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Department of  
Agriculture

Forest  
Service

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# Environmental Assessment

## Northern Research Station Kawishiwi Field Laboratory Building Disposition

Superior National Forest  
Lake County, Minnesota



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Cover Photo: Oil House, Northern Research Station Kawishiwi Field Laboratory

## Summary

The United States Department of Agriculture (USDA) Forest Service Northern Research Station (NRS) has prepared this Environmental Assessment (EA) to analyze the potential environmental impacts of permanent disposition of its buildings at the Kawishiwi Field Laboratory, located near Ely, Minnesota.

The NRS is seeking to dispose of its buildings at the Kawishiwi Field Laboratory, as NRS itself has not had a research interest based out of the laboratory for over twenty years and has no future plans for the buildings. Additionally, the buildings are in poor condition and the NRS has no plans to rehabilitate them, or to continue supporting the high annual maintenance and utility costs associated with the buildings. The current sole tenant of the laboratory is the U.S. Geological Survey (USGS) Northern Prairie Wildlife Research Center.

The Kawishiwi Field Laboratory buildings are located on the Superior National Forest. Superior National Forest will retain ownership of the land, regardless of the building disposition alternative.

Alternative courses of action analyzed in this EA include the No Action alternative, the increase of funds to rehabilitate and maintain the buildings, the transfer of both the ownership and the management of the buildings to another entity, transfer of management but retention of ownership of the buildings, relocation of the buildings to a site off of National Forest Service land and relinquishment of ownership and maintenance, and demolition of the buildings. Demolition of the buildings after complete historic documentation of the site is the Forest Service's Proposed Action.

There are eleven buildings and one structure (a poured-concrete storage cellar) on site, nine of which contribute to the National Historic Register eligibility of the Halfway Ranger Station Historic District. The historical significance of the buildings relates to their association with a Federal agency, the Forest Service and a Federal program, the Depression Era Civilian Conservation Corps (CCC), as well as their superior craftsmanship and representation of nationally important styles of architecture characteristic of an historical era. If the buildings are left to deteriorate on site without adequate maintenance funds or historic documentation under the No Action alternative, resulting impacts to cultural resources could be significant. The impacts to cultural resources from all other project alternatives can be at least partially mitigated to ensure impacts are below the significance threshold. The impacts to the human health and safety of site occupants and visitors from the continued deterioration of the buildings under the No Action alternative are long-term, adverse and major.

Additionally, valuable wildlife research, including extensive research on the threatened gray wolf and on the endangered Canadian lynx, has been and continues to be conducted out of the Field Laboratory by the USGS. If future uses of the buildings change or if the buildings are relocated or demolished, this would eliminate the Field Laboratory as a wildlife research station. This would result in major indirect impacts to wildlife.



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## List of Abbreviations and Acronyms

ACM	Asbestos Containing Material
BMP	Best Management Practice
BWCAW	Boundary Waters Canoe Area Wilderness
CAA	Clean Air Act
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
FY	Fiscal Year
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscapes Survey
HRSHD	Halfway Ranger Station Historic District
IWC	International Wolf Center
LSFES	Lake States Forest Experiment Station
MCC	Minnesota Conservation Corps
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFS	National Forest Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRS	Northern Research Center
OSHA	Occupational Safety and Health Administration
R&D	Research and Development
SDS	State Disposal System
SHPO	State Historic Preservation Officer
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UMN	University of Minnesota
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

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# 1 Purpose and Need

## 1.1 Introduction

The United States Department of Agriculture (USDA) Forest Service Northern Research Station (NRS) has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and state laws and regulations. This EA analyzes the potential environmental impacts of permanent disposition of its buildings at the Kawishiwi Field Laboratory, located near Ely, Minnesota.

The NRS is seeking to dispose of its buildings at the Kawishiwi Field Laboratory, as NRS itself has not had a research interest based out of the laboratory for over twenty years and has no future plans for the buildings. Additionally, the buildings are in poor condition and the NRS has no plans to rehabilitate them, or to continue supporting the high annual maintenance and utility costs associated with the buildings.

The Kawishiwi Field Laboratory is located in Township 62 North, Range 11 West, Section 33, 4th P.M., Babbit, Minnesota 7.5 Minute Quadrangle Map. The site is within the Superior National Forest along the eastern bank of the South Kawishiwi River in Lake County, Minnesota, approximately 12 miles southeast of Ely, Minnesota (see Figure 1-1 and Figure 1-2). The Kawishiwi Field Laboratory is an administrative site on the Superior National Forest, consisting of eleven buildings and one structure (a poured-concrete cellar). The NRS manages the administrative site (the Kawishiwi Field Laboratory buildings), while the Superior National Forest manages the land.

In addition to analyzing five alternatives for building disposition, this EA also considers the No Action alternative.

## 1.2 Background

The NRS is part of United States Forest Service (USFS) Research and Development Division, which is a division separate from the National Forest System (NFS). The USFS Research and Development Division is responsible for research on the effects of social, biological, and physical processes on forests; this research focuses on four major areas:

- Resource Valuation and Use
- Science Policy, Planning, Inventory and Information
- Vegetation Management and Protection
- Wildlife, Fish, Water, and Air

The site of the Kawishiwi Field Laboratory was originally established in 1910 as the Superior National Forest Halfway Ranger District. In 1955, management of the administrative site was transferred from the Superior National Forest to USFS Research and Development Division, which began operation of an adjacent experimental forest and conducted research out of the buildings. Research conducted out of the buildings shifted from a focus on forestry to one on wildlife research in 1968, with research teams from the University of Minnesota and the United States Geological Survey (USGS) utilizing the site. By the 1980s, the USFS Research and Development Division had discontinued all of its research activity at the site, but retained ownership and management of the buildings. The current sole tenant of the Kawishiwi Field

Laboratory buildings is the USGS Northern Prairie Wildlife Research Center, which continues to conduct wildlife research based from the buildings.

In 2006, the Minnesota State Historic Preservation Officer (SHPO), in response to inquiries from the NRS, determined that the Kawishiwi Field Laboratory site was eligible for listing on the National Register of Historic Places as a Historic District. At the request of the SHPO, NRS contracted with the Heritage Stewardship Group, an enterprise unit of the Forest Service, for delineation and analysis of the historic district. The resulting report (Appendix C) determined that eight buildings and one structure contribute to the historical significance of the delineated Halfway Ranger Station Historic District (HRSHD) (Ferguson 2009). Although the HRSHD has been delineated and verified as eligible for National Register of Historic Places listing, the district is not officially listed. The historic importance of HRSHD relates to its association with a Federal agency, the Forest Service, and a Federal program, the Depression Era Civilian Conservation Corps (CCC), as well as the superior construction craftsmanship of buildings on the district and their representation of the nationally significant Rustic or Adirondack architectural styles. Seven of the historic buildings (Ranger Dwelling/Main Lodge, Pump House, Oil House, Outhouse/Sauna, District Office/Wolf Cabin, Warehouse/Garage, and Boathouse) are Rustic/Adirondack Style log cabins built in 1934 and 1935 by the CCC. Additionally, there is a stand-alone underground concrete cellar poured by the CCC at the site, and a balloon- framed residence, built in 1931 with funds from Herbert Hoover's Public Works Administration. The three other buildings onsite include an office and an insectary built in 1957, and an additional outhouse of uncertain age. Three additional original buildings have at one time been removed or demolished from the site (SNFHRP 2007).

### 1.3 Proposed Action

The NRS is seeking the disposition of its buildings at the Kawishiwi Field Laboratory, as the NRS has no current or future plans for the buildings and the buildings are excess to NRS needs. Alternative courses of disposition include transfer of both the ownership and the management of the buildings to another entity, transfer of management but retention of ownership of the buildings, relocation of the buildings to a site off of Superior National Forest land and relinquishment of ownership and maintenance, and demolition of the buildings.

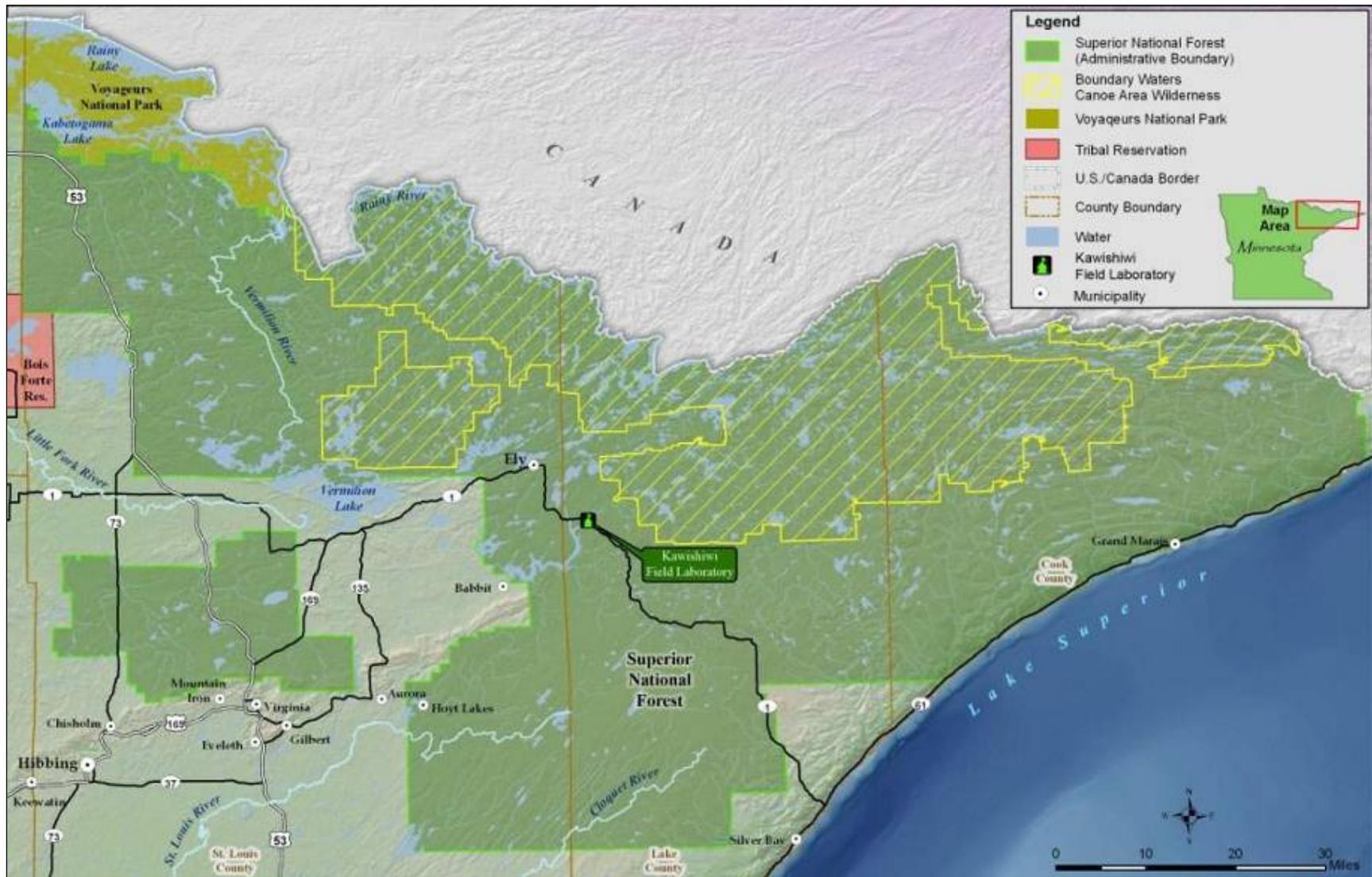


Figure 1-1. Project vicinity map

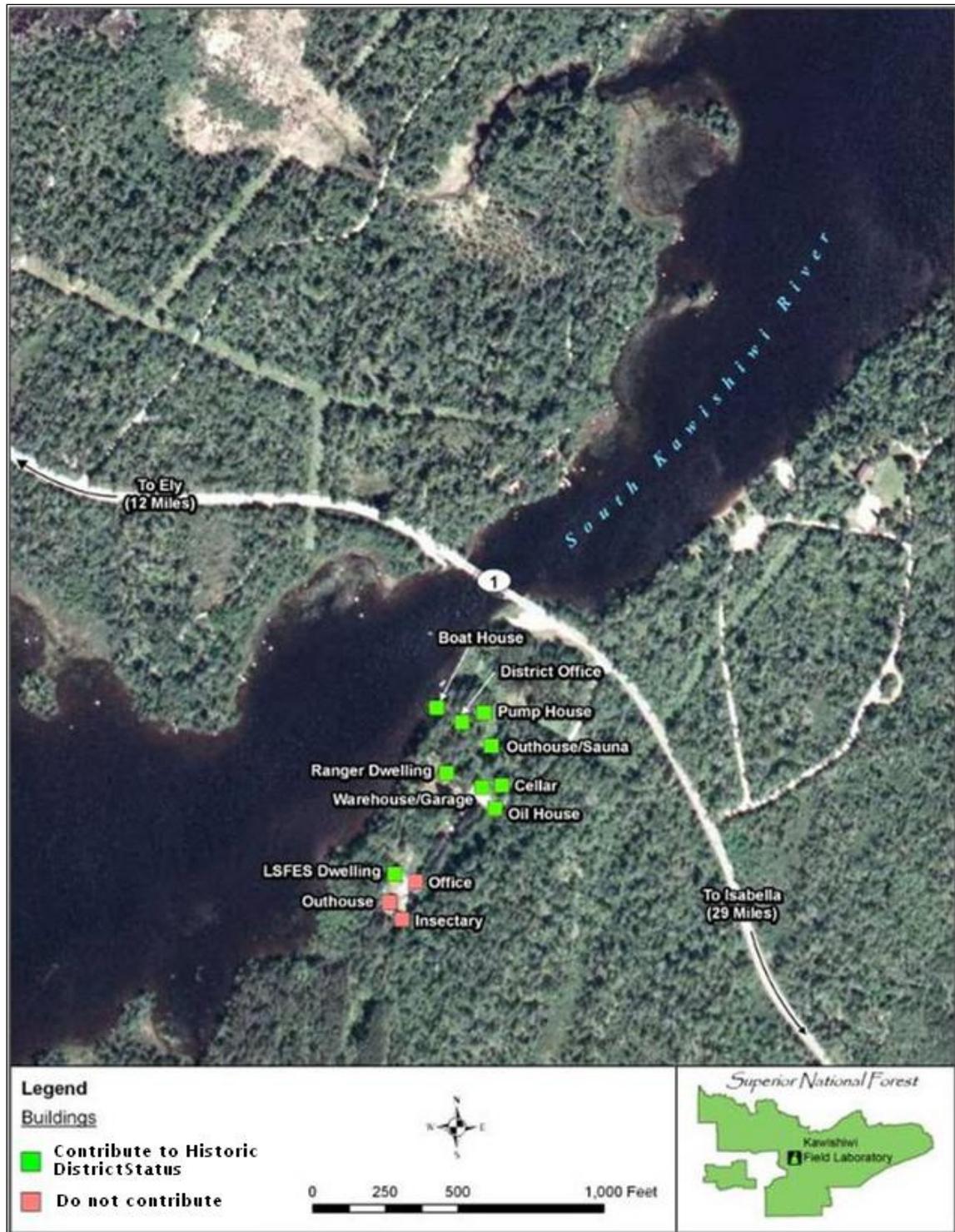


Figure 1-2. Kawishiwi Field Laboratory site map

## 1.4 Purpose and Need for the Action

The purpose of this initiative is for NRS to permanently dispose of the Kawishiwi Field Laboratory buildings, which are under NRS ownership and management. This action is needed, because the NRS has not used the buildings for over 20 years and has no future plans for the buildings. Due to lack of resources to address the high annual utility and maintenance costs, the buildings are currently deteriorating. The buildings are excess to NRS needs and do not help fulfill the mission of the USFS Research and Development Division, which is to help sustain the natural resources in the Northeast and Midwest through leading-edge science and effective information delivery (NRS 2008).

## 1.5 Existing Direction and Decision to be Made

The action proposed by the NRS to meet its purpose and need is to permanently dispose of the Kawishiwi Field Laboratory buildings. Given the purpose and need, the deciding official will use the analysis presented in this EA to determine whether any of the alternatives analyzed would meet the agency's purpose and need while not resulting in significant impacts to the human environment. If the deciding official selects an alternative that is likely to result in significant impacts to the environment, no Finding of No Significant Impact (FONSI) is appropriate. In such cases, the responsible official may then choose either to proceed with preparation of an Environmental Impact Statement (EIS); propose mitigation measures that will address the significant impacts of the proposed action, in which case a FONSI stipulating the mitigation measures would be prepared; or select to implement an alternative not likely to result in significant impacts to the environment, for which a FONSI can be prepared. If a FONSI has been prepared for the alternative chosen by the deciding official, a decision to proceed with the action will be documented in a decision notice.

## 1.6 Scope of the EA

This USFS EA analyzes the environmental impacts that would result from five action alternatives and the No Action alternative. This EA was prepared in compliance with the National Environmental Policy Act of 1969 (P.L. 91-190), the Council of Environmental Quality (CEQ) Regulations dated November 28, 1978 (40 CFR Parts 1500-1508), the USDA NEPA Policies and Procedures (7 CFR part 1B), and the Forest Service Manual Chapter 1950 and Forest Service Handbook 1909.15.

Key goals of NEPA are to:

1. provide Federal agency officials sufficient analysis and information to make well-informed decisions about agency actions;
2. ensure that Federal agencies consider the range of reasonable alternatives to proposed actions, including taking no action;
3. ensure that Federal agencies consider the impacts of their proposed actions and alternatives upon the human environment; and
4. provide the general public opportunities to scrutinize and comment upon Federal agency analysis of proposed activities.

This EA identifies, describes, and evaluates potential environmental impacts that would result from implementing each of five action alternatives and the no action alternative, taking into

consideration possible cumulative impacts from other actions. As appropriate, the affected environment and environmental consequences of the action will be described in both site-specific and regional contexts. In instances where mitigation measures may lessen any potentially adverse impacts, this EA identifies such measures that should be implemented to further minimize environmental impacts.

The following resource areas have been identified for study within this EA: geology and soils, water resources, biological resources (including threatened and endangered species), land use, cultural resources, waste and hazardous materials management, human health and safety, and socioeconomics. Resource areas considered but dismissed for further analysis are discussed below.

### *1.6.1 Public Involvement*

To support the preparation of the Kawishiwi Field Laboratory Building Disposition alternatives development process, NRS solicited input from interested parties and the general public to help identify issues, concerns, and subject matter that should be addressed in the EA. The intent of this process was three-fold:

- Provide interested parties and the general public with information about the laboratory buildings and their proposed disposition;
- Provide interested parties and the general public with the opportunity to provide input and voice any relevant issues or concerns regarding various options related to building disposition; and,
- Provide interested parties and the general public with an opportunity to propose alternative courses of action regarding the disposition of the Kawishiwi laboratory buildings.

As part of the scoping process, the NRS held two public scoping meetings on December 13, 2006. The meetings were held at the Grand Ely Lodge in Ely, Minnesota, at 1:00 to 3:00 p.m. and 6:00 to 8:00 p.m. Both sessions began with a one-hour open house, during which the public was invited to peruse display boards discussing the historical significance and current condition of the buildings, as well as an introduction to the NEPA process. Additionally, attendees were provided with a handout covering many of these same issues. The open house was followed by a presentation including representatives of the USDA-Forest Service (Research & Development: NRS and Heritage Resources Program), the USGS-Northern Prairie Wildlife Research Center, and the Mangi Environmental Group.

Public notices of the scoping process and opportunities to participate were widely distributed prior to the December 13th meetings. Public notices were published in the following local newspapers:

- Duluth News Tribune (published Wednesday, November 29)
- Mesabi Daily News (published Wednesday, November 29)
- Ely Echo (published in the weekly edition beginning November 25)
- Ely Timberjay (published in the weekly edition beginning November 30)

Public notices were also submitted to the following radio stations for broadcast as public service announcements:

- WELY 94.5FM “End of the Road Radio” Ely, Minnesota
- WEVE 97.9FM Eveleth, Minnesota
- WSCN 100.5FM/WSCD 92.9FM “Minnesota Public Radio” Duluth, Minnesota

These press releases invited all interested members of the general public to participate in the December 13th public meetings. Additionally, the NRS mailed 30 letters to Federal and state agencies and 318 letters to private groups and citizens, inviting all recipients to participate in the public meetings. The press release was also posted on the NRS website.

