. Survey any new locations for Iowa Pleistocene snail and Northern monkshood.
2. Seek assistance from Partners to provide funding or people to accomplish objective.

Objective 2: Establish the size of upland buffers needed to provide permanent protection of algific talus slopes by 2009.

Rationale: Sinkholes are crucial to cold air flow on algific talus slopes. Their function, locations, and distance from slopes is not completely known. In addition, more information is needed on sinkhole locations and distance from algific talus slopes. This objective is also a recovery task for the Iowa Pleistocene snail and is essential to determining land protection areas and strategies.

1. Conduct winter surveys to locate sinkholes associated with algific slopes to aid in protection efforts.
2. Initiate studies to determine the function and association of sinkholes and other features to cold air flow and hydrology.
3. Explore ways to study the potential impacts of climate change on algific talus slopes.

Objective 3: Gain a better understanding of plants and animals associated with algific talus slopes and similar habitats in the Driftless Area.

Rationale: Comprehensive surveys for plants and insects have never been done for algific talus slopes. There may be additional rare, endemic or new species. Inventory of wildlife on other Refuge habitats has not been completed. An inventory of Refuge plant and animal communities is needed to prepare effective management strategies. The Refuge Improvement Act also requires inventory and monitoring of fish, wildlife, and plants on all Refuges. Refuge partners are also interested in inventory of algific slopes.

Strategies:

1. Work with experts to inventory snail, plant and insect species on six or more algific talus slopes within 8 years of plan approval.
2. Inventory birds on Refuge units to document habitat use and develop plans for management of conservation priority species on the Refuge.

Objective 4: By 2008, determine the appropriate deer density and population structure for Refuge units that will safeguard habitat.

Rationale: Deer populations in northeast Iowa have been high for several years. There is concern that high deer densities, particularly on units where hunting is not allowed, could impact algific talus slopes as well as other habitats. The population level that causes negative impacts needs to be determined.

Strategies:

1. Use research or literature searches to determine the current and desired deer density on the Refuge.
2. Working with states, manage deer populations at a level and population structure that does not negatively impact algific slopes or associated habitats.
3. Use special permit hunts when damage to algific slopes or other habitats from deer is observed.

Objective 5: Update the recovery plans for Iowa Pleistocene snail and Northern Monkshood within 5 years of CCP approval.

Rationale: The current recovery plans for these species are outdated and do not include all locations, specific recovery objectives, threats, or specific monitoring guidelines. Updated plans would provide for better planning and species protection and increase the likelihood of recovery.

Strategies:

1. Work with Ecological Services and applicable states to update and rewrite draft recovery plans.

Visitor Services Goal

Goal: Visitors have an understanding and appreciation of the role of the Refuge in conserving endangered species.

Objective 1: Increase environmental education programs by 50 percent within 8 years of CCP approval and establish an upper level limit for visitation within 5 years of CCP approval.

Rationale: Promotion of the Refuge and wildlife-dependent recreation has historically been limited because of the sensitive nature of endangered species habitat and limited staff to manage public use. However, the public is now more aware of land owned by the Service and has expressed interest in increasing outreach and wildlife-dependent recreation opportunities. With targeted programs, visitors' understanding of the Refuge's purpose can be enhanced. Education about endangered species and the special resources of the Driftless Area may promote stewardship among landowners and therefore further protection of rare and endangered species. Education about snails and their habitat is a recovery task.

Only units with public access routes and sufficient acreage surrounding endangered species habitat would be open to the public. However, there is a level of use that could cause unacceptable changes in habitat and wildlife. To better achieve the endangered species purpose of the Refuge, the level below which impacts are negligible needs to be determined. The primary increased use would be off-site environmental education.

Strategies:

1. Maintain the Howard Creek and Fern Ridge units open to upland game and white-tailed deer hunting. Open the Pine Creek Unit to hunting under the same special regulations as the Howard Creek and Fern Ridge units.
2. Maintain the Steeles Branch and Fern Ridge units open to fishing. Open the Pine Creek Unit to fishing.
3. Maintain the Howard Creek and Fern Ridge units open to wildlife observation and photography. Open the Pine Creek Unit to wildlife observation and photography.
4. Maintain McGregor District Visitor Contact Station as a place of primary public contact.
5. Develop an information kiosk at the Fern Ridge Unit by 2007.
6. Develop a wildlife observation trail at the Howard Creek Unit by 2008.

7. Develop an interpretive display at McGregor District Visitor Contact Station by 2007.
8. Present local school groups at least 10 environmental education programs per year, with an emphasis on endangered species.
9. Share an interpretive park ranger with the McGregor District.
10. Develop a Visitor Services Plan within 2 years of CCP approval. The Plan will describe basic visitor and resource protection, appropriate signing, informational brochures, Visitor Center displays, and other information needed for visitors to have an educational and enjoyable experience.
11. Permit compatible wildlife-dependent recreation on newly acquired lands.
12. Establish a reliable system for documenting and monitoring public use within 2 years of CCP approval.
13. Establish the relationship between level of use and impacts to resources within 5 years of plan approval and modify the Visitor Services Plan accordingly.
14. Develop a volunteer program and continue to work with the Friends of the Upper Mississippi River Refuges.