The general public and interested parties were invited to submit comments regarding the possible future directions of the Kawishiwi Field Laboratory buildings disposition during the scoping period, which ended January 17, 2007. Opportunities for providing comments included:

- Verbally or in writing at the December 13th scoping meetings
- Postal Mail
- Facsimile Transmission
- Electronic Mail
- Phone

In addition to comments from the general public, comments were also received from the USGS, the International Wolf Center (IWC), Vermillion Community College, Superior National Forest, NRS, Ely City Council, Ely Chamber of Commerce, and the Bois Forte Band of Chippewa.

### *1.6.2 Comments Summary*

NRS received comments from the public and from agencies that could be categorized into four themes, which NRS then classified as four distinct significant issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues are identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The CEQ NEPA regulations require this delineation in Sec. 1501.7, “...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)....” The NRS identified four significant issues during scoping:

## **Issue #1: Loss of Laboratory Would Result in Loss of Research Opportunities**

### **Comments Received Related to Issue #1**

Wolf research has been continuously based out of the Kawishiwi Field Laboratory since 1968. The wolf research based at the laboratory represents one of the longest running continuous wildlife studies in the world, and has been instrumental in developing early radio telemetry techniques for wildlife research. The laboratory has also been used for research on plant ecology, forest fire histories, recreation, and environmental impacts of mining. Also, several non-wolf wildlife studies including: beaver, loon, black bear, deer, lynx, and moose were conducted at the laboratory. The Fond du Lac band of Lake Superior Chippewa has also collaborated on research projects conducted at the laboratory.

Additionally, several local institutions use the laboratory for learning exercises and hands-on experiences for students of all ages. Vermillion Community College educators Lori Schmidt and Bill Tefft both discussed the value of the laboratory to their students' educational experiences. Lori Schmidt and Mike Nelson, USGS Northern Prairie Wildlife Research Center and IWC, discussed the partnership that Vermillion Community College has with the wolf research conducted at the laboratory; Vermillion students are frequently called upon to help collect field data, including such tasks as retrieving carcasses, and measuring and weighing animals.

Walter Medwid, Executive Director of IWC and Cree Bradley, a member of the IWC Board, discussed the value of the laboratory as a base for their educational programs for youth and adults. The proximity of the laboratory to the city of Ely, where IWC is based, has helped to facilitate this partnership. IWC has also supported the research at the laboratory, as it relates to their educational programs.

There were also queries from members of the public regarding why the NRS no longer needs the buildings for its own purposes and whether or not NRS could use the buildings at some time in the future.

- *“The lab seems like an ideal place to study the effects of global climate change in cold climates due to its proximity to the transition zone of the deciduous forest, coniferous forest, and prairie ecosystems.”* (Chuck Wick, a former ranger in the Superior National Forest and former educator at Vermillion Community College)
- There is a concern that the loss of the Kawishiwi Field Laboratory would represent a loss of forest research opportunities in the Superior National Forest.
- There is some question of whether or not the buildings could be maintained by NRS for use other than research, namely an interpretive center.
- There is also a concern that the disposition of the buildings would set a precedent for the disposition of other USFS buildings that are no longer used but located at the Superior National Forest.

### **Response to Issue #1**

The implications of building disposition on the wildlife research conducted out of the Field Laboratory are discussed in Section 3.4, Biological Resources. As for any potential future use of the buildings by the NRS, the NRS has no plans to use the buildings for future research, and

developing and maintaining an interpretive center is not consistent with the mission of NRS or the USFS Research and Development Division; nor does NRS have funding to consider this alternative. The NRS does not believe that this action sets a precedent, as the NRS does not own or maintain any other structures within the Superior National Forest.

### ***Issue #2: Mining Interests May be Hidden Motive***

#### **Comments Received Related to Issue #2**

Some members of the public have expressed concern that the impetus behind the need for disposition of the buildings is related to nearby mining interests. During scoping meetings, a gentleman in the audience reported that when management of the majority of the Kawishiwi Experimental Forest was reverted back to the Superior National Forest, several mining operations began in the region at about the same time.

#### **Response to Issue #2**

Mining is taking place in the surrounding area ( $\frac{1}{4}$  to  $\frac{1}{2}$  mile from the laboratory), but there is no known connection between the building disposition at the laboratory and mining interests. A discussion of mining as it relates to the Kawishiwi Field Laboratory can be found in Section 3.5, Land Use.

### ***Issue #3: Historical Significance of the Buildings is Important to Community***

#### **Comments Received Related to Issue #3**

During the scoping meetings held for the proposed project, public interest in maintaining the Kawishiwi Field Laboratory buildings for their historical importance to the area and as a marker of a point in time in the country's history was noted several times. There are many local connections to the buildings in terms of the men who built them and the construction materials.

Specific comments related to the buildings and their historical value included comments on maintenance requirements, bringing the buildings up to date with current building codes in light of their historic significance, what the loss of the location would mean to their historic eligibility if the buildings were to be relocated, and, if the buildings were to be relocated, whether or not all of the buildings would need to be moved together and reassembled in the current layout.

#### **Response to Issue #3**

Maintenance requirements of the historic structures have not yet been determined, and would be finalized only after comprehensive consultation and coordination with the SHPO. The historic value of the buildings is described and analyzed in Section 3.6, Cultural Resources. Additional details pertaining to the relocation of the buildings can be found in Section 2.6, under the description of Alternative 5: Relocation of Buildings.

## ***Issue #4: Current Condition of the Buildings May Pose Safety Risk***

### **Comments Received Related to Issue #4**

There have been some concerns expressed regarding the current state of disrepair of some of the buildings (not being up to fire protection codes, the presence of asbestos, and the deteriorating structural support of the buildings), and the corresponding potential risks to the safety of building visitors, including the USGS researchers who currently use using the buildings.

### **Response to Issue #4**

The presence of hazardous or potentially dangerous materials in the buildings at the project site, including asbestos and lead, is discussed in Section 3.7, Waste and Hazardous Materials. The implications of the current state of disrepair of the buildings on the safety of building visitors and occupants are discussed in Section 3.8, Human Health and Safety.

### ***1.6.3 Key Issues***

Key issues are used to develop alternatives and mitigation measures. Four key issues were identified during the scoping process, as described above. Analysis of these key issues in addition to a comprehensive evaluation of potential environmental impacts stemming from each of the proposed project alternatives necessitated the evaluation of the following resource issues within this EA: geology and soils, water resources, biological resources, land use, cultural resources, waste and hazardous materials management, human health and safety, and socioeconomics.

### ***1.6.4 Resource Topics Dismissed from Further Analysis***

#### ***Wild and Scenic Rivers***

The National Wild and Scenic Rivers Act is administered by four Federal agencies; the Bureau of Land Management, the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. The Act protects selected rivers, and their immediate environments, which possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. In the State of Minnesota, there is only one National Wild and Scenic River, the St. Croix River.

The St. Croix River is a 164-mile-long tributary of the Mississippi River. The river originates approximately 20 miles south of Lake Superior in Wisconsin, and the lower 125 miles of the river form the state line between Minnesota and Wisconsin. The St. Croix River and its watershed will not be affected by the proposed project in any way. Therefore, this topic is dismissed from further analysis.

#### ***Air Quality***

The Clean Air Act of 1977 is the primary regulatory authority used by the Minnesota Pollution Control Agency (MPCA) to protect the state's air quality. In addition to the Clean Air Act, state law grants broad authority to the agency to protect Minnesota's air. Under the requirements of the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) regulates seven air pollutants, known as criteria pollutants. The seven criteria pollutants are carbon monoxide (CO); lead; sulphur dioxide (SO<sub>2</sub>), nitrogen oxide (NO); ozone (O<sub>3</sub>); particulate matter with diameters of 10 micrometers or less (PM<sub>10</sub>); and particulate matter with diameters of 2.5 micrometers or less

(PM<sub>2.5</sub>). Additional hazardous air pollutants and other toxics, including mercury, are regulated under the Clean Air Act Amendments of 1990.

For each criteria pollutant, the maximum concentration above which adverse effects on human health may occur is called a National Ambient Air Quality Standard (NAAQS). Attainment means that the levels of criteria pollutants in a particular area are less than the NAAQS. Non-attainment means that the levels of criteria pollutants in the air are at or above the NAAQS in an area. All of Minnesota is currently in attainment for all seven criteria pollutants, although the MPCA is concerned about the growing concentrations of ozone in the Minneapolis/St. Paul metropolitan region (MHR 2002).

None of the alternatives under consideration for Kawishiwi Field Laboratory building disposition involve a stationary source of air emissions. However, two of the alternatives under consideration for building disposition (relocation and demolition) would require the use of heavy equipment, such as graders, bulldozers, backhoes, dump trucks, cranes and other diesel- and gasoline-fueled equipment, which would intermittently emit non-stationary source quantities of five criteria air pollutants: CO, NO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, in addition to Volatile Organic Compounds. The emission rates of the equipment used on site are considered to be *de minimis* (of minimal importance) rates and would not impact regional air quality.

In addition to tailpipe emissions from heavy equipment, the temporary disturbance of the ground surface during excavation and grading activities could potentially generate fugitive dust. Fugitive dust can affect public health, especially if laden with hazardous materials. The type and severity of the effects depend in large part on the size and nature of the dust particles as well as the length of exposure. The types of effects that can occur include inhalation of fine particles that can accumulate in the respiratory system causing various respiratory problems including persistent coughs, wheezing, eye irritations, and physical discomfort. Construction personnel would be expected to implement reasonable measures, such as applying water to exposed surfaces or stockpiles of dirt, when windy and/or dry conditions promote problematic fugitive dust emissions. Adhering to reasonable measures would minimize any fugitive dust emissions. Use of mitigation measures would further reduce the possibility of adverse impacts from fugitive dust emissions. Overall, impacts from fugitive dust emissions would be negligible. Because impacts to air quality from the proposed action would not have a measurable impact on air quality, this topic is dismissed from further analysis.

### ***Traffic***

Minnesota Highway 1 provides direct vehicle access to the Kawishiwi Field Laboratory site, via a short unpaved road which forms a loop off of Highway 1. At 346 miles in length, Highway 1 is the longest state route in Minnesota and often accommodates slow-moving equipment transports and log transportation trucks. Additionally, the site can be accessed from the west via boat on the South Kawishiwi River. Though Alternative 5, Relocation of the Buildings, would temporarily involve the use of large, slow-moving vehicles, none of the project alternatives would create more than a temporary increase in traffic on Highway 1, which would be considered negligible relative to background use of the highway. Therefore, this impact topic is dismissed from further analysis.

### ***Noise***

Noise is generally defined as unwanted sound. Noise can influence humans or wildlife by interfering with normal activities or diminishing the quality of the environment. Noise levels heard by humans are dependent on several variables, including distance, ground cover, and

objects or barriers between the source and the receiver, as well as atmospheric conditions. Certain land uses, facilities, and the people associated with these noise levels are more sensitive to a given level of noise than other uses. Such “sensitive receptors” include schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, hiking trails, and some species of threatened or endangered wildlife. The closest sensitive receptor to the project site is the Boundary Waters Canoe Area Wilderness (BWCAN), located approximately 4 miles northeast of the site.

Current uses of the Kawishiwi Field Laboratory site do not generally create noises audible offsite or noises that are disruptive to wildlife or humans. If the future land uses of the site were to change, the Superior National Forest would be instrumental in approving any such land uses and would ensure that they were compatible with the surrounding environment and posed no disruption. Noise associated with either disassembling and relocating the buildings on site or demolition activities should be minimized by limiting such activities to daylight hours and by using properly maintained and muffled equipment. Hearing protection equipment would be required for sound levels that exceed Federal workplace standards. Provided the preceding steps are taken, no impacts from noise are anticipated from the proposed project, and this topic is therefore dismissed from further analysis.

### ***Environmental Justice***

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. There are no residential areas in the immediate vicinity of the Kawishiwi Field Laboratory, and the proposed project would not result in any measurable level of change to the socioeconomic environment of the area. The field laboratory is located within Lake County, and the nearest municipality is Ely, Minnesota. Both Lake County and Ely have very low minority populations (less than 3 percent and 4 percent, respectively) (USCB 2008, USCB 2000a). No minority or low-income populations are anticipated to be adversely impacted by the proposed project. Therefore, this topic is dismissed from further analysis.

## 2 Proposed Action and Alternative Actions

### 2.1 Introduction

This section discusses several possible alternative courses of action the NRS could take to meet the purpose and need discussed in the previous section. The alternative of taking no building disposition action and no action to protect the buildings, the No Action alternative (Alternative 1), is discussed but does not meet the project's purpose and need. Alternative 2 involves increasing maintenance so that the buildings can be rehabilitated and properly maintained. Four of the five action alternatives (alternatives 3 through 6) are forms of disposition of the Kawishiwi Field Laboratory buildings from NRS' management or from both NRS' management and ownership.

For the purpose of the impacts analysis of Alternatives 3 through 6, many possible scenarios of potential future management, ownership, and reuse of the buildings are considered under the description of the alternatives in this section. These scenarios are based on the best available information at this time of what actions could occur under the respective alternatives. These scenarios describing potential future use and reuse of the site provide a basis for a full impacts analysis of the respective alternatives, but the scenarios are in no way binding or limiting. The analysis of Alternatives 3 through 6 is, where possible, based on the maximum predictable impacts which could arise from each of the alternatives.

NRS is considering a wide range of alternatives regarding the future of the buildings; however, none of the alternatives will affect the land underlying the buildings. Superior National Forest will retain ownership of the land regardless of the alternative.

### 2.2 Alternative 1: No Action Alternative

Under the No Action alternative, no disposition of the Kawishiwi Field Laboratory buildings would occur. NRS would retain ownership and management responsibility for the buildings. NRS has no plans to use the buildings in the future and does not plan on rehabilitating any of the buildings. The buildings would continue to deteriorate without needed rehabilitation and maintenance funding and effort. The current condition of most of the buildings is fair to poor, due to several decades of neglect. Ongoing problems include rotting wood (see Figure 2-1), extensive powder post beetle infestation resulting in loss of density in the wood, substandard plumbing, inadequate heating infrastructure, and rodent and bat infestations. The issues of rotting wood and loss of density of the wood, in particular, can be expected to worsen as time continues. These issues make the buildings increasingly unsound and unsafe, and decrease the possibility of successful rehabilitation of the buildings, as the funding and effort required to restore the buildings increases each year. It can be assumed under this alternative that the buildings would continue to be used for ecological research by the USGS and other research institutions, as long as research needs warrant.



**Figure 2-1. Roof Damage Example**

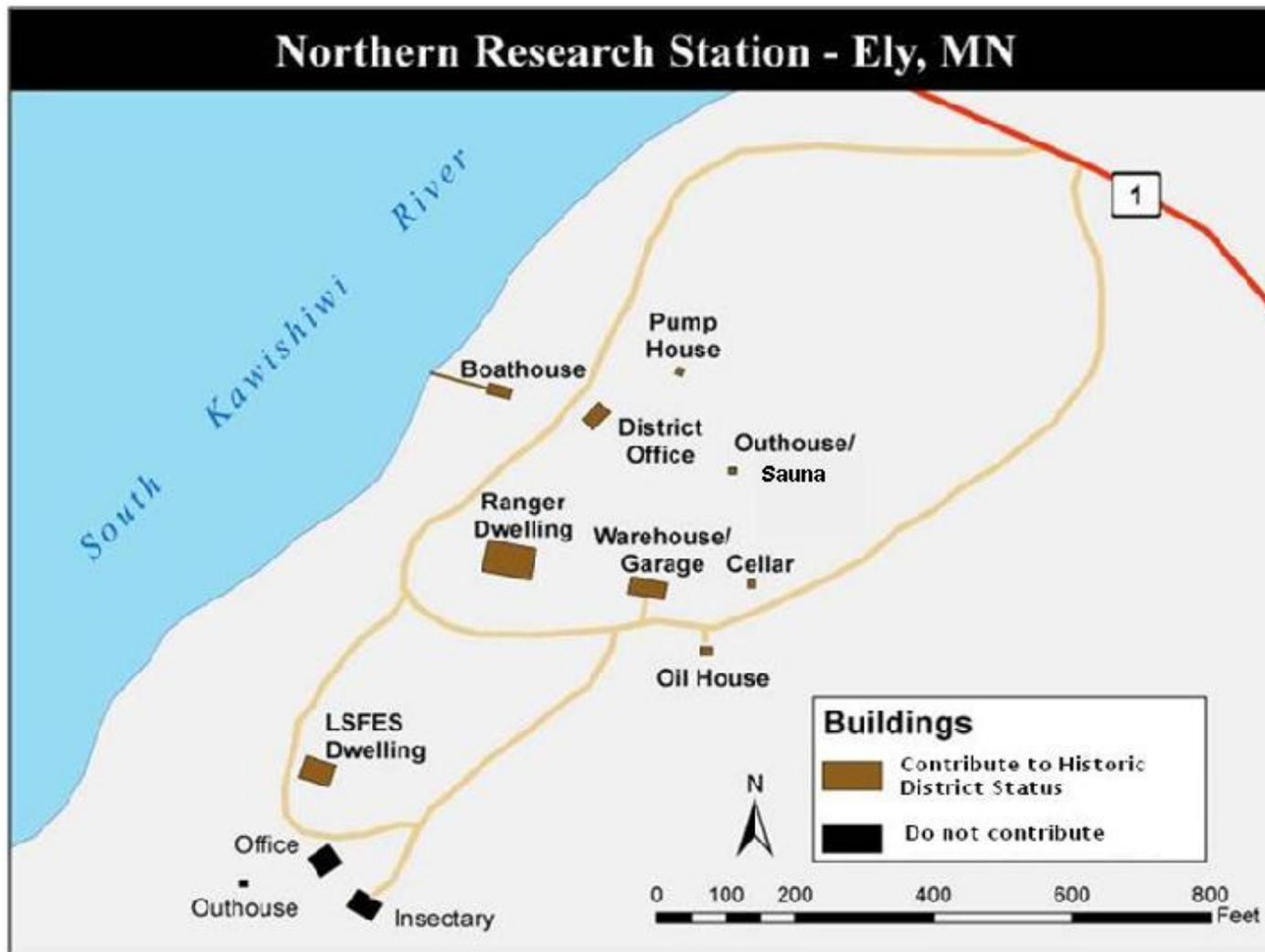


Figure 2-2. Kawishiwi Field Laboratory layout



**Figure 2-3. Ranger Dwelling/Main Lodge**

- Built in 1934 by the CCC
- Craftsman Style
- Similar to Dwellings at Tofte and Isabella
- The interior is largely unchanged over time unlike at the Ranger Dwellings at Tofte and Isabella; therefore it retains more historical significance
- Full basement

**Current Conditions:** Fair; routine maintenance largely ignored, but no major repairs are needed. Problems with bats and bat guano are ongoing.



**Figure 2-4. Pump House**

- Built in 1935 by the CCC
- The foundation was reconstructed in 1964 using a concrete slab in place of the previous foundation of unknown material
- The original door has been replaced
- An exhaust stack comes through the roof

**Current Conditions:** Generally good; powder post beetle infestation prevalent and could compromise the building if untreated.



**Figure 2-5. Oil House**

- Built in 1935 by the CCC
- There is a cross-gable roof over the front door, covered with asphalt shingles
- The foundation is a poured concrete slab

**Current Conditions:** Poor; largely as a result of insect infestations.



**Figure 2-6. Cellar**

- Built in the early 1930s by the CCC
- Constructed into hillside and consists of concrete walls and an earthen floor
- Originally used for storing food during construction and later used for storing trees and other forestry supplies
- Has an above ground ventilation and refrigeration system, which appears to be electric, although it is not clear if it is functional

**Current Conditions:** Generally good.



**Figure 2-7. Outhouse/Sauna**

- Built in 1935 by the CCC
- Originally used as an outhouse; later converted to a sauna. This involved removal of the bench and installation of a woodstove.

**Current Conditions:** Ongoing insect infestations have caused severe deterioration. It is not useable.



**Figure 2-8. District Office/Wolf Cabin**

- Built in 1935 by the CCC
- Wood burning stove historically present
- Currently no usable indoor plumbing or heat

**Current Conditions:** Many areas of disrepair: plumbing is in poor condition and not up to code, concrete at the front entry needs replacement, and there is an active powder post beetle infestation.



**Figure 2-9. LSFES Dwelling/Bunkhouse**

- Built in 1931
- Balloon-Frame Structure
- Oldest remaining administrative building in the Superior National Forest
- Funding for construction provided by Hoover administration's Public Works Program
- First admin building in the forest with a bathroom

**Current Conditions:** Good. Original siding and trimwork are intact, but need some attention.



**Figure 2-10. Warehouse/Garage**

- Built in 1934 by the CCC
- Foundation comprised of cement masonry units with a poured-concrete slab
- Original doors have been replaced
- Roof trusses are adjustable to allow for tightening of the turnbuckles as the structure settles
  - This prevents the walls from bowing outward as the structure settles
  - Settling is a universal issue in log dwellings

**Current Conditions:** Generally fair; a powder post beetle infestation is ongoing; and some wood is rotting.



**Figure 2-11. Boathouse**

- Built in 1935 by the CCC
- The structure is one story high and a dock is present
- It features a four-panel sliding front door
- The dock was replaced in 1979, nothing is known of the previous dock

**Current Conditions:** Fair; experiencing a powder post beetle infestation.



**Figure 2-12. Office**

**Buildings constructed in 1957, and not built by the CCC:**

**Office**

- Used as office workspace
- Generally well maintained, no major issues

**Insectary**

- Total disrepair; not used

**Southern Outhouse**

- Total disrepair; not used
- Construction date not known



## 2.3 Alternative 2: Increase of Maintenance Funds

Alternative 2 consists of increasing the maintenance funds for the Kawishiwi Field Laboratory buildings, so that the buildings can be adequately rehabilitated and maintained. The current use of the buildings for wildlife research by USGS personnel would continue.

Increased funding for the buildings would have to be drawn from NRS' overall budget. At a higher level, NRS is one of five research stations of the USFS Research and Development Division; in addition to the research stations, the Division includes the Forest Products Laboratory and the International Institute of Tropical Forestry located in Puerto Rico. The Fiscal Year (FY) 2007 budget for the entire USFS Research and Development Division was \$283 million. Of this amount, \$52,312,000 was allocated to the NRS (USFS 2007).

The NRS maintains 610 employees, 24 field locations, 20 experimental forests, 14 research work units, and forest inventory and monitoring for 24 states (NRS, 2008). The NRS does not currently and will not in the future have funding specifically allocated for the maintenance of buildings which are excess to its needs. Increased maintenance funds for the Kawishiwi Field Laboratory would have to come from the funding currently allocated to one of the five research areas which the NRS pursues:

- Forest Disturbance Processes
- Urban Natural Resources Stewardship
- Sustaining Forests
- Providing Clean Air and Water
- Natural Resources Inventory, Monitoring, and Assessment

(Source: NRS 2008)

Redirecting funding from research efforts to building maintenance would conflict with the mission of the NRS.

## 2.4 Alternative 3: Transfer of Ownership and Management

Alternative 3 would involve the transfer of both the ownership and management of the Kawishiwi Field Laboratory buildings to another agency or entity. As previously stated, NRS has no need for the laboratory buildings and has not had any active research projects in the facility since the 1980s. The USGS and other research institutions have been using the facilities since that time.

Transferring ownership of the buildings would require identifying an agency or entity willing to take responsibility for ownership and all management requirements of the buildings. Specific maintenance requirements would be coordinated with the SHPO and recorded as part of the deed, as the buildings would have to be maintained as historic structures. A cost of the buildings has not yet been determined, but the buildings would possibly go to the Superior National Forest or to the highest bidder approved by the Superior National Forest. As the land would remain under the ownership of the Superior National Forest, a Special Use Permit for access to and use of the land would have to be coordinated and issued by the Forest if an outside agency or entity requested access to and use of the site. In response to inquiries about disposition of buildings on the Kawishiwi Field Laboratory, the Superior National Forest stated that no Special Use Permits would be issued authorizing the buildings to stay, but not be owned or managed by NRS (see letter, Appendix A). The Superior National Forest's position on issuing a Special Use Permit for the change in ownership and maintenance of the buildings would need to be reversed under this

alternative. Issuing a Special Use Permit for transfer of ownership and maintenance of the buildings would be consistent with the forestwide goals and objectives of the Superior National Forest, which include the following:

- Provide management direction that enhances social and economic benefits for individuals and communities (forestwide Goal #7);
- Identify and manage heritage resources to maintain and preserve the qualities for which they have been deemed significant, and for benefits that may include: research, education, historical perspectives in land management, and the general appreciation of American heritage (D-HR-1);
- Attempt to meet demand for special use activities when consistent with the Forest Plan direction and when the proposed use cannot be accommodated on non-National Forest Service land (O-SU-2); and,
- Allow presently unused facilities, currently not under permit, to be placed under permit for a 5-year term, if there is a demonstrated need. Consider proposals for new camps to be constructed where the proposed use would meet a specific public demand that cannot be met on other ownership (O-SU-5).

(Source: USFS 2004)

Provided a Special Use Permit can be issued for the buildings, several entities and interested parties have expressed interest in acquiring ownership and maintenance responsibilities for the buildings. The Minnesota Conservation Corps (MCC), a direct descendent of the CCC, has expressed great interest in preserving the buildings and partnering with Federal, state, and local land-managements agencies, and with nonprofits, to offer programs and opportunities at the site related to their mission of providing hands-on environmental stewardship and service-learning opportunities to youth and young adults while accomplishing priority cost-effective conservation, natural resource management projects and emergency response work (Hagberg 2007).

Other suggestions for potential reuse of the site by other entities have included conversion of the site to a designated recreation site or resort, privatization of the site to homesteads, and funding assistance to keep the research focus of the site active from entities such as the IWC and the local Ely community and government.

The USGS Northern Prairie Wildlife Research Center, which currently utilizes the site for research, has consistently declined offers to assume ownership and management responsibilities for the buildings (see Appendix A). They do wish, however, to be able to continue using the buildings for as long as their research needs dictate. The availability of the site to the USGS would be at the discretion of the entity assuming new ownership of the buildings.

Likewise, the Superior National Forest does not want to assume ownership or management responsibility of the buildings. Superior National Forest is still attempting to sell off its final property located at the Isabella Ranger Station Historic District, known as Trappers Landing Lot 5 (USFS 2008a). The sale of the buildings at the Isabella Ranger Station Historic District is part of a nationwide trend in which national forests are disposing of little-used or abandoned properties to reduce the backlog of unfunded repairs and maintenance, which is estimated at about \$1.2 billion. The Superior National Forest has more than \$7 million in backlogged maintenance work (DNT 2006).

## 2.5 Alternative 4: Transfer of Management

Alternative 4 would involve transferring management of the Kawishiwi Field Laboratory buildings to another entity. NRS would retain ownership of the buildings under this alternative. This would only partially support the purpose of the proposed project, which is for NRS to permanently dispose of the buildings.

Under this alternative, a lease agreement or similar type of property agreement would be signed between the NRS and the entity willing and able to assume management responsibility of the buildings. The Superior National Forest would be involved in this agreement, and would likely have to issue a Special Use Permit for the access to and use of the land. Similar reuses of the buildings as mentioned under alternative 3 would be considered likely. The buildings would have to be maintained as historic structures, as per coordination with the SHPO. The USGS has previously stated that it does not have the required funding available to address the maintenance and management issues of the Kawishiwi Field Laboratory buildings, and continued use of the site by the USGS would be at the discretion of the entity willing to assume maintenance responsibility and cost.

## 2.6 Alternative 5: Relocation of Buildings

Alternative 5 would involve the partial dismantling and subsequent relocation of the Kawishiwi Field Laboratory buildings from the site. The buildings that are removable would be relocated to a yet to be determined location offsite, off of Superior National Forest land. This location would be owned by an entity willing and able to assume the relocation costs and willing and able to take responsibility for the future maintenance of the buildings as historical structures. This would likely require a significant initial investment, which has been projected to range from \$200,000 to over \$1 million. Annual long-term maintenance costs are not currently available. Federal tax credits may be available to help assist the entity assuming ownership, if the buildings are reassembled and maintained in accordance to stipulations pertaining to their historic significance.

Buildings that may be able to be moved from the site include the Ranger Dwelling/Main Lodge, Pump House, Oil House, Outhouse/Sauna, District Office/Wolf Cabin, Warehouse/Garage, Boathouse, Lake States Forest Experiment Station (LSFES) Dwelling/Bunkhouse, and the Office. Some or all of these buildings would be relocated under this alternative.

Due to its structure (poured concrete located within the hillside), the cellar would not be moveable. Additionally, the condition of the insectary and second outhouse prohibit their relocation. These three structures would require a combination of demolition and abandonment in place.

Before moving, the original setting and context of the site would be documented. Consultation and coordination with the SHPO would determine additional requirements. Removal of the buildings would undermine any historical significance of the HRSFD. The buildings would, however, retain characteristics that contribute to their historical significance, such as craftsmanship and architectural styles. Keeping the buildings together and within the Ely region would help to mitigate some, but not all of the historical losses.

Due to the landscape and road conditions at the project site, it is considered likely that the buildings which are removable would be at least partially disassembled prior to moving. Disassembling the buildings would be a laborious process. Each wooden log, its position and adjoining logs would be marked properly before dismantling so that the pieces would fit back

together when reassembled. If rotten and unusable logs are found, all measurements would be taken of them, and replacement logs would be crafted in the exact likeness of the original logs. Contractors experienced in moving historic buildings would work on the disassembly, relocation, and reassembly of the structures. This would require the use of heavy machinery, trucks, and trailers. Activities related to demolition of the structures left onsite (at a minimum, the cellar, insectary, and second outhouse), would require the use of dump trucks, cranes, excavators and other heavy equipment.

## 2.7 Alternative 6: Demolition of Buildings (Proposed Action)

Alternative 6, the action the NRS proposes to implement, would consist of demolishing the Kawishiwi Field Laboratory buildings on site. The Superior National Forest would retain ownership of the land, and would have sole discretion and decision-making authority regarding future land reuses. It is anticipated that following building demolition, the land would be at a minimum regraded and reseeded with native plant vegetation.

Prior to any demolition activities, all site details and historically significant structures would be photographed and documented to meet Library of Congress standards for the Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), and Historic American Landscapes Survey (HALS).

Demolition of the laboratory buildings would require the use of heavy equipment, such as elevated work platforms, dump trucks, cranes, excavators, graders, bulldozers and other diesel- and gasoline-fueled equipment. It would take several weeks or months to prepare the buildings for demolition. All items of value, such as historic objects and copper wiring, would be stripped from the buildings. Other materials removed prior to demolition would include all glass and other materials which can scatter or form projectiles when demolished. Additionally, any and all materials containing dangerous or hazardous materials such as asbestos or lead would be properly abated and disposed of prior to demolition, in accordance to Federal and state regulation.

## 2.8 Mitigation Measures

All future actions proposed as part of this project should employ the following mitigation measures to ensure that environmental impacts from maintenance, demolition, or structure relocation activities are minimized to the greatest extent possible. Adherence to the following mitigation measures, in conjunction with adherence to all applicable and appropriate local, state, and Federal regulations and permits, should ensure that the environmental impacts resulting from building disposition at the Kawishiwi Field Laboratory are minimized to the greatest extent possible.

### **Soil**

- Incorporate and maintain best management practices (BMP) into any disassembly or demolition activities that disturb the soil surface or vegetation; BMPs typically consist of various erosion and sediment control measures such as silt fences, straw bales, and other temporary measures to be placed in low lying areas and along portions of the site perimeter to control erosion and trap transported sediments on site during activities which could cause soil to be exposed and displaced. These temporary erosion prevention measures should be maintained in place until new site vegetation is firmly established and soil has stabilized. Erosion and sediment control measures should be inspected on a regular schedule, as well as after any storm event.

- Store and maintain all fuels in a designated equipment staging area to reduce the potential for soil contamination. Designate a person(s) as being responsible for equipment fueling who closely monitors the fueling operation, and have an emergency spill kit containing absorption pads, absorbent material, a shovel or rake, and other cleanup items, readily available on site in the event of an accidental spill.
- Stabilize and revegetate all disturbed areas with native plant vegetation following commencement of project implementation activities. Proper seed selection will result in native plants with deep root systems, which will stabilize soils, foster greater infiltration, and reduce runoff from the site.

### ***Water Resources***

- Place BMPs along portions of the site perimeter to control erosion during all soil exposing and demolition activities. Under all circumstances, sediment runoff from the site should be captured and prevented from entering the Kawishiwi River.
- If a National Pollution Discharge Elimination System/State Disposal System (NPDES/SDS) permit is not required for the site due to the footprint of the proposed disturbance, ensure that BMPs related to storm water runoff components are in place and working correctly; loose sediment, fuels, oils, and other potential contaminants have the ability to migrate throughout project implementation processes.

### ***Cultural Resources***

- To minimize the adverse impacts of transferring significant cultural resources out of Federal control, relocating cultural resources, or demolishing cultural resources, the NRS will coordinate with the SHPO and address all of SHPO's recommendations to the extent possible in order to mitigate impacts to the site. As stated under alternative 6, in the case of demolition of buildings, NRS would document all site historic resources to the HABS/HAER/HALS standard. The NRS will also notify the Advisory Council on Historic Preservation of its actions, so it has the opportunity to participate in the project mitigations and advise the NRS of additional recommended courses of action to ensure that impacts to cultural resources are minimized as much as possible.

### ***Air Quality***

- Implement reasonable measures, such as applying water to exposed surfaces or stockpiles of dirt, when windy and/or dry conditions promote problematic fugitive dust emissions. Adhering to these BMPs would minimize any fugitive dust emissions.

### ***Waste Management***

- Recycle and/or reuse as many materials as possible during all building upgrade or demolition activities to minimize the amount of waste generated by the project.

## 2.9 Comparison of Alternatives

This section presents a summary table (table 2-1) of the impacts of the alternatives. The impacts are based on the effect the respective alternatives presented in this chapter would have on the affected environment discussed in Chapter 3. The full analysis of the alternatives is also included in Chapter 3. While it is not known exactly what potential future uses and reuses of the buildings and Kawishiwi Field Laboratory site may occur under each alternative, the impacts are the maximum predictable impacts from the most likely scenario of the alternative. The scenarios upon which the impacts analysis is based are in no way binding or limiting to the future actions of NRS.

**Table 2-1. Comparison of the impacts of the alternatives**

<i>Topic or Resource Area</i>	<b>Alternative 1 No Action</b>	<b>Alternative 2 Increase Funds</b>	<b>Alternative 3 Transfer Ownership &amp; Maintenance</b>	<b>Alternative 4 Transfer Management</b>	<b>Alternative 5 Relocation</b>	<b>Alternative 6 Demolition</b>
<i>Purpose and Need for Project</i>	Does not meet purpose and need	Does not meet purpose and need	Fully meets purpose and need	Partially meets purpose and need	Fully meets purpose and need	Fully meets purpose and need
<i>Geology and Soils</i>	No Impact	No Impact	Short-term, negligible impacts from potential site upgrades	Negligible impacts	Localized, short-term, adverse minor impacts from soil disturbing activities	Localized, short-term, adverse minor impacts from soil disturbing activities
<i>Water Resources</i>	Short-term, adverse minor impacts to Kaw. River possible from fragmenting of dilapidated buildings	No Impact	Negligible impacts	Negligible impacts	Temporary, adverse minor impacts from work on Boathouse/dock	Temporary, adverse minor impacts from work on Boathouse/dock
<i>Biological Resources</i>	Negligible, direct impacts & indirect long-term, beneficial impacts from wildlife research	Direct, long-term, minor impacts to wildlife from maintenance activities & indirect long-term, beneficial	Direct, localized, negligible to moderate impacts from reuse & possible indirect long-term, adverse major impacts from	Short-term, localized, negligible to minor impacts from increased maintenance. Possible indirect, adverse, long-term, major impacts from	Long-term, beneficial impacts from revegetation/ reclamation of the area. Indirect, adverse, long-term, major impacts to from loss of wildlife	Long-term, beneficial impacts from revegetation/ reclamation of the area. Indirect, adverse, long-term, major impacts to from loss of wildlife

		impacts from wildlife research	loss of wildlife research	loss of research	research	research
<b>Land Use</b>	Negligible impacts	Negligible impacts	Beneficial, localized, and minor impacts	Beneficial, localized, and minor impacts	Temporary, localized adverse impacts; long-term impacts unknown	Temporary, localized adverse impacts; long-term impacts unknown
<b>Cultural Resources</b>	Long-term, adverse, potentially significant impacts due to loss by neglect	Long-term, major beneficial impacts	Adverse impacts which can be at least partially mitigated	Long-term, beneficial impacts; any adverse impacts can be mitigated	Long-term, adverse impacts which can be somewhat mitigated; impacts still major	Long-term, adverse, impacts, mitigated by HABS/HAER/HALS documentation
<b>Waste and Hazmat Mgmt</b>	No impact	Temporary, minor adverse impacts	Temporary, minor adverse impacts	Temporary, minor adverse impacts	Short-term, minor adverse impacts	Short-term, minor adverse impacts
<b>Human Health and Safety</b>	Long-term, adverse, localized, and major impacts to building occupants and visitors	Long-term, beneficial, localized, and moderate impacts to building occupants and visitors	Long-term, beneficial, localized, and minor to major impacts to future building occupants and visitors	Long-term, beneficial, localized, and minor to major impacts to future building occupants and visitors	Temporary, minor, adverse, and localized impacts from site activities; long-term, beneficial impacts	Temporary, minor, adverse, and localized impacts from site activities; long-term, beneficial impacts
<b>Socioeconomics</b>	Negligible short-term impacts; adverse, minor, long-term impacts	Negligible onsite impacts; unknown NRS impacts	Negligible impacts	Negligible impacts	Negligible onsite impacts; unknown impacts at transferred location	Negligible impacts

## 2.10 Cumulative Impacts

CEQ regulations (40 CFR 1508.7) require an analysis of the cumulative impacts resulting from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes these other actions. Cumulative impacts can result from individually minor, but collectively significant, actions. This cumulative impacts section of the EA addresses the cumulative effects arising from considering the Proposed Action in combination with other ongoing actions at, or in the vicinity of, the Kawishiwi Field Laboratory.

The Superior National Forest maintains and implements projects on a continuous basis; these projects are generally consistent with forestwide goals as expressed in the Forest Plan. Key goals cited in the Forest Plan include promoting ecosystem health and conservation; protecting, and where appropriate, restoring soil, air and water resources; and, providing for sustained forest product uses in an environmentally acceptable manner (USFS 2004b). The following are some examples of routine Superior National Forest activities that have occurred in the past and will occur in the future: timber harvest, wildlife habitat improvement projects, prescribed burn projects, watershed improvement or restoration projects, and trail or road construction (USFS 2004b). It is not anticipated that any of the building disposition project alternatives would contribute cumulative impacts to routine Superior National Forest activities.

There has been a renewed interest in mining in the Kawishiwi area for copper, nickel, silver, platinum and palladium. There are several mining claims within the vicinity of the field laboratory. Some individuals have expressed concern that relocation or demolition of the buildings would free up the land underlying the Kawishiwi Field Laboratory to mining interests; under either of these alternatives the future reuse of the land is the discretion of the Superior National Forest, with appropriate public input. There is no known connection between the increased mining interests in the area and the building disposition alternatives. Further, mining is not considered a potential future use of the site. It is therefore not considered likely that this project would contribute cumulatively to mining impacts in the area.

Similarly, timber harvesting at the Superior National Forest has increased in recent past. Under the previous Forest Plan, the average rate of logging was 75 million board feet per year. According to the USFS Final EIS, the new Forest Plan allows for 1.02 billion board feet within a 950,000-acre area, to be harvested over the next 10 years. This constitutes a harvest increase of over 25 million board feet per year. Two major areas proposed for harvesting in the Kawishiwi Ranger District include the Big Grass Timber Sale and the Tomahawk Timber Sale; both of these sites have caused area controversy. However, because the proposed project alternatives would not facilitate timber harvest or provide valuable timber, this project is not considered to contribute cumulative impacts to overall timber harvesting at Superior National Forest.

The National Forest System has management responsibility for approximately 193 million acres of public land containing an estimated two million cultural resource sites; while the USFS has identified nearly 325,000 cultural resource sites within the System, the agency “lacks the statutory guidance and funding to adequately care for these known sites and to identify and evaluate the remaining 80 percent of USFS lands that have not been surveyed for cultural resources” (NTFHP 2008). Heritage Programs, programs designed to maintain and support cultural resources in national forests, account for approximately 0.4 percent of the total USFS appropriated budget of \$4.4 billion (FY 2008). In addition to insufficient funding, other threats facing cultural resources include vandalism, fire, theft, damage caused by some types of recreation, oil and gas extraction, mining, and timber harvesting (NTFHP 2008). The proposed

project alternatives that would result in adverse impacts to the cultural resources on site (the No Action alternative, relocation of the buildings, and especially, demolition of the buildings), would contribute incrementally adverse impacts to the National Forest Service-wide issues of inadequate preservation of cultural resources.

## 2.11 Alternatives Considered but Dismissed

CEQ regulations for implementing NEPA require that Federal agencies explore and objectively evaluate all reasonable alternatives to a proposed action, and briefly discuss the rationale for eliminating any alternatives that are not considered in detail. Because all alternatives to the proposed action, disposition of the NRS buildings at the Kawishiwi Field Laboratory, are considered in detail within this EA, no alternatives have been rejected at this time. Transfer of ownership of the Superior National Forest land underlying the buildings is not within the jurisdiction or authority of the NRS, and is therefore not included within the scope of alternatives considered by the NRS.

### **3 Affected Environment and Environmental Consequences**

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

#### **3.1 Introduction and Methodology**

NEPA requires consideration of context, intensity, and duration of impacts, direct or indirect impacts, cumulative impacts, and measures to mitigate for impacts. Overall, the NRS based the following impact analyses and conclusions on the review of existing literature, information provided by experts within the geographic area, and with other agencies, professional judgments, and USFS staff insights.

Potential impacts are described in terms of type (beneficial or adverse), context, duration, and intensity. The following general definitions were used to evaluate the context, intensity, duration, and cumulative nature of impacts associated with project alternatives. The specific criteria used to rate the intensity and duration of potential impacts for each resource topic are presented within each resource area impact analysis in this chapter.

##### ***Intensity of Impact***

Impact intensity is the degree to which a resource would be beneficially or adversely affected by an action. Impact intensities are quantified as negligible, minor, moderate, or major.

##### ***Extent of Impact***

Context is the setting within which an impact is analyzed, such as local, regional (forestwide), or resource-wide. Localized impacts are those that affect the resource area only on the project site or its immediate surroundings, and would not extend into the region.

##### ***Duration of Impact***

The duration of impact is analyzed independently for each resource because impact duration is dependent on the resource being analyzed. Depending on the resource, impacts may last as long as construction takes place, or a single year or growing season, or longer. For purposes of analysis, impact duration is measured in temporary, short-term, and long-term intervals.

##### ***Direct versus Indirect Impacts***

Direct effects are impacts caused by the alternative(s) at the same time and in the same location as the action. Indirect effects are impacts caused by the alternative(s) that occur later in time or farther in distance than the action, but are still reasonably foreseeable.

**Table 3-1. Resource assessment impact definitions**

<b>Impact Level</b>	<b>Negligible</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>
<b>Intensity</b>	Little or no impact to the resource would occur. Any change that might occur may be perceptible but difficult to measure.	Change in a resource would occur, but no substantial resource impact would result. The change in the resource would be perceptible, but would not alter the condition of the resource.	Noticeable change in a resource would occur and this change would alter the condition or appearance of the resource, but the integrity of the resource would remain.	Substantial impact or change in a resource area would occur, which is easily defined and highly noticeable, and that measurably alters the condition or appearance of the resource.
<b>Extent</b>	None	Localized – Impact would occur only at the project site or its immediate surroundings, and would not extend into the region.	Regional – Impact would affect the resource on a regional level, extending well beyond the immediate project site.	Resource wide – Impact would affect the resource at an ecosystem, physiographic area, or other large-scale connected system scale.
<b>Duration</b>	None	Temporary – Impact would occur only during the project implementation actions. Afterwards, the resource conditions would return to pre-action levels.	Short-term – Impact would extend beyond the time of project implementation actions, but would not last more than two years.	Long-term – Impact would likely last more than two years and may continue beyond the lifetime of the project implementation.

## 3.2 Geology and Soils

### 3.2.1 Affected Environment

The bedrock underlying the Superior National Forest was deposited during the Early, Middle, and Late Precambrian ages (approximately 4,500 to 542 million years ago). Bedrock within the vicinity of the project site belongs to the Duluth Complex, which consists of predominantly igneous rocks such as gabbro, troctolitic anorthosites, and mafic and felsic intrusive rocks. The mineral composition of the bedrock is rich with iron oxide minerals (USGS 2000). Early Precambrian rocks have been a valuable source of iron ore and have yielded small quantities of gold. The present day Mesabi Range has been producing high-quality iron ore from Middle Precambrian sedimentary rocks for over 100 years. The most important mineral deposits of the Late Precambrian age are the copper-nickel deposits that occur along the base (northwest margin) of the Duluth complex (USFS 2004a). Iron ore was discovered in Minnesota when miners were searching for gold deposits. Iron was originally mined from three deposits: the Vermilion Range,

the Cuyuna Range, and the Mesabi Range; parts of the Vermilion and Mesabi Ranges are found within the boundaries of Superior National Forest.

One of the main iron ore mines in the Vermilion Range is located near Ely. The Chandler Mine was the first in the Ely area to begin shipping ore; it began sending cargo in August of 1888. Because ore was discovered near the surface, an open pit operation was incorporated. As the ore body dipped deeper, mines had to be operated by shafts. Eventually, due to the high cost of mining ore underground, the last of the operating mines in the Ely area and the Vermilion Range was closed in 1967 (ARDC 2002).

The project site is located in an area whose geography was heavily influenced by the most recent glaciation; moraines, outwash plains, kettle lakes, eskers, and drumlins all resulted from the deposition of sediment and ice by glaciers as they retreated from this area approximately 15,000 years ago (USFS 2004a).

Portions of the project area are covered with unsorted glacial till deposits, which resulted in the formation of ground moraines and drumlins. Other formations include those formed as a result of water deposition such as outwash plains and eskers. These tend to be more stratified and occur less frequently throughout the project area. The formation of this topography resulted in the accumulation of organic debris and the creation of wet lowlands, lakes, and peat deposits (same citation as above). The general trend of area topographic features is northeast – southwest, reflecting both the bedrock structures and the general direction of glacial retreat (USGS 2000).

As illustrated in figure 3-1, all of the soils surrounding the Kawishiwi Field Laboratory are of the Mesaba-Barto Series. These gravelly, sandy loam soils are typically moderately deep, well-drained soils that form in loamy till found over the igneous bedrock that was deposited during the Precambrian. The retreat of the glaciers left poorly sorted glacial till covering the area, which became the source for these soils. The composition of the till included gravel, clay, cobbles, pebbles, and sand. Many portions of this soil series have a peat layer at the surface; beneath that, depth to bedrock ranges from 51 to 102 cm. Both the Mesaba and Barto soils are well-drained with medium to rapid surface runoff (NRCS 2007).

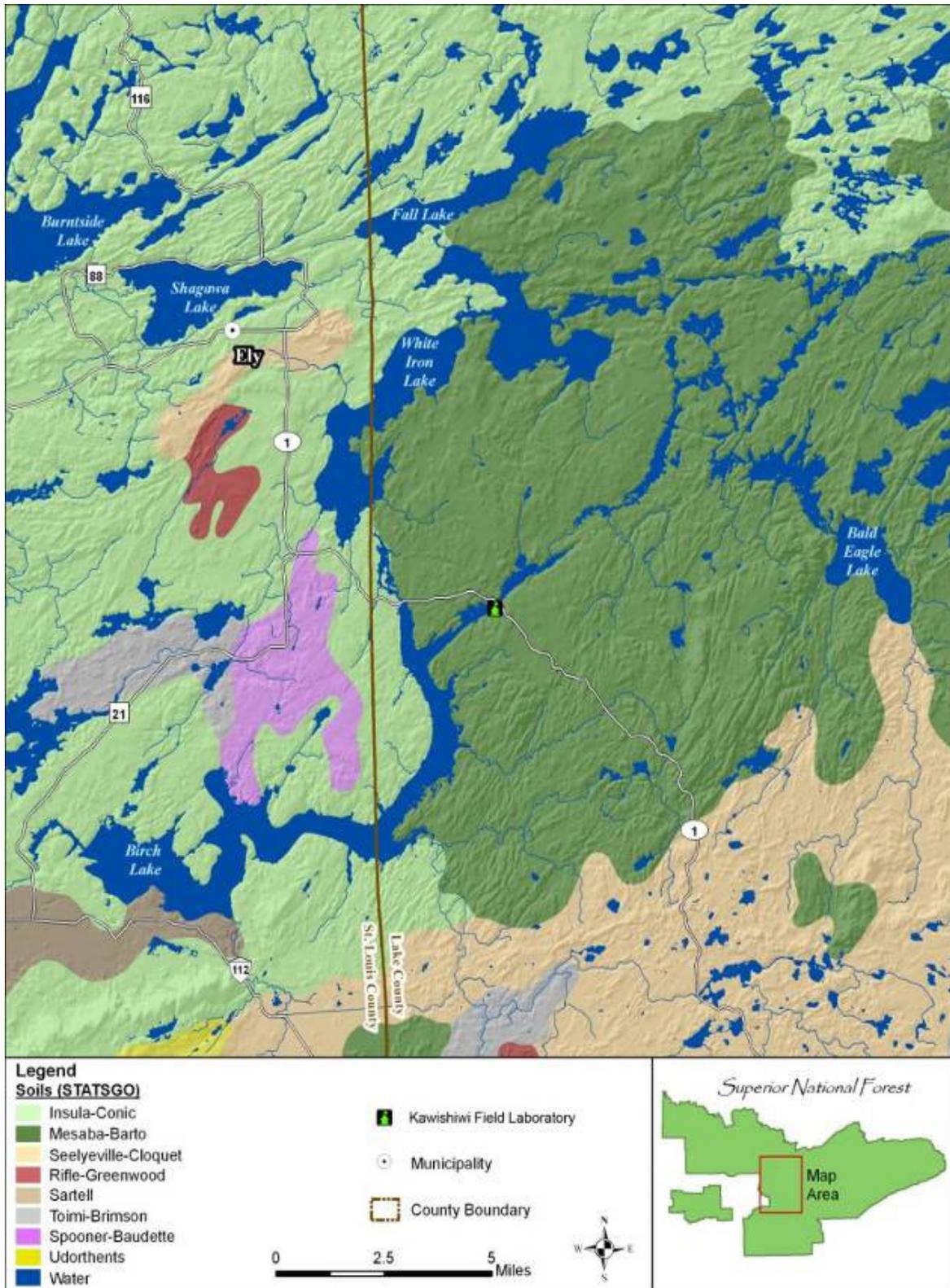


Figure 3-1. Soil map of project area

### ***3.2.2 Impacts of Alternative 1***

Under the No Action alternative, no demolition, construction, or site upgrade activities would occur that would impact geologic resources or soils. Thus, no impacts to geologic resources or soils would be expected to occur from this alternative.

### ***3.2.3 Impacts of Alternative 2***

Alternative 2 would involve the increase of maintenance funds to the Kawishiwi Field Laboratory. However, no impacts to geologic resources or soils would be expected to occur under this alternative either, as rehabilitating the structures and increasing their maintenance would not involve any earth-moving activities.

### ***3.2.4 Impacts of Alternative 3***

Alternative 3, the transfer of both ownership and management of the Kawishiwi Field Laboratory buildings, would potentially involve a limited amount of ground disturbance if the buildings are upgraded to accommodate new reuses. However, no reuses of the buildings under this alternative would involve subsurface drilling or exploration of geologic resources. The land underlying the site does not have potential for geologic instability or subsidence. Geological resources are not expected to be impacted under this alternative.

A limited amount of soils can be expected to be disturbed during the upgrade of site buildings. A minimal amount of additional storm water runoff can be expected to occur during these activities.

The Minnesota Pollution Control Agency (MPCA) is responsible for administering the state's storm water management program. The MPCA program is unique in that it incorporates the requirements of both the Federal National Pollution Discharge Elimination System (NPDES) permits and the Minnesota State Disposal System (SDS) permit into a single permit referred to as NPDES/SDS permit. This permit must be obtained if the footprint of disturbance is greater than one acre. The footprint of disturbance anticipated under this alternative would be much smaller than one acre, and the site would therefore be exempt from obtaining the permit. However, all site runoff should be managed according to BMPs specified under the 2005 Minnesota Stormwater Manual Standard construction BMPs, such as installing perimeter silt fences, spreading straw and mulch to protect exposed ground, covering stockpiles of earth or soils, and so forth, will help minimize any runoff, erosion and impacts to on-site and off-site soils during construction activities. Overall impacts to soils from this alternative are considered to be short-term and negligible.

### ***3.2.5 Impacts of Alternative 4***

Under alternative 4, transfer of management of the Kawishiwi Field Laboratory buildings would occur. The NRS would retain ownership of the buildings and the Superior National Forest would retain ownership of the land. Impacts under this alternative would be similar to those discussed under alternative 3. No impacts are anticipated to geologic resources, and only short-term negligible impacts during building upgrades are anticipated from increased runoff from disturbed soils.

### ***3.2.6 Impacts of Alternative 5***

Alternative 5 would involve the disassembly and relocation of all or some of the buildings on site. Those buildings not able to be relocated would likely be demolished, or in the case of the cellar, abandoned in place.

The disassembly, relocation, and reassembly of the structures would require the use of heavy machinery, trucks, and trailers. Activities related to demolition of the structures left onsite (at a minimum, the cellar, insectary, and second outhouse), would require the use of dump trucks, cranes, excavators and other heavy equipment. As with almost any construction project involving the use of heavy equipment, there is some risk of an accidental fuel or chemical spill, and the potential contamination of soils. Fuel products (petroleum, oils, lubricant) would be needed to operate and fuel the equipment. To reduce the potential for soil contamination, fuels would be stored and maintained in a designated equipment staging area. A person(s) designated as being responsible for equipment fueling would closely monitor the fueling operation, and an emergency spill kit containing absorption pads, absorbent material, a shovel or rake, and other cleanup items, would readily be available on site in the event of an accidental spill. Following these precautions, the potential for an accidental chemical or fuel spill occurring and resulting in adverse impacts on soils would be negligible.

Soil disturbance is defined as anything that causes the impairment of physical, chemical and biological properties and processes, such as erosion, compaction, displacement, rutting, burning, loss of organic matter and mass movement of soil (USDA 2005). Construction equipment also has the potential to compact soil, reducing the porosity and conductivity of the soil. Such compaction is likely to slightly increase the amount of surface runoff in the immediate area. Soil stabilization will be required to prevent sediment runoff impacts to water sources, possibly degrading water quality.

The NPDES under the Clean Water Act prohibits the discharge of any pollutant, including sediments, to waters of the United States. Because the total, combined footprint of disturbance of this alternative is likely to be greater than one acre, an NPDES/SDS permit would need to be obtained from the MPCA in order to regulate discharge of storm water runoff from the site during relocation activities. Typically, sediment erosion rates from construction sites are 10 to 20 times greater than those from agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. The main requirements of the NPDES/SDS permit are a \$400 application fee and development of a site specific Storm Water Pollution Prevention Plan (SWPPP). SWPPPs contain measures to reduce soil erosion and prevent pollution from petroleum, oil, and lubricants and other chemicals or hazardous/toxic materials at construction sites. Specifically, SWPPP plans assess the characteristics of the site such as nearby surface waters, topography, and storm water runoff patterns; identify potential sources of pollutants such as sediment from disturbed areas, and stored wastes or fuels; and identify BMPs which will be used to minimize or eliminate the potential for these pollutants to reach surface waters through storm water runoff. Standard construction BMPs, such as installing perimeter silt fences, spreading straw and mulch to protect exposed ground, covering stockpiles of earth or soils, and so forth, will minimize runoff, erosion and impacts to on-site and off-site soils during all building removal and demolition activities.

As described in section 3.2.1, soils within the proposed project site are generally well drained and have rapid surface runoff. However, it is also likely that a large area of these soils have been previously disturbed by site activities. The majority of soil compaction occurs upon initial development and traversal by heavy machinery. Because of this, it is very likely that all of the portions of the proposed project site that hold buildings have experienced some degree of soil compaction. It can also be expected that additional impacts will occur during the building relocation process. Earth-moving activities, compaction, erosion, and loss of vegetative cover, can all impact soil quantity and quality. Overall impacts to soils at the proposed project site from building relocation and demolition under alternative 5 are expected to be adverse, localized (limited to where project activities will be occurring), short-term, and minor.

Once building relocation activities are complete, the Kawishiwi Field Laboratory site will be re-contoured and re-vegetated. These activities will limit loose soils, encourage nutrient growth and assist biological productivity of area soils. It is not known what future land reuses the Superior National Forest would propose at the site. It is likely, however, that the site will be managed as part of the forest ecosystem in a manner that minimizes any future impacts to soils.

### *3.2.7 Impacts of Alternative 6 (Proposed Action)*

Alternative 6 would consist of the demolition of all of the buildings on site. The cellar would be abandoned in place. The Superior National Forest would retain ownership of the land, and would have sole discretion and decision-making authority regarding future land reuses. It is anticipated that following building demolition, the land would be, at a minimum, regraded and reseeded with native plant vegetation.

Demolition of the laboratory buildings would require the use of heavy equipment, such as elevated work platforms, dump trucks, cranes, excavators, graders, bulldozers and other diesel- and gasoline-fueled equipment. It would take several weeks or months to prepare the buildings for demolition. Impacts to soils from this alternative would be very similar to those described under alternative 5. Fuel products brought onsite would be stored and handled in the same manner. Because the total, combined footprint of disturbance of this alternative is likely to be greater than one acre, an NPDES/SDS permit would also need to be obtained from the MPCA to regulate discharge of storm water runoff from the site during demolition activities. The SWPPP and BMPs developed for the site would be adhered to in order to minimize soil impacts.

Overall impacts to geology and soils at the proposed project site from building demolition under alternative 6 are expected to be adverse, localized (limited to where project activities will be occurring), short-term, and minor.

Once building demolition activities are complete, the Kawishiwi Field Laboratory site will be re-contoured and re-vegetated. It is not known what future land reuses the Superior National Forest would propose at the site. It is likely, however, that the site will be managed as part of the forest ecosystem in a manner that minimizes any future impacts to soils.

## 3.3 Water Resources

### *3.3.1 Affected Environment*

The Kawishiwi Field Laboratory buildings are located on the southeastern bank of the South Kawishiwi River, less than 2 miles from where the river empties into Birch Lake. This region of Minnesota is well known for numerous lakes, rivers, wetlands, and generally wet, marshy topography. Predominant surface water bodies in the area include White Iron Lake to the northwest of the project site, and Birch Lake which is immediately south of the project site (Figure 3-2). Although portions of Lake County are located within the Minnesota Coastal Zone, the project area is not and does not impact the state's Coastal Zone Management Area, which protects Lake Superior.

The main channel of the Kawishiwi River is perennial, with seasonal discharge that ranges from 1.6 cubic meters per second under ice cover to 18.6 cubic meters per second during spring melt (USGS 1999). The Kawishiwi River Basin drains parts of Lake and Cook Counties in Minnesota, and is partially located within the boundaries of the BWCAW, which is part of the National Wilderness Preservation System and is administered by the Superior National Forest (USGS

2000). The BWCAW boundary is located approximately 4 miles north of the Kawishiwi Field Laboratory.

Water quality data for the Kawishiwi River near Ely were recorded from 1963 to 1995; a variety of sampling techniques were used and some were later determined to be flawed, leaving a more limited, but accurate, data set. This data set indicates that the river water is moderately acidic with a strong presence of ammonium, hydrogen, calcium, sulfate, and nitrate ions. The presence of the strongly acidic (sulfate and nitrate) anions is indicative of this location being influenced by anthropogenic emissions of sulfur and nitrogen compounds, which cause acid rain (USGS 2000).

Section 303 of the Clean Water Act (CWA) established Total Maximum Daily Load (TMDL) as a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards for its designated use. These water quality standards and designated uses are interpreted from the CWA and enforced by each state. When a state deems a water body impaired, it is placed on the 303(d) List of Impaired Waters. It would remain on this list until TMDL water quality standards are met. The reach of the Kawishiwi River near the project site is not included on the 303(d) List. However, portions of the Kawishiwi River within 2 miles of the project site, including both Birch Lake and White Iron Lake, are listed on the 303(d) List of Impaired Waters by the USEPA for elevated levels of mercury; these portions of the river have been listed as impaired since 2002. The EPA lists mercury in fish tissue as the reason for impairment, but the source of the mercury is unknown (USEPA 2008).

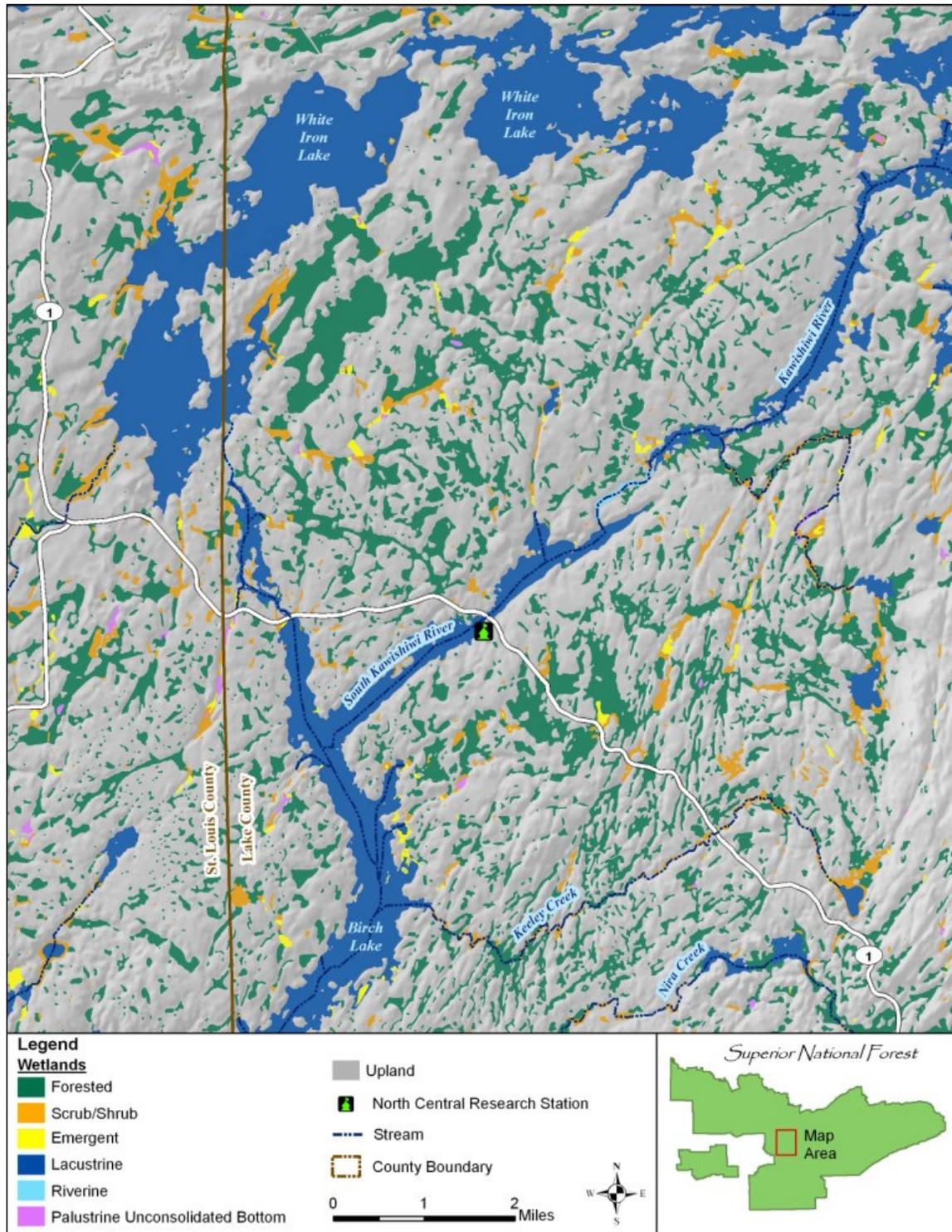


Figure 3-2. Aquatic features of project area

In addition to the 303(d) impaired water designation, the goals of the CWA are also assessed through Section 305(b) of the act which designates whether or not a water body is supporting of recreational uses. The portion of the South Kawishiwi River directly adjacent to the proposed project site (Figure 3-3) is designated as fully supporting aquatic recreation. This, in combination with the fact that the portion of the South Kawishiwi River directly adjacent to the proposed project site is not currently listed on the 303(d) list, indicates that overall water quality is good (USEPA 2004, MPCA 2008).



**Figure 3-3. South Kawishiwi River (from project site)**

There are no wetlands on the project site. Wetlands within the vicinity of the project site include forested wetlands within one-half mile of the site, both to the southeast and across the South Kawishiwi River, northwest of the site. Forested wetlands are also referred to as wooded swamps. Scrub/shrub wetlands are located within one half-mile both east and north of the project site. These wetlands are characterized by woody vegetation less than 20 feet tall; they often represent a successional stage in transition to a forested wetland. See section 3.4.1 for a description of area vegetation. The swamps found near the project area are characteristic of the generally wet environment, dominated by rivers, lakes, and wetlands that is found in this Boundary Waters Region. No floodplain data are currently available for Lake County.

### ***3.3.2 Impacts of Alternative 1***

If the No Action alternative were to be implemented, current site uses would continue and no activities related to the rehabilitation, maintenance, relocation, or demolition of the site buildings would occur. The buildings would continue to deteriorate. The Boathouse and its associated dock could experience structural failure and splinter off into the South Kawishiwi River. This would result in short-term, adverse, minor impacts to the waterway. No additional impacts to groundwater or wetlands and floodplains can be expected from implementation of this alternative.

### ***3.3.3 Impacts of Alternative 2***

Under alternative 2, maintenance funds would increase for the Kawishiwi Field Laboratory buildings. The increase in maintenance funds would go toward rehabilitating the buildings and increasing their maintenance. The risk posed by the Boathouse and its dock deteriorating into the South Kawishiwi River would be substantially reduced under this alternative. No impacts to water resources are anticipated to occur as a result of this alternative.

### ***3.3.4 Impacts of Alternative 3***

Alternative 3 involves the transfer of both ownership and management of the Kawishiwi Field Laboratory. A limited amount of ground disturbance may occur from project activities if the buildings are upgraded to accommodate new reuses. However, no site upgrades or new structures

would be permitted to be placed on site without prior approval from the Superior National Forest. Regardless of future reuse, it is anticipated that the Superior National Forest would not permit new structures to be located on the site and that ground-disturbing activities would be restricted to be minimal. As a result, impacts to water resources from this alternative are anticipated to be negligible.

### *3.3.5 Impacts of Alternative 4*

Under alternative 4, transfer of management of the Kawishiwi Field Laboratory buildings would occur and the NRS would retain ownership of the buildings. Impacts under this alternative would be similar to those discussed under alternative 3. Negligible impacts to water resources are anticipated as a result of this alternative.

### *3.3.6 Impacts of Alternative 5*

Alternative 5 would consist of the relocation of all or some of the buildings on site. Those buildings not able to be relocated would likely be demolished or abandoned in place. Impacts associated with the building disassembly and relocation activities could affect water resources by storm water runoff from the site coming into contact with exposed soils and carrying sediment and contamination loads into surface water during times of heavy rain, and by contamination from relocation activities infiltrating area soils and percolating down into the groundwater. As discussed under the geology and soils section, a NPDES/SDS permit would need to be obtained from the MPCA in order to regulate discharge of storm water runoff from the site during relocation activities. The incorporation of the BMPs and mitigation measures specified in the SWPPP into the design phase of the project would reduce any potential impacts to water quality in the area to a negligible level.

Due to the distance of the nearest wetlands to project activities, no wetlands would be impacted by relocating the structures. Although there are no floodplain data available for Lake County, no impacts to the floodplain are anticipated to occur from the project activities. Additionally, no impacts to Minnesota's Coastal Zone are anticipated to occur, as the project site is located far from the Coastal Zone boundary. Due to the distance of the project area from the Coastal Zone, a Federal consistency determination, as per the requirements of the Coastal Zone Management Act, is not required.

Under this alternative, the Boathouse and its dock which extend into the South Kawishiwi River, would either be disassembled and relocated or disassembled and demolished. Depending on the specific relocation plan, a Section 404 of the CWA permit application may be required to be submitted to the St. Paul District of the U.S. Army Corps of Engineers, which regulates discharge of dredged or fill material into the navigable waters. Additionally, as the Kawishiwi River at the project site is a navigable waterway, a Section 10 permit of the Rivers and Harbors Appropriation Act of 1899, may be required. These permits and their stipulations would ensure that any impacts resulting from relocation or demolition activities of the Boathouse and dock would be mitigated. No additional permits from the Minnesota Department of Natural Resources (MDNR) are anticipated to be required.

Overall impacts to water quality and water resources from potential building relocation and demolition activities from alternative 5 are anticipated to be adverse, temporary, and minor.

### ***3.3.7 Impacts of Alternative 6 (Proposed Action)***

Alternative 6 would consist of the demolition of all of the buildings on site. The cellar would be abandoned in place. It is anticipated that following building demolition, the land would at a minimum be regraded and reseeded with native plant vegetation. The Superior National Forest would retain ownership of the land.

The impacts to water resources from demolition of the laboratory buildings would be very similar to the impacts discussed under alternative 5. Overall impacts to water resources at the proposed project site from building demolition are expected to be adverse, minor, temporary, and localized, limited to where project activities will be occurring.

## **3.4 Biological Resources**

### ***3.4.1 Affected Environment***

The project site is located within a southern boreal forest ecosystem. Dominant upland tree species include jack pine, quaking aspen, birch, northern red oak, black spruce, and fir. Understory vegetation is typically juneberry, beaked hazel, mountain maple, willow, and American green alder. Lowland and marsh vegetation includes black spruce, northern white cedar, tamarack, and speckled alder. Both red and white pines were once extensive in this region but are now located in isolated, scattered stands due to the effects of logging and fire (USGS, 1999).

Wildlife found within the vicinity of the project site is typical of that found along the border of boreal forest ecosystems. Black bears, Canada lynx, grey wolves, white-tailed deer, moose, beavers, raccoons, chipmunks, squirrels, other rodents, and bats are dominant mammal species. Common bird species include jays, starlings, red-winged blackbirds, grackles, pileated and red-headed woodpeckers, and waterfowl such as Canada geese, mallards, wood ducks, heron, and loons. Birds of prey include bald eagles, red-tailed hawks, ospreys, and great horned and snowy owls (Runesson 2007).

### ***Threatened and Endangered Species***

In March 1967, the gray wolf (*Canis lupus*) was listed by the U.S. Fish and Wildlife Service (USFWS) as threatened within the State of Minnesota on the Federal Endangered Species List. The gray wolf (also referred to as the timber wolf) is native to northern Minnesota and the surrounding region. The gray wolf was delisted and its status changed to recovered on March 12, 2007, in the Western Great Lakes region, which includes all of Minnesota (USFWS, 2008), however it was relisted as threatened in Minnesota in a Federal Court settlement on September 16, 2009 (USFWS 2009). The gray wolf is widespread throughout northern Minnesota. It is an opportunistic predator and is mostly limited by availability of its primary prey species, white-tailed deer and moose. Aggressive past trapping, hunting, and poisoning campaigns reduced the U.S. wolf population to near extinction by the middle of the 20th century.

Canada lynx (*Lynx canadensis*), listed as threatened in 2000, is known to occur on the Superior National Forest (USFS 2004a). The distribution of the Canada lynx closely follows the distribution of its main food, the snowshoe hare, which inhabits boreal forests. Thus, lynx formerly lived in most forested areas of north-central and northeastern North America, and extended south along the Rocky Mountains to central Colorado. Human actions, mainly overtrapping, have reduced lynx populations throughout much of the species' former range.

In 1978, the bald eagle (*Haliaeetus leucocephalus*) was listed under the Endangered Species Act as threatened in Minnesota, Michigan, Oregon, Wisconsin, and Washington, and endangered in the remainder of the conterminous United States (USFS 2004a). Although the species was officially removed from the Federal list of endangered and threatened species in 2007, it continues to be protected under the Migratory Treaty Act and the Bald and Golden Eagle Protection Act.

Regional Forester Sensitive Species on the Superior National Forest include 29 animals and 49 plants (USFS 2004, USFS 2008b). Regional Forester Sensitive Species are those species of highest viability concern on a national forest. It is possible that some of these species occur at or near the Kawishiwi Field Laboratory complex.

On May 6, 2008, the NRS sent the USFWS a consultation letter, per Section 7 of the Endangered Species Act. The letter requested information regarding any current federally listed threatened or endangered species, species of concern, or any other special status species that might occur in the project area, and, any designated critical habitats that may be present for these species. Additionally, the letter requested any information, issues, or concerns the USFWS may have regarding the proposed project. On October 7, 2008, Nick Rowse, Fish and Wildlife Biologist, USFWS, replied that there no federally listed or proposed species in the project area (Appendix A).

### ***Wildlife Research***

Wildlife research, and in particular research on gray wolves, has been occurring at the Kawishiwi Field Laboratory since 1968, and is one of longest running continuous wildlife studies in the world. The research has been spearheaded by Dr. L. David Mech (originally under the purview of the USFWS and now under the USGS), and is rivaled in length only by another of Dr. Mech's wolf research initiatives in Isle Royale, Michigan. The predecessor of the NRS, the North Central Forest Experiment Station, originally conducted its own research out of the laboratory in concert with other agencies, including the USFWS and University of Minnesota.

Research at the site has focused on the gray wolf and on the wolf's main prey, the white-tailed deer (*Odocoileus virginianus*). Incidental research on the American marten (*Martes Americana*) and the Canadian lynx (*Lynx canadensis*) has also been conducted. Over the past 40 years, University of Minnesota research conducted in the Superior National Forest on moose (*Alces alces*), white-tailed deer, black bear (*Ursus americanus*), raven (*Corvus coyax*) and loon (*Gavia immer*) has been headquartered out of the Kawishiwi Field Laboratory, with several graduate students receiving master's and doctoral degrees based on this research. Additional research collaborators who have conducted field research at the laboratory include Vermillion Community College (Ely, Minnesota), Macalester College (St. Paul, Minnesota), MDNR, IWC, USDA Wildlife Services, and the Superior National Forest. Field research based out of the Kawishiwi Field Laboratory has contributed to hundreds of published scientific articles, books, and monographs (Mech 2007).

The research based out of the Kawishiwi Field Laboratory was instrumental in developing early radio telemetry techniques for wildlife research. Radio telemetry continues to be a valuable contribution of the laboratory to regional and global wildlife conservation; scientists and wildlife managers from around the country and the world have been coming to the laboratory over the years to learn radio telemetry techniques.

Several attributes make the Kawishiwi Field Laboratory an ideal location as a staging area for research: (1) extensive accommodations in the form of sleeping, eating, and office facilities, storage areas, garage, and shop; (2) proximity to the central Superior National Forest and the BWCAW; (3) proximity to the community of Ely, (4) proximity to airport and seaplane bases, and (5) its status as the only suitable field research headquarters in Minnesota north of Duluth, east of Grand Rapids, and west of Grand Marais (Mech 2007).

The USGS and the IWC have attributed the ongoing recovery of the gray wolf population, and the subsequent return of the wolves to Yellowstone National Park, to the research based at the laboratory. In addition, a separate wolf delisting proposal is proceeding in the West, and a controversial wolf reintroduction is underway in the Southwest. Information and trained personnel resulting from the wolf studies conducted out of the Kawishiwi Field Laboratory are considered valuable to the Federal wolf programs currently being proposed or underway. The USGS and researchers currently at the Field Laboratory feel that the site remains the only suitable headquarters for staging the 5-year monitoring work and additional wolf research (Mech 2007).

### *3.4.2 Impacts of Alternative 1*

As there would be no new actions under alternative 1, there would be no new impacts on biological resources. Disposition of the Kawishiwi Field Laboratory buildings would not occur. It is likely that the current level of outdoor maintenance, for example, mowing the lawn around structures, would continue along with existing impacts on surrounding vegetation, such as trampling due to foot traffic. Animals inhabiting buildings, such as bats, rodents, and powder post beetles would continue to remain mostly undisturbed. Otherwise, wildlife would not be affected beyond current disturbance from human presence, and there would be no new effects on wildlife habitat.

There would be negligible direct impacts to biological resources as a result of alternative 1, due to continued use of the laboratory buildings and grounds. Conversely, there would be indirect long-term, beneficial impacts to wildlife, especially to the gray wolf and Canada lynx, from the continued research pursuits which are headquartered from the laboratory.

### *3.4.3 Impacts of Alternative 2*

Increased maintenance funds to upgrade building facilities in alternative 2 would primarily focus on the structures themselves, but it is likely that there would also be increased maintenance of the grounds surrounding the buildings. It is possible that vegetation would be trimmed or removed to prevent encroachment on structures, and lawns would continue to be mowed. Repeated disturbance of vegetation (i.e., due to vehicle passes or foot traffic) during maintenance would cause damage to plants; however, the areas surrounding the buildings are considered disturbed, and any additional impacts would be minimal.

Maintenance that would occur inside the buildings would impact only animals that inhabit the structures. It is likely that actions would take place to exclude bats and rodents and eliminate powder post beetles. Maintenance that would occur on the outside of the buildings may disturb or displace wildlife in the vicinity due to noise associated with work taking place and increased presence of humans and vehicles during renovation or other activities. However, maintenance activities would be temporary, albeit on a recurring basis over the long term. Wildlife habitat would not likely be altered or disturbed.

There would be long-term, minor, localized, adverse impacts to biological resources as a result of alternative 2 due to increased maintenance of buildings and grounds. Conversely, as under alternative 1, there would be indirect long-term, beneficial impacts to wildlife from the continued research pursuits which are headquartered from the laboratory.

#### *3.4.4 Impacts of Alternative 3*

Impacts to biological resources from the transfer of ownership and management of the laboratory complex in alternative 3 are difficult to assess, as it is unknown who would purchase the property, what use they would make of it, or at what level they would maintain it. If the facility would be used in a manner similar to current use, and upgrades or renovations are made, then impacts may be similar to those described for alternative 2. If substantial renovations are made, then the impacts would also be similar to alternative 2, or greater as described in alternative 4. If the function of the facility would change, then impacts on wildlife and vegetation would differ, depending on type and extent of use.

Impacts on biological resources as a result of alternative 3 could range from negligible to moderate, and would likely be long-term, localized and adverse, depending on types and levels of use with transfer of ownership and management. If research out of the site is discontinued, indirect, adverse, long-term, major impacts to wildlife could occur.

#### *3.4.5 Impacts of Alternative 4*

Under alternative 4, management of the laboratory facility would be transferred to another entity. It is likely that use would remain the same and that maintenance would increase from current levels, thus impacts would be similar to those described in alternative 2. However, it is also possible that substantial renovations could occur under new management. In this case, repeated disturbance of vegetation (i.e., due to vehicle passes or foot traffic) during maintenance could cause damage to plants over a larger area. Work on the inside of the buildings would still have similar impacts on biological resources as alternative 2; however, work on the outside of the buildings could be more extensive, with longer periods of noise, human presence, and more vehicles or power tools. Such activity would disturb or displace wildlife in the vicinity for longer periods of time, but disturbance would still be temporary and wildlife would be expected to return after renovations or maintenance activities are completed. Disturbance of wildlife habitat would likely be negligible even with the possibility of grounds maintenance over a larger area than at present.

Overall, there would be short-term, localized, negligible to minor, adverse impacts to biological resources as a result of the alternative 4 due to increased maintenance and possible substantial renovation of buildings and grounds. If research out of the site is discontinued, indirect, adverse, long-term, major impacts to wildlife could occur.

#### *3.4.6 Impacts of Alternative 5*

Relocation of the laboratory buildings under alternative 5 would entail the use of heavy machinery, trucks, and trailers to haul the buildings away. Dismantling and relocating the buildings would necessitate removal of plants surrounding the buildings, primarily lawn grasses but also trees or shrubs that occur very close to the structures. Repeated disturbance of vegetation from vehicle passes during this process in areas where plants are not cleared would cause damage to plants and destruction of the vegetation mat. However, the majority of disturbance would occur in previously disturbed areas, thus adverse vegetation impacts would be minimized. Upon

removal of buildings, all disturbed areas would be reseeded or revegetated and erosion control BMPs would be maintained until the vegetation is fully reestablished.

The activity and noise generated during dismantling and relocating the buildings would cause temporary displacement and disturbance of resident wildlife for the duration of the project. Species are expected to return to the area after relocation is completed. The disturbed nature of the area surrounding the buildings does not currently provide quality wildlife habitat; however, relocation activities may disturb or destroy any habitat that is being used. Furthermore, areas surrounding the project site could provide appropriate habitat for any habitat that is temporarily lost. Revegetation or natural reclamation of the laboratory complex upon removal of the structures would be beneficial as it would provide new wildlife habitat. Animals that currently live inside the structures would be displaced or killed.

There would be temporary, localized, adverse impacts to biological resources as a result of alternative 5, due to habitat disturbance during the location activities, and beneficial long-term impacts due to revegetation or reclamation of the area. Under this alternative, wildlife research headquartered out of the laboratory would be discontinued. As a result, indirect, adverse, long-term, major impacts to wildlife could occur.

### *3.4.7 Impacts of Alternative 6 (Proposed Action)*

Demolition of the laboratory buildings on-site would have effects similar to those described in alternative 5, with adverse effects from demolition activities and beneficial effects from possible revegetation or natural reclamation of the site. Additionally, there would be impacts on vegetation and wildlife from fugitive dust generated by demolition of buildings. Dust could cover, choke out, or kill surrounding vegetation. It could also have detrimental health effects on resident wildlife. However, fugitive dust would only be generated temporarily during demolition, and it is likely that animals would flee the area while there is increased human activity and noise and possibly avoid the majority of the dust.

There would be temporary, localized, negligible to minor, adverse impacts to biological resources as a result of alternative 6 due to disturbance and destruction during structure demolition, and long-term, beneficial impacts due to revegetation or reclamation of the area. Similar to alternative 5, wildlife research headquartered out of the laboratory would be discontinued under this alternative. As a result, indirect, adverse, long-term, major impacts to wildlife could occur.

## 3.5 Land Use

### *3.5.1 Affected Environment*

The Kawishiwi Field Laboratory is located in Lake County, approximately twelve miles southeast of Ely, on the eastern bank of the South Kawishiwi River. The field laboratory is located on Superior National Forest land. The Superior National Forest manages approximately two-thirds of the 3.9 million acres within its boundaries. Thus, forested land comprises most of this area. Wetlands, lakes, and rivers also are present. Roads, utility corridors, residences, resorts, and pastures account for one percent of land uses in the Superior National Forest area (USFS 2004a).

The Superior National Forest owns 58 percent of land in Lake County. Other Lake County ownership is private (16 percent), county (14 percent), and state (12 percent). Thirty-seven percent of the Federal land at the Superior National Forest is classified as wilderness (USFS 2004a). Recreation and natural resource extraction are major activities in the forest. In the

southwestern part of Superior National Forest, iron mining is major employer. Timber is the lead industry in the southeastern part of the Superior National Forest. The lead industry in the northern and eastern parts of Superior National Forest is recreation. Recreational opportunities include water recreation, sightseeing, and wildlife viewing. Hiking, hunting, fishing, biking, and nature studying are other activities enjoyed at Superior National Forest (USFS 2004a). In 2000, Superior National Forest received 4 million visits (USFS 2004b). The BWCAW (part of the Superior National Forest) is approximately one million acres in extent, and hosts almost 300,000 visits annually (USFS 2004a). The BWCAW is 4 miles to the north of the field laboratory.

While the Superior National Forest owns the land of the Kawishiwi Field Laboratory site, NRS owns and manages the buildings. For the past 40 years, the field laboratory has been used for research by various groups. NRS discontinued conducting research out of the field laboratory in the 1980s. Currently, USGS Northern Prairie Wildlife Research Center is the sole tenant at the field laboratory.

The Kawishiwi Field Laboratory is an active research laboratory. Many features of its location make the Kawishiwi Field Laboratory desirable for research. One is its extensive accommodations (sleeping, eating, office facilities, storage areas, garage, and shop). Additional research-conducive characteristics of the field laboratory are its proximity to the central part of Superior National Forest and BWCAW, the community of Ely, and the airport and seaplane bases; and its status as the only suitable field research headquarters in northern Minnesota north of Duluth, east of Grand Rapids, and west of Grand Marais (Mech 2007). Ely is also the headquarters for the IWC, which participates in research at the field laboratory. A description of research conducted at the field laboratory can be found in Section 3.4.1.

### ***3.5.2 Impacts of Alternative 1***

Under the No Action alternative, the field laboratory buildings would continue to deteriorate from lack of maintenance and rehabilitation. This would represent no change from the current use and maintenance schedule. Until the buildings become unusable or research needs stop, the buildings would continue to be used for research, which is compatible with the land uses at the Superior National Forest that surrounds the field laboratory. Eventually, research use of the field laboratory may be limited by the lack of maintenance and repair.

After the buildings deteriorate beyond use, NRS would be faced with structural disposition responsibilities and the Superior National Forest would determine the use of the land. Based on current activities in the forest, the future use could be anything from recreation to logging. The future use would be compatible with the forest management plan, other regulations/laws, and special use permits. Until building deterioration has occurred, alternative 1 would have no impact on land use. Following building deterioration or abandonment of research interests at the site, the long-term impacts would be negligible.

### ***3.5.3 Impacts of Alternative 2***

The increase of maintenance funds under alternative 2 would result in the rehabilitation and maintenance of the buildings. This would represent an improvement in the quality of the field laboratory buildings. Under this alternative, the site would continue to be used for research. This represents no change from the current land use, which is compatible with the surrounding land uses at the Superior National Forest. Research at the field laboratory would be able to continue without being restricted by buildings becoming unusable. The reallocation of funds from other NRS program(s) and site(s) in order to increase the funds available to the Kawishiwi Field

Laboratory buildings could lead to a change in land use at that (those) location(s). Until the determination of how the funds would be reallocated, the impacts to the site(s) and program(s) receiving reduced funds are unknown. The impacts to land use at the field laboratory under alternative 2 are expected to be negligible for both the short and long term.

### *3.5.4 Impacts of Alternative 3*

The transfer of ownership and management of the buildings, alternative 3, could represent a change in land use depending on the entity that assumes the ownership and management of the field laboratory, and its plans for the buildings. The use of the field laboratory by the MCC for hands-on environmental stewardship, service-learning opportunities to youth and young adults, cost-effective conservation, natural resource management projects, and emergency response work would be compatible with the surrounding land uses as it is similar to the current uses of the project area and compatible with the Forest Service direction. Continuing the field laboratory as a research facility is continuing the current land use but under different ownership/management, which would be compatible with the surrounding land uses of Superior National Forest.

Converting the field laboratory buildings to a rustic ecoresort where the cabins could be rented, or made into private homesteads, would represent a change in land use from research, but would still be compatible with the land uses in the vicinity of the area, which includes both homesteads and recreational activities. Since the Superior National Forest would continue to own the land where the field laboratory is located, access to and use of the buildings by a new owner would require a Special Use Permit. This would enable Superior National Forest to ensure that the uses of the buildings would be compatible with the surrounding land uses of the forest. Regardless of who obtains ownership and maintenance of the buildings, many different types of landowners exist in the project area (state, Federal, and private); thus, the transfer of ownership and maintenance of the buildings away from a Federal agency would not represent an incompatible change in ownership with the area surrounding the field laboratory. Any reuse plans for the Kawishiwi Field Laboratory buildings would require approval by the Superior National Forest. If any Superior National Forest-approved site upgrades were to occur in the future, the Lake County Planning and Zoning Office, located in Two Harbors, Minnesota, should be contacted regarding the requirements relating to building setbacks, removal, construction, etc. The overall temporary and long-term impacts to land use from implementing this alternative are beneficial, localized, and minor.

### *3.5.5 Impacts of Alternative 4*

Transferring management of the buildings would be similar to alternative 3 in that possible future land uses would be the same under both alternatives. The difference in this alternative would be that NRS would retain ownership of the buildings. Regardless of who obtains management of the buildings, many different types of activities occur in the project area (state, Federal, and private); thus, transfer of the management of the buildings away from a Federal agency would not conflict with surrounding land uses. A Special Use Permit from the Superior National Forest may also be required for use of the buildings under this alternative, as in alternative 3. Since ownership of the buildings would not substantially alter the activities that are being proposed under this alternative compared to those being proposed under alternative 3, the impacts under alternative 4 are the same as alternative 3, described above. Therefore, the temporary and long-term impacts to land use from implementing this alternative would be beneficial, localized, and minor.

### *3.5.6 Impacts of Alternative 5*

Relocation of the buildings would represent a change in land use where the field laboratory is currently located. The exception would be if research would continue once the field laboratory buildings are removed, which is unlikely to occur to the same degree without the benefit of support structures being located onsite. The relocated buildings could also represent a change in land use at their new location. The type of land use impacts, and the resultant natural resource impacts, would depend on the current land use of the final destination of the buildings, which is unknown at this time.

Once the buildings are removed, uses of the land currently occupied by the field laboratory would depend on the Superior National Forest. The future use would be compatible with the forest management plan, other regulations and laws, and Special Use Permits. Future use of the land where the field laboratory is currently located would be expected to be compatible with the current land uses surrounding the project area, and could be anything from timber harvesting to recreation based on current Superior National Forest activities.

There has been a renewed interest in mining in the Kawishiwi area for gold, copper, nickel, silver, platinum, and palladium. Several mining claims lie within the vicinity ( $\frac{1}{2}$  to  $\frac{1}{4}$  mile) of the field laboratory. Three relatively large mines (NorthMet, Birch Lake, and Mesaba) either just opened or are currently proposed to open in the project vicinity. The mines are situated near the town of Babbitt, along a northeast-to-southwest running line from Birch Lake, a widening of the South Kawishiwi River, to the north, and the town of Hoyt Lakes to the south. There has been some concern that relocation of the buildings would free up the land underlying the Kawishiwi Field Laboratory to mining interests. Under this alternative, the future reuse of the land is the discretion of the Superior National Forest, with appropriate public input. There is no known connection between mining interests and the project site.

Impacts from the change in land use where the field laboratory buildings are currently located are likely to be minimal relative to the over two million acres of land the Superior National Forest manages. Temporary impacts to land use from implementing this alternative would be adverse, minor, and localized. Long-term impacts are not known, as the Superior National Forest has not indicated what the future land use may be.

### *3.5.7 Impacts of Alternative 6 (Proposed Action)*

Demolition of the buildings would represent a change in land use, as the research currently conducted from the site would most likely not continue to the same degree without the buildings. Once the buildings are removed, the uses of the land currently occupied by the field laboratory would be at the discretion of the Superior National Forest, with appropriate public input. Future use of the land on which the field laboratory is currently located would be expected to be compatible with the current land uses surrounding the project area, and could be anything from timber harvesting to recreation based on current Superior National Forest activities. There is no known connection between mining interests and the project site, so mining does not appear to be a likely future use of the site at this time.

Overall impacts from this alternative would be the same as described under alternative 5; temporary impacts to land use from implementing this alternative would be adverse, minor, and localized. The long-term impacts are not known, as the Superior National Forest has not indicated what the future land use may be.

## 3.6 Cultural Resources

### 3.6.1 Affected Environment

The Kawishiwi River area was inhabited by the Sioux and then the Chippewa Indians, and later, by the French Canadian voyageurs, or canoeists employed by fur companies. By the time the first of the fur traders (during the 18th century) entered the region, the Chippewa Indians had moved into the region from the east, moving the Sioux Indians farther west to the Plains. The tribal reservation nearest the project area is the Bois Forte Indian Reservation, formed for the Bois Forte Band of Chippewa, which is located more than 60 miles to the west.

Cultural and historic resources are protected by a variety of laws and regulations, including the National Historic Preservation Act, as amended, and the Archaeological Resources Protection Act. Section 106 of the National Historic Preservation Act and implementing regulations (36 CFR 800) outline the procedures to be followed in the documentation, evaluation, and mitigation of impacts on cultural resources. The Section 106 process applies to any Federal undertaking that has the potential to affect cultural resources.

The Minnesota Historical Society is the state agency charged with safeguarding Minnesota's historic buildings and sites. Minnesota's State Historical Preservation Officer (SHPO) administers over 7,000 historic properties included on the National Register of Historic Places, with 95 of these located within Lake County. The historical properties in Lake County are primarily located at the Gooseberry Falls State Park (which has 31 contributing historical log and stone buildings/structures built by CCC workers, featuring designs executed by Italian stonemasons in locally quarried granite); at Tettegouche Camp Historic District (which has 11 contributing historic rustic-style log and half-log buildings remaining from a private sport and recreation club established circa 1910 by group of Duluth businessmen); and, at the Isabella Ranger Station (which has 13 contributing historic rustic-style log residences and outbuildings built in 1934–35 by CCC workers for the USFS) (MHS 2008).

The CCC, created in 1933 by Franklin Roosevelt to help reduce unemployment during the Great Depression, was very active in Minnesota. The CCC hired men ages 18–25 and provided training and employment opportunities. CCC enrollees at the Superior National Forest were involved with reforestation; fighting fires; reversing soil erosion; and construction of fire towers, recreational buildings, administrative centers, and ranger dwellings. Included in these construction projects were the log buildings constructed at Tofte Ranger Station, Isabella Ranger Station, Halfway Ranger Station, and the South Kawishiwi River Community Building. It is thought that some or all of CCC companies 701, 704, 711, 1720, 1721, and 3703 may have participated in constructing the original buildings at the Halfway Ranger Station, which is now the Kawishiwi Field Laboratory (SNFHRP 2007).

The CCC constructed seven log buildings and one poured-concrete cellar at the Kawishiwi Field Laboratory. Locally experienced men, local craftsmen hired by the CCC to provide expertise in various building trades, guided the CCC enrollees in constructing these structures. Emil Neimi, Ed Salo, and Urho Charles Salimen were locally experienced men thought to be hired to work on the project site structures. They directed the project and were responsible for fitting the logs. All of the materials for the log buildings were from the local area; the logs (from both softwood pines and hardwood quaking aspen) were harvested from within the Superior National Forest, and the granite for the fireplaces and chimneys was quarried just outside of Ely, in a now defunct quarry.

The Kawishiwi Field Laboratory log buildings were constructed of horizontally laid wood logs. The logs were left round and unhewn, except for the groove incised on the bottom of each log to fit over the log below. As a result, no chinking mortar was required between logs. Only oakum caulking was used between the logs to produce a weather-tight joint. The logs are saddle-notched at the corners and extend beyond the wall planes, terminating in chiseled points. All windows are sliding sash and the doors were constructed from wood boards. All of the woodwork was stained a reddish-brown color (SNFHRP 2007).

The Kawishiwi Field Laboratory log buildings are an example of Rustic/Adirondack Style architecture; buildings which blend in with the natural environment. The seven Rustic/Adirondack Style log cabins onsite were built by the CCC in 1934 and 1935. Each of these log structures (Ranger Dwelling/Main Lodge, Pump House, Oil House, Outhouse/Sauna, District Office/Wolf Cabin, Warehouse/Garage, and Boathouse) is considered to contribute to the historic fabric of the HRSHD (Ferguson 2009).

For the most part, no major renovations have been made to the log buildings (see Figure 3-4). Of particular note, the former Ranger's Dwelling (now referred to as the Ranger Dwelling/Main Lodge) is identical to the Rangers' Dwellings at the Tofte and Isabella Ranger Stations. In contrast to the Rangers' Dwellings at the Tofte and Isabella Ranger Stations, however, the Ranger Dwelling/Main Lodge on the project site has many original intact interior fixtures and finishes, including the original bead board ceilings, original light fixtures, and original plumbing fixtures (SNFHRP 2007).

In addition to the seven log buildings on site, there is a stand-alone underground concrete cellar poured by the CCC at the site, and a balloon-framed residence. The concrete cellar was constructed around 1934, and may have been used for food or seedling storage. The balloon-framed residence, referred to as the LSFES Dwelling/Bunkhouse, was built in 1931 with funds from Herbert Hoover's Public Works Administration. The balloon-framed structure is the oldest remaining administrative building in the Superior National Forest, and the first to have an indoor bathroom. The bathroom reportedly attracted a lot of attention from the surrounding community, as Ely gets quite cold during the winter and it was a novelty to not have to go to the outhouse. Another important feature is the building style which was typical of the era in which it was built; it was an early light-framed structure.



**Figure 3-4. Ranger Dwelling (top 1934, bottom 2006)**

Staff of the Superior National Forest's Heritage Resources Program has completed an evaluation of each of the nine original buildings on site and considers the buildings eligible for inclusion on the National Register of Historic Places under criteria A and C. Criterion A states that a property must be associated with a historic event at a local, state, or national level. Criterion C states that a property must be an example of an architectural style, period, method of construction, or the work of a known master craft-person or designer. Specifically, Superior National Forest staff believes that the site meets criterion A at the national level, because it is associated with two historically significant initiatives of the Federal Government: 1) Management of public lands, and 2) New Deal Era programs. The staff also believes that the site meets criterion C because seven of its buildings are intact examples of the Rustic/Adirondack design used by government land management agencies for constructing their administrative buildings during the first half of the 20th century (SNFHRP 2007).

As per National Historic Preservation Act requirements, consultation with the Minnesota SHPO has been initiated. This formal consultation process, called the Section 106 Review process, takes its name from Section 106 of the National Historic Preservation Act of 1966, which set up a review process through the states to assure state-level review of Federal projects that may adversely impact historic properties. Minnesota's SHPO has responded to consultation letters, and has indicated that the Kawishiwi Field Laboratory site meets the criteria of the National Register of Historic Places as a historic district. The SHPO requested a delineation of the boundaries of the historic district. This delineation was completed in 2009.

### *3.6.2 Impacts of Alternative 1*

Under alternative 1, the No Action alternative, the buildings at the Kawishiwi Field Laboratory would likely continue to deteriorate in condition without adequate restoration or maintenance funds, as discussed under section 2.2. The long-term effects of this deterioration would be structural failure and eventual degradation and loss beyond repair of the buildings.

The site buildings that contribute to the site's eligibility for inclusion on the National Register of Historic Places are unique in several ways. Although similar log buildings can be found at the Tofte and Isabella Ranger Stations, the former Ranger's Dwelling at Kawishiwi has many original intact interior fixtures and finishes, as previously noted. Additionally, the LSFES Dwelling/Bunkhouse building is unique to the Kawishiwi site, and is believed to be the oldest remaining administrative building on the Superior National Forest (Ferguson 2009). The loss of this historic district through neglect would constitute a long-term, adverse, potentially significant impact on cultural resources.

### *3.6.3 Impacts of Alternative 2*

Under alternative 2, maintenance funds of the Kawishiwi Field Laboratory buildings would be increased in order to adequately rehabilitate and maintain the buildings. Current use of the buildings would continue. This would result in a marked long-term, major beneficial impact to the historic properties located on site. Impacts would be even more beneficial if the historic district is officially nominated for inclusion on the National Register of Historic Places so that maintenance specific to the historic requirements of the site can be agreed upon with the SHPO.

### *3.6.4 Impacts of Alternative 3*

Under alternative 3, transfer of ownership and management of the Kawishiwi Field Laboratory buildings, the NRS would be transferring historic properties eligible for inclusion on the National Register of Historic Places, out of NRS and possibly out of Federal control. This transfer of

control in and of itself may constitute an adverse effect on cultural and historic resources of significance, as per 36 CFR Part 800.5. However, with proper coordination with SHPO, these impacts could be partially mitigated and the resultant adverse impacts would be less than significant.

Any deed agreement between NRS and the entity willing and able to assume ownership and management of the buildings would include stipulations regarding the maintenance and preservation of the buildings as historic structures and maintenance of the site as a historic district. Coordination involving SHPO would form the backbone of developing these stipulations.

The NRS would notify the Advisory Council on Historic Preservation of its actions, so it has an opportunity to participate in developing maintenance and preservation stipulations and advise the NRS of additional recommended courses of action to ensure that impacts to cultural resources are mitigated to the extent possible.

### ***3.6.5 Impacts of Alternative 4***

Alternative 4 would involve only a transfer of management of the Kawishiwi Field Laboratory buildings to another entity. Any lease agreement between NRS and the entity willing and able to assume management of the buildings would include stipulations regarding the maintenance and preservation of the buildings as historic structures and maintenance of the site as a historic district. Coordination involving SHPO would form the backbone of developing these stipulations.

SHPO has previously indicated its support for an alternative similar to this (see Appendix A). Impacts of this alternative to cultural resources would be long-term and beneficial.

### ***3.6.6 Impacts of Alternative 5***

Under alternative 5, some or all of the buildings that are able to be disassembled and moved would be relocated. Before disassembly, the original setting and context of the site would be documented. Consultation and coordination with the SHPO would determine additional requirements. In terms of historical significance, the fact that the buildings were built on the site is significant, as well as how the buildings relate to the use of the site. Relocation of the buildings would irreversibly damage their historical significance. However, the location of the buildings is not the only criterion that was used to establish their historical significance; moving the buildings offsite would not detract from the historical significance of the craftsmanship of the individual buildings, although it would still be recognized as a loss by the historical preservation community. Keeping the buildings together and within the Ely region would help to mitigate some, but not all of the historical losses. Overall impacts to cultural resources from the relocation of the Kawishiwi Field Laboratory structures would be long-term, adverse, and major.

Disassembly of the buildings under alternative 5 would require excavation to remove the building foundations and basements. Should any item of potential archaeological significance be discovered during these ground-disturbing activities, the SHPO would be notified immediately. If any historically or culturally significant materials or artifacts were unearthed, activities would halt immediately and not resume until consultation with the SHPO was complete, in accordance with 36 CFR 800.13.

### ***3.6.7 Impacts of Alternative 6 (Proposed Action)***

Alternative 6 would involve the demolition or abandonment in place of all of the buildings at the Kawishiwi Field Laboratory. Prior to any demolition activities, all site details and historically

significant structures would be extensively documented in accordance with Library of Congress HABS/HAER/HALS standards.

The permanent loss of the structures at the laboratory cannot be fully mitigated. Their demolition would represent a long-term, adverse impact on cultural resources. The significance of this impact, however, would be mitigated by extensive documentation of the site's buildings and landscape.

## 3.7 Waste and Hazardous Material Management

### 3.7.1 *Affected Environment*

The buildings at the Kawishiwi Field Laboratory utilize septic fields for wastewater treatment. Municipal solid waste and any hazardous waste that is generated at the site is collected and disposed of in accordance with regulations promulgated by the MPCA.

Chemicals used in the routine research activities at the laboratory likely include fixatives and preservatives, solvents, lubricants, fuels, cleaners, and degreasers. Additionally, some of the site buildings likely have construction materials, particularly insulation, which contain asbestos containing material (ACM) and lead. The attic of the Ranger Dwelling/Main Lodge also suffers from a bat infestation. Bat guano is a biohazardous material, and is particularly dangerous when it becomes dried and airborne (Dunn 1997).

The Lake County Solid Waste Department is responsible for all solid waste activities within Lake County, and owns and operates a demolition landfill near the Castle Danger area in Silver Creek Township. This landfill is an unlined landfill, and there is a specific list of materials accepted at the facility, including a very restricted list of industrial waste and asbestos (as well as ACM). Lake County also owns and operates a full service recycling facility located within the City of Two Harbors on Recycle Center Drive, in addition to providing a program for disposing of hazardous waste.

The Superior National Forest is responsible for management of wastes on its lands. The forest has a "Green Team," which is a group of employees who work to promote sustainability in the forest, while reducing waste and increasing recycling opportunities.

### 3.7.2 *Impacts of Alternative 1*

Under the No Action alternative, waste generation, collection, and disposal would continue according to current practices. No increase in waste generated at the site is predicted, and hazardous materials present at the site would remain at the site. There would be no impact to either waste management or hazardous materials management from this alternative.

### 3.7.3 *Impacts of Alternative 2*

Alternative 2, the increase of building maintenance funds, would not cause any change in the amount of municipal solid waste generated at the Kawishiwi Field Laboratory, or the manner in which the waste is collected. However, the increased building funds would be used to ensure that the bat and rodent infestation in the Ranger Dwelling/Main Lodge is eradicated and that the bat guano in the dwelling is abated according to state and Federal regulations. In addition, any lead, or friable or exposed ACM, would be abated from the site. Although these actions would result in an increase in items to be disposed of in the area's landfill and hazardous waste facility, this would only constitute a temporary, minor, adverse impact to localized waste management.

### ***3.7.4 Impacts of Alternative 3***

Alternative 3 would involve the transfer of both ownership and management of the Kawishiwi Field Laboratory buildings to another entity. It is likely that the new entity assuming responsibility for the buildings would eradicate the bat and rodent infestation in the Ranger Dwelling/Main Lodge and abate the bat guano in the dwelling, according to state and Federal regulations. In addition, the entity may choose to abate any lead, or friable or exposed ACM, from the site. As under alternative 2, these actions would result in an increase in items to be disposed of in the area's landfill and hazardous waste facility. However, this increase is only anticipated to constitute a temporary, minor, adverse impact to localized waste management.

### ***3.7.5 Impacts of Alternative 4***

Under alternative 4, the same impacts can be anticipated as discussed under alternative 3. Following the transfer of management of the field laboratory buildings to another entity, that entity would assume maintenance and repair responsibility for the buildings. It is likely that the new entity assuming management responsibility for the buildings would eradicate the bat and rodent infestation in the Ranger Dwelling/Main Lodge and abate the bat guano in the dwelling, according to state and Federal regulations. In addition, the entity may choose to abate any lead, or friable or exposed ACM, from the site. As under alternatives 2 and 3, these actions would result in an increase in items to be disposed of in the area's landfill and hazardous waste facility. However, this increase is only anticipated to constitute a temporary, localized, minor, adverse impact to waste management.

### ***3.7.6 Impacts of Alternative 5***

Relocation of the field laboratory buildings under alternative 5 would include disassembly of the structures to be relocated, and demolition or abandonment in place of the remaining structures. Prior to disassembly or demolition of all buildings at the field laboratory, a survey would be conducted by the NRS and the entity assuming ownership of the buildings. Each building would be characterized with respect to the presence, location, and condition of all asbestos materials, ACM, lead materials, and any and all hazardous and biohazardous materials. These materials would all be abated and disposed of in accordance with all local, state, and Federal regulations and law, prior to the commencement of relocation or demolition activities.

If rotten and unusable logs are found during disassembly of the structures to be relocated, these logs would be disposed of for recycling, in addition to any and all materials not desired by the entity assuming ownership of the buildings at their new location. Any demolition activities would also generate considerable amounts of demolition debris.

Recycling and/or reuse of all discarded materials would be encouraged whenever possible. Any non-hazardous construction debris or other solid waste that cannot be reused or recycled is anticipated to be disposed of by a contractor at the Lake County landfill. Provided all personnel follow applicable guidelines, impacts from the management of waste and hazardous materials would be short-term, adverse, and minor.

### ***3.7.7 Impacts of Alternative 6 (Proposed Action)***

Demolition of all site structures under alternative 6 would generate a considerable amount of demolition debris. As under alternative 5, NRS would conduct a survey prior to demolition of the buildings at the field laboratory. Each building would be characterized with respect to the presence, location, and condition of all asbestos materials, ACM, lead materials, and any and all

hazardous and biohazardous materials. These materials would all be abated and disposed of in accordance with all local, state, and Federal regulations and law, prior to the commencement of demolition activities.

Demolition is anticipated to be carried out in a step-by-step fashion, so that all materials can be separated and classified according to their reuse, recycling, or waste disposal potential and categorization. Recycling and/or reuse of all discarded materials would be encouraged whenever possible. Any non-hazardous construction debris or other solid waste that cannot be reused or recycled is anticipated to be disposed of by a contractor at the Lake County landfill. Overall impacts from the management of waste and hazardous materials would be short-term, adverse, and minor.

## 3.8 Human Health and Safety

### *3.8.1 Affected Environment*

The primary human health and safety concern at the Kawishiwi Field Laboratory is the exposure of visitors and long-term researchers to the current building conditions. Structural conditions of the existing buildings were rated from good to poor in a building survey conducted over 10 years ago (Dunn 1997), and some of the buildings have insect, bat, and rat infestations. Additionally, the buildings are not up to current fire protection codes and some of the buildings likely have construction materials, particularly insulation, which contain ACM.

During the building survey, the Ranger Dwelling/Main Lodge was listed in generally fair structural condition (Dunn 1997). The majority of the researchers who utilize the Kawishiwi Field Laboratory site reside in this building during research periods. Many components of the structure are worn and require repair, however none of these components is considered likely to lead to structural failure in the near future. Bat infestation has occurred in the attic of the building, and as a result poses a great risk to the health of inhabitants. Bat guano is a biohazardous material, and is particularly dangerous when it becomes dried and airborne. Bat-cave disease is a possibility if the infestation is not addressed in a timely and effective manner, which would include removing the bats, disposing of contaminated building materials, and sealing potential points of entry (Dunn 1997). In addition to bats, the building has a history of rat infestation.

The District Office/Wolf Cabin was listed in fair structural condition. However, there is no usable indoor plumbing or heat. This facility is infrequently used by the staff, but when in use, space heaters are often placed in the building to provide heat. In addition to an active powder post beetle infestation, a number of structural repairs are needed, including new roof shingles, plumbing repairs, and a new front entry porch (Dunn 1997). Powder post beetles are dry-wood-eating insects. Damage is caused by the beetles tunneling in the wood. Professional extermination of the beetles and their larvae is recommended (Dunn 1997).

The LSFES Dwelling/Bunkhouse was listed in good structural condition during the building survey, and had not been impacted by a powder post beetle infestation. It is a residential building in year-round use by the USGS lead researcher at the laboratory.

The Pump House was also considered to be in generally good structural condition. However, the structure suffers from a powder post beetle infestation.

The Warehouse/Garage was listed to be in generally fair to good structural condition. The building suffers from an active powder post beetle infestation, and the front side logs need to be replaced (Dunn 1997).

The Cellar appeared to be in good structural condition. During the building survey, a great deal of interior condensation was observed on the walls.

The Outhouse was listed as badly deteriorated, and repairs would include either partial or complete restoration of the structure. Building surveys showed signs of advanced insect infestation.

The Oil House was listed in poor structural condition. The building has suffered extensive insect infestation, and large piles of frass, or insect fecal pellets, were observed on the inside of the structure during the building survey. Additionally, the roof shingles and flashing need to be replaced (Dunn 1997).

The Boathouse was listed in fair structural condition. The building suffers from an active powder post beetle infestation.

The three buildings at the Kawishiwi Field Laboratory not considered historically significant: the office, insectary, and second outhouse, were not part of the building survey conducted in 1997. The office appears to be in good overall condition, and is actively used as both an office and a laboratory. The insectary and second outhouse are both in very poor condition and are structurally unsound; these buildings are not used.

### *3.8.2 Impacts of Alternative 1*

Under alternative 1, current uses of the field laboratory buildings would continue and the buildings would continue to deteriorate without adequate rehabilitation and maintenance funds. Any and all structurally unsound buildings pose a substantial safety risk to building occupants. Additionally, the lack of a fire warning system and fire extinguishing system in the site buildings presents another substantial safety risk, as the buildings are generally constructed of old wood, which is readily combustible. This is particularly worrisome for the researchers, students, and site visitors who utilize the District Office/Wolf Cabin and other buildings where space heaters are used.

In addition to structural integrity and fire risk issues, researchers, students, and site visitors who utilize the Ranger Dwelling/Main Lodge could potentially be exposed to asbestos, ACM, lead, bat guano, and rodents. It is probable that some or all of these materials are present in other site buildings as well, although possibly not to the extent found at the Ranger Dwelling/Main Lodge.

The overall human health and safety impacts arising from the No Action alternative to building occupants and visitors at the Kawishiwi Field Laboratory would be long-term, adverse, localized, and major.

### *3.8.3 Impacts of Alternative 2*

Under alternative 2, increased maintenance funds for the rehabilitation and needed maintenance of the field laboratory buildings would address many of the issues of concern to human health and safety: the structural integrity of the buildings, fire risk issues, and the presence of asbestos, ACM, lead, bat guano, and rodents. Although all of these issues would not be able to be

addressed immediately or completely, it is anticipated that impacts to the human health and safety of building occupants and visitors would be long-term, beneficial, localized, and moderate.

### *3.8.4 Impacts of Alternative 3*

Alternative 3, the transfer of both ownership and management of the Kawishiwi Field Laboratory buildings to another entity, is likely to result in impacts similar to those discussed under alternative 2. It is likely that the new entity assuming responsibility for the buildings would choose to install fire warning systems and protection measures in the buildings, eradicate the bat and rodent infestation in the Ranger Dwelling/Main Lodge and abate the bat guano in the dwelling, and abate any lead or friable or exposed ACM from the site. Human health and safety impacts from this alternative on future building occupants would be long-term, beneficial, localized, and minor to major, depending on the extent of building upgrades.

### *3.8.5 Impacts of Alternative 4*

Under alternative 4, the same impacts can be anticipated as discussed under alternative 3. Following transfer of management of the field laboratory buildings to another entity, that entity would assume maintenance and repair responsibility for the buildings. It is likely that the new entity assuming management responsibility for the buildings would choose to install fire warning systems and protection measures in the buildings, eradicate the bat and rodent infestation in the Ranger Dwelling/Main Lodge and abate the bat guano in the dwelling, and abate any lead or friable or exposed ACM from the site. Human health and safety impacts from this alternative on future building occupants would be long-term, beneficial, localized, and minor to major, depending on the extent of building upgrades.

### *3.8.6 Impacts of Alternative 5*

Relocation of the field laboratory buildings under alternative 5 would include disassembly of the structures to be relocated, and demolition or abandonment in place of the remaining structures. Prior to disassembly or demolition of all buildings at the field laboratory, a survey would be conducted by the NRS and the entity assuming ownership of the buildings. Each building would be characterized with respect to the presence, location, and condition of all asbestos materials, ACM, lead materials, and any and all hazardous and biohazardous materials. All these materials would be abated and disposed of in accordance with all local, state, and Federal regulations and law, prior to the commencement of relocation or demolition activities. If rotten and unusable logs are found during disassembly of the structures to be relocated, these logs would be replaced with new, structurally sound logs.

The worker safety program requirements applicable at the project site during project relocation and demolition activities would include the “construction” and “general industry” standards of the Federal Occupational Safety and Health Administration (OSHA) 29 CFR 1910 and 1926. These standards include hazardous materials management and handling, walking-working surfaces, operation of power equipment, adequate ventilation, noise exposure controls, fire protection, and electrical equipment safeguards. Because of the level and duration of project activities, the impacts to human health of both site workers and the public can be expected to be temporary, minor, adverse, and localized. Following applicable mitigation measures and BMPs will reduce the adverse impacts to human health even further. The long-term impacts of alternative 5 on human health and safety following completion of site activities would be beneficial and moderate.

### *3.8.7 Impacts of Alternative 6 (Proposed Action)*

The demolition of all field laboratory buildings under alternative 6 would have similar impacts to human health and safety as discussed under alternative 5. Prior to demolition of all buildings at the field laboratory, NRS would conduct a survey to characterize each building with respect to the presence, location, and condition of all asbestos materials, ACM, lead materials, and any and all hazardous and biohazardous materials. These materials would be abated and disposed of in accordance with all local, state, and Federal regulations and law, prior to the commencement of demolition activities.

The worker safety program requirements applicable at the project site during project demolition activities would include OSHA's "construction" and "general industry" standards. Because of the level and duration of project activities, impacts to human health of both site workers and the public can be expected to be temporary, minor, adverse, and localized. Following the mitigation measures and BMPs will reduce the adverse impacts to human health even further. The long-term impacts of alternative 6 on human health and safety following completion of site activities would be beneficial and moderate.

## 3.9 Socioeconomics

### *3.9.1 Affected Environment*

The Kawishiwi Field Laboratory is located in Lake County, completely within the boundaries of the Superior National Forest. The city of Ely, Minnesota, is the closest municipality to the field laboratory. The area is located in the Vermillion Iron Range, which was historically home to several iron ore mines. Today, Ely and its immediate environs are better known as the gateway to the BWCAW and home to the IWC, and rely heavily on income related to recreation and tourism.

The 2006 population estimate for Lake County, Minnesota, was 10,966 people, which is a 5.29 percent increase from the 1990 levels (USCB 2008, USCB 1990a). Ely, which is located in adjacent St. Louis County, had 3,724 people in 2000, which is a 6.15 percent decrease from the 1990 levels (USCB 1990b, USCB 2000a). The percent of residents below poverty was 7.7 in Lake County in 2004 (USCB 2008, USCB 2000a).

In 2006, Lake County had 7,411 housing units, and the median value of owner-occupied housing units was \$71,300 (USCB 2008). In 2000, approximately 68 percent of the housing units were occupied in Lake County (USCB 2000b). In 2000, Ely, Minnesota, had 1,912 housing units with 88.6 percent being occupied, and the median value of owner-occupied units was \$56,900 (USCB 2000a).

For Lake County in 2000, the top three occupation categories were management, professional, and related (29.7 percent); service (19.7 percent); and, sales and office (19.4 percent). Farming, fishing, and forestry occupations comprised 1.7 percent of the employment force, and construction, extraction, and maintenance occupations comprised 13.2 percent. The top three industry categories which provided employment were educational, health, and social service (23.1 percent); arts, entertainment, recreation, accommodation, and food services (13.7 percent); and agriculture, forestry, fishing and hunting, and mining (10.6 percent). The total labor force was 8,873 in 2000 (USCB 2000c).

For the city of Ely in 2000, the top three occupation categories were management, professional, and related (30.0 percent); sales and office (23.8 percent); and service (21.4 percent). Farming,

fishing, and forestry occupations comprised 0.4 percent, and construction, extraction, and maintenance occupations comprised 14.6 percent. The top three industry categories which provided employment were educational, health, and social service (25.9 percent); retail (13.6 percent); and arts, entertainment, recreation, accommodation, and food services (12.5 percent). The total labor force was 1,806 (USCB 2000a).

In 2006, Lake County's total personal income was \$371,088,000 (BEA 2008). Median household income was \$45,400 for Lake County in 2004, and \$27,615 for Ely in 2000. Per capita money income was \$19,761 in 1999 for Lake County, and \$16,855 in 2000 for Ely (USCB 2008, USCB 2000a). The 2000 unemployment rate was 3.3 percent for Lake County and 4.4 percent for Ely (USCB 2000c, USCB 2000a).

The Superior National Forest received 4 million visits in 2001. Forest visitors spend approximately \$1,400 per person on all outdoor recreation activities (equipment, recreation trips, memberships, and licenses). Approximately \$115.00 per person of this expenditure occurs within a 50-mile radius of the recreation site. In 2002, the cumulative economic impact from the Superior National Forest was \$561,000,000 and 24,720 jobs (USFS 2004a).

The threshold level of significance for socioeconomic resources is the potential of the project to result in a substantial population or employment increase or decrease in the region of influence.

### *3.9.2 Impacts of Alternative 1*

Under the No Action alternative, alternative 1, the buildings would continue to deteriorate from lack of maintenance and rehabilitation. The typical expenditures by the researchers (travel, supplies, food, etc.) would probably continue until the buildings become unusable. This spending represents some beneficial economic benefit to the community. Since this economic benefit currently occurs, it represents no change to the current condition. If the buildings become unusable, the research presumably would continue on some level, but on a smaller scale, such as graduate students in tents. This would constitute smaller expenditures, as fewer people would be conducting the research. The loss of expenditures and people from research is likely to be minimal in comparison with the cumulative economic impact of \$561,000,000 and 24,720 jobs from the Superior National Forest. Therefore, while the buildings are useable, the beneficial socioeconomic impact will be short-term and negligible with expenditures continuing, but once the buildings are no longer operational, the impact would be adverse, long-term, regional, and minor.

### *3.9.3 Impacts of Alternative 2*

Increasing the maintenance funds, alternative 2, could potentially represent an increase in jobs in the area for rehabilitating and maintaining the field laboratory. The length of time required to rehabilitate the buildings would depend on the number of people employed. However, the need for maintenance would require jobs regularly for a longer period of time than the rehabilitation. At a maximum, it is estimated that approximately 15 people would be required for the rehabilitating the field laboratory buildings. This represents less than one percent of the Ely labor force. Between one and five people would be required for the continued maintenance, representing an even smaller potential socioeconomic benefit to the region.

Given the amount of unoccupied housing and unemployment, the maximum estimates of 15 people for rehabilitation and up to 5 for maintenance would likely be accommodated by the existing community labor pool and housing stocks or would represent only a minimal increase in

population for the temporary employment. This would be expected to be only a minimal impact to housing and expenditures. Any increase in employment and population from these jobs created would be minimal compared to the 8,873 people already in Lake County.

Increases in funding to rehabilitate and maintain the field laboratory would come from a finite NRS budget. Other NRS site(s) or program(s) would thus be likely to see reductions in jobs and funding. The impacts of this reallocation of funding would depend on change in funding at the sites and programs receiving less funding, which is currently unknown. If the reallocation were done in a manner which minimized impacts to the other NRS sites and programs, these impacts would be partially mitigated.

The expenditures from alternative 2 in the region would probably be small compared to Lake County's \$371,088,000 total personal income. Thus, implementation of alternative 2 would not likely cause any indirect jobs to be created. Therefore, the known impacts from alternative 2 to the field laboratory area would be negligible.

### *3.9.4 Impacts of Alternative 3*

The impacts of alternative 3 (Transfer of Ownership and Management) on socioeconomics would depend on the final use of the buildings. Restoring and maintaining the buildings would have the same impacts as alternative 2. There could possibly be additional jobs created for operating the buildings, such as a site manager, if the buildings are converted into an ecoresort. Similar to alternative 2, these jobs would mostly likely be a minimal component of the larger Ely and Lake County area economy.

As long as the buildings are used for continuing research and education, expenditures and population should not be substantially different from current expenditures and population. With no substantial change in expenditures, the number of jobs should not be substantially changed. If the new ownership and management of the field buildings would not allow USGS to use the buildings for research, the USGS researchers currently at the field laboratory would most likely be transferred to another place, and their jobs and positions would not be lost. Thus, relocation of the researchers currently onsite would not represent a loss in employment. The exception would be any reduction in research load by students and visiting scientists. Loss of expenditures from no longer conducting research at the field laboratory is likely to be small compared to the Lake County's total personal income of \$371,088,000.

Since no new buildings would be permitted at the site, regardless of the potential reuses of the project area, the possibilities for increased population and employment related to reuses of the buildings are limited. The visitation and expenditures from using the field laboratory buildings as a resort could be an increase from the current expenditures in recreation and lodging. However, due to the restriction from constructing additional buildings, any increase in revenue (which could translate in new population and jobs) would be small compared to the cumulative economic impact of \$561,000,000 and 24,720 jobs from Superior National Forest as well as the Lake County's total personal income of \$371,088,000. Similarly, since no new buildings would be allowed for the privatization of the site to homesteads, any increase in taxes or money from transferring the field laboratory to houses would be minimal compared to the economic impact of Superior National Forest and the project area. Therefore, the impacts of alternative 3 to socioeconomics would likely be negligible.

### ***3.9.5 Impacts of Alternative 4***

The same rehabilitation and maintenance requirements of the site which would be undertaken in alternative 2 would likely occur under alternative 4. The difference would be that the NRS would not be funding these tasks. The estimate of jobs created would be the same as alternative 2. If the entity assuming management of the buildings decides to not allow USGS to continue to use it, the USGS employees currently at the field laboratory would most likely be transferred to another place and not lose their jobs. The same is likely for the researchers currently utilizing the field laboratory. Thus, these researchers not continuing to research at the current location of the field laboratory would not represent a loss in employment, but relocation. The exception would be any reduction in research by students and visiting scientists. They might continue to conduct research on a smaller scale or not use the Superior National Forest. Regardless, their expenditures and population would likely be minimal compared to the 4 million visits to Superior National Forest annually. The possible uses of the buildings under alternative 4 are similar to those discussed in alternative 3. Therefore, the potential impacts would be the same under alternative 4 as alternative 3, negligible.

### ***3.9.6 Impacts of Alternative 5***

Under alternative 5, the time required to disassemble, relocate, and reassemble the buildings would depend on the number of workers. It is not likely to require more than 30 people at any given time, or approximately 1.7 percent of the Ely workforce, which would be minimal impact to population. Because the jobs would be temporary, the impact to unemployment from these jobs would not be expected to be substantial, even if all of the jobs utilized local people. The economic impacts of this alternative would depend on the final location of the buildings and their use at the new location, which is currently unknown.

The initial investment needed to relocate and rehabilitate the buildings has been quoted to be \$200,000 to over \$1 million. Not all of this is likely to be spent in the project area. Even if it were, the \$1 million would represent approximately 0.3 percent of the total personal income of Lake County. This would not likely contribute to the creation of many new jobs, especially as the activity would be temporary.

The USGS employees currently working at the field laboratory would most likely be transferred to another place and not lose their jobs. The same is likely for the researchers currently at the field laboratory. Thus, these researchers not continuing to research at the current location of the field laboratory would not represent a loss in employment, but relocation.

Once the buildings have been moved, the uses of the land currently occupied by the field laboratory would depend on Superior National Forest. It could be used for anything from timber harvesting to recreation, based on current Forest activities. The economic impacts from the additional land are minimal compared to the over two million acres of Superior National Forest and the cumulative economic impact of \$561,000,000 and 24,720 jobs from the Forest (see Section 3.5). Therefore, the impacts to socioeconomics from this alternative are expected to be negligible. However, the true scale of the impacts would be based on the final location and reuse of the buildings.

### ***3.9.7 Impacts of Alternative 6 (Proposed Action)***

Demolition of the buildings would represent a loss of possible income and jobs from the rehabilitation, research/recreation, and maintenance opportunities which are a part of the other alternatives under consideration. The time to remove the buildings would depend on the number

of workers. It is not likely to require more than 30 people at any given time at the site, which would be minimal impact to population. Because the jobs would be temporary, the impact to unemployment from these jobs would not be expected to be substantial.

Once the buildings have been demolished, the uses of the land currently occupied by the field laboratory buildings would depend on the Superior National Forest. Impacts would be similar as those described under alternative 5, above. Overall, the socioeconomic impacts from the employment of demolition crews would be beneficial, but negligible in the regional context.

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## 4 Glossary

**APE (Area of Potential Effects):** The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.

**Archaeological resource:** Any material remains or physical evidence of past human life or activities, which are of archaeological interest, including the record of the effects of human activities on the environment. An archaeological resource is capable of revealing scientific or humanistic information through archaeological research.

**Attainment area:** A zone within which the level of a pollutant is considered to meet United States National Ambient Air Quality Standards.

**Best management practice (BMP):** A practice or combination of practices chosen as the most effective, economical, and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with State and local water quality goals. Selection of appropriate BMPs depends largely upon the conditions of the site, such as land use, topography, slope, water table elevation, and geology.

**Cultural resource:** An aspect of a cultural system that is valued by or significantly representative of a culture, or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places.

**Cumulative impacts:** Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such other actions; effects resulting from individually minor, but collectively significant, actions taking place over a period of time.

**Diversity:** The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

**EA (Environmental Assessment):** A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

**EIS (Environmental Impact Statement):** A detailed written statement required by Section 102(2) (C) of the National Environmental Policy Act, analyzing the environmental impacts of a Proposed Action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and ir retrievable commitment of resources (40 CFR 1508.11).

**Endangered Species:** A species that is threatened with extinction throughout all or a significant portion of its range.

**FONSI (Finding of No Significant Impact):** A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a Federal action will have no significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared (40 CFR 1508.13).

**Floodplain:** The lowland that borders a stream or river and is found outside of the floodway. It is usually dry, but subject to flooding.

**Historic District:** A geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history (NPS 1998).

**Historic Property:** A district, site, structure, or landscape significant in American history, architecture, engineering, archaeology, or culture; an umbrella term for all entries in the National Register of Historic Places (NPS 1998).

**Historic Site:** The site of a significant event, prehistoric or historic occupation or activity, or structure or landscape whether extant or vanished, where the site itself possesses historical, cultural, or archaeological value apart from the value of any existing structure or landscape (NPS, 1998).

**Historic Structure:** A constructed work, usually immovable by nature or design, consciously created to serve some human activity that is significant in American history, architecture, engineering, or culture (NPS 1998).

**Invasive Species:** An alien (nonnative to the ecosystem) species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

**Mitigation:** A method or action to reduce or eliminate adverse program impacts.

**NEPA (National Environmental Policy Act of 1969):** Requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Established requirement for EAs and EISs. Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making (40 CFR 1500).

**Non-attainment Area:** An area that has been designated by the U.S. Environmental Protection Agency and the appropriate state air quality agency as exceeding one or more National Ambient Air Quality Standards.

**Perennial Stream:** A stream that flows throughout the year.

**Runoff:** Non-infiltrating water entering a stream or other conveyance channel shortly after a rainfall.

**Sediment:** Any finely divided organic and/or mineral matter derived from rocks or biological sources that has been transported and deposited by water or air.

**Sedimentation:** The process of depositing sediment from suspension in water.

**Silt:** Unconsolidated mineral sediment of finer grain size than sand. Due to fine grain, easily suspended in stagnant water or carried by moving water, and often accumulates on the bottom of rivers.

**Silt Fence:** A temporary barrier, consisting of a filter fabric stretched between supporting posts with the bottom entrenched in the soil, used to trap sediment being borne by runoff. Typically used as a BMP during ground disturbing activities to avoid displacement of sediments off of the disturbed site.

**Soil erosion:** The removal and loss of soil by the action of water, ice, gravity, or wind.

**Soil permeability:** The quality that enables the soil to transmit water or air.

**State Historic Preservation Officer (SHPO):** The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as a liaison for purposes of implementing the National Historic Preservation Act.

**Structure (in terms of cultural resources):** A constructed work, usually immovable by nature or design, consciously created to serve some human activity (e.g., buildings, monuments, dams, roads, railroad tracks, canals, millraces, bridges, tunnels, locomotives, forts and associated earthworks, Indian mounds, ruins, fences, and outdoor sculpture). In the National Register program, “structure” is limited to functional constructions other than buildings (NPS 1998).

**Threatened Species:** A species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

**Wetlands:** Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil, including swamps, marshes, bogs, and other similar areas.

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The 2010 update and revision of this EA was completed by the Forest Service Enterprise Technical Services Team, Principal NEPA Planner John R. Slown, AICP.

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## **Appendix A**

### Agency Correspondence



**Forest  
Service**

**Superior  
National  
Forest**

**8901 Grand Avenue Place  
Duluth, Minnesota 55808-1122  
(218) 626-4300  
Fax: (218) 626-4398**

7300/6440

**Date:** May 6, 2009

**File Code:**  
**Route To:**

**Subject:** Disposition of the Kawishiwi Field Laboratory

**To:** Thomas L. Schmidt, Assistant Director, Northern Research Station

Thank you for the opportunity to review the Draft Environmental Assessment (EA) for the Kawishiwi Field Laboratory Building Disposition, which was dated October 2008, and included with your memo of February 10, 2009.

As you know the Superior National Forest (SNF) has been and continues to be supportive of the research activities provided through this facility. However, the SNF faces challenges, including declining budgets, which are similar to those presented by the Northern Research Station (NRS) as justification for disposing of the buildings. Because of these challenges, the SNF has consistently stated, throughout the NRS evaluation process, that it will not accept responsibility for maintenance or management of the buildings. As noted on page 1-2 of the EA, lack of care over the years has led to building deterioration.

Nonetheless, your memo indicates NRS's preferences are alternative three "Transfer of Ownership and Management" and alternative four "Transfer Management." As stated on pages 2-9 and 2-10 of the EA, the SNF has no interest in assuming ownership or management responsibility of the buildings or issuing a Special Use Permit for third party use. Alternatives three and four are not acceptable to the SNF and I recommend they be dismissed from further consideration.

I agree with the building-related health and safety concerns disclosed in the EA and also recognize the impacts to cultural resources related to all proposed alternatives. I urge NRS to begin consultation with the State Historic Preservation Office to identify specific mitigation requirements.

If you have any questions, please contact Elizabeth Roat at (218) 626-4373.

/s/ Mary L. Shedd (for)

JAMES W. SANDERS  
Forest Supervisor

cc: Mark VanEvery  
Roseann M Hess  
Elizabeth Roat



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

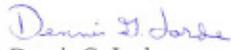
Northern Prairie Wildlife Research Center  
8711 37<sup>th</sup> St. SE  
Jamestown, ND 58401  
April 20, 2007

Michael T. Rains  
Station Director  
USDA – Northern Research Station  
11 Campus Boulevard  
Suite 200  
Newton Square, PA 19073

Dear Mr. Rains:

Thank you for your letter (File Code 6400) of April 9, 2007 and your offer to DOI-USGS to take permanent ownership and managements of the buildings and site of the Kawishiwi Field Laboratory near Ely, MN. Although this site continues to be the headquarters and duty station of the long-term scientific field study of Gray Wolves, the USGS Northern Prairie Wildlife Research Center does not have the funding available to address the major maintenance and management issues of these facilities beyond the routine incidental expenses to house a field crew at the site. Therefore, we must decline your offer to transfer ownership and management to the USGS.

Sincerely,

  
Dennis G. Jorde  
Acting Center Director  
701-253-5514



## United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Northern Prairie Wildlife Research Center  
8711 37th Street SE  
Jamestown, North Dakota 58401-7317

July 3, 2008

Richard D. Sindt  
USFS Northern Research Station  
1992 Folwell Ave  
St. Paul, MN 55108

Dear Mr. Sindt:

I am replying to your May 6, 2008 request for comments regarding USGS use of Kawishiwi Field Laboratory in Ely, Minnesota.

You are correct in that USGS does not intend to use the facility long enough to assume its ownership and management. However, use of the facility is critical to our wolf research program, and we very much appreciate your continued cooperation and willingness in letting us use it. While it is true that our research in this area is beginning to wind down, we cannot determine at this time just when it will conclude. Thus, we do anticipate needing use of the facility for at least five more years. Of course, we will try to adapt to whatever alternative your process leads to.

Thank you again for the use of the facility and for this opportunity to comment.

Sincerely,

Janine E. Powell  
Director

Cc: Terry Williams



Nick\_Rowse@fws.gov  
10/07/2008 03:07 PM

To Rick Sindt <rsindt@fs.fed.us>  
cc  
bcc

Subject Re: Kawishiwi Field Lab

Rick Sindt  
Engineering & Facility Services  
USDA Forest Service  
Northern Research Station  
Northeastern Area State & Private Forestry  
1992 Polwell Ave.  
St. Paul, MN 55108

Dear Rick:

This responds to your request for information on preparing an Environmental Assessment (EA) to evaluate the viable alternatives for permanent disposition of its buildings at the Kawishiwi Field Laboratory. Recently the gray wolf has been relisted in northern Minnesota as threatened due to a recent U.S. District Court decision, which vacated the Service's decision to delist the gray wolf in 2007. However, our records indicate there are no federally listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project. If project plans change, additional information on listed or proposed species becomes available, or new species are listed that may be affected by the project, consultation should be reinitiated. This concludes section 7 consultation for proposed construction at the above location. Thank you for your cooperation in meeting our joint responsibilities under section 7 of the Endangered Species Act. If you have any further endangered species questions, please contact me at (612) 725-3548 x2210.

Nick Rowse  
Fish and Wildlife Biologist  
Twin Cities ES Field Office  
U.S. Fish and Wildlife Service  
4101 American Blvd. E.  
Bloomington, MN 55425-1665  
612-725-3548 x2210



**MINNESOTA HISTORICAL SOCIETY**  
**State Historic Preservation Office**

December 20, 2006

Mr. Richard Sindt  
Station Engineer  
Northern Research Station  
1992 Folwell Avenue  
St. Paul, MN 55108

Re: Possible disposition of the buildings at the Kawishiwi Field Laboratory  
Fall Lake Twp., Lake County  
SHPO Number: 2007-0668

Dear Mr. Sindt:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800).

As your notice indicates, the Halfway District Office complex meets the criteria of the National Register of Historic Places. Your transmittal indicates that the specific future alternatives for conveyance of this property area are not developed at this point. It also indicates that the land will remain in the ownership of the Forest Service.

It is important that alternatives that preserve the historical integrity of the property are developed and investigated. Moving the buildings to new locations would likely result in the loss of eligibility of the complex. It is not clear if the Forest Service intends to consider an alternative that would include retention of Forest Service ownership of the land, with potential long-term lease(s) of the buildings. Such an alternative, with appropriate planning, could retain the historical integrity of the complex. There may be other alternatives as well.

We note that our previous correspondence with the Forest Service (17 April 2001) indicated the need for clarification of the appropriate boundaries for the National Register determination. We would recommend that this issue be addressed at the earliest stage of the planning process for this proposal.

We look forward to working with you as this proposal proceeds. Contact me at 651-259-3456 with any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dennis A. Gimmestad'.

Dennis A. Gimmestad  
Government Programs & Compliance Officer

cc: Walt Okstad, USDA-FS

345 Kellogg Boulevard West/Saint Paul, Minnesota 55102-1906/Telephone 651-296-6126



## MINNESOTA HISTORICAL SOCIETY

## State Historic Preservation Office

June 3, 2008

Mr. Richard Sindt  
Environmental Engineer  
Northern Research Station  
1992 Folwell Avenue  
St. Paul, MN 55108

Re: USDA Forest Service Northern Research Station to dispose of its buildings at the  
Kawishiwi Field Laboratory, Superior National Forest  
Fall Lake Twp., Lake County  
SHPO Number: 2007-0668

Dear Mr. Sindt:

Thank you for your recent letter regarding the above referenced proposed undertaking.

We previously commented on this proposal in a letter of 20 December 2006 to your office. The concerns we expressed in that letter still apply, and a copy of that letter is attached.

One of the issues we raised in that letter (also expressed in an earlier letter of 17 April 2001) focused on the need for clarification of appropriate boundaries for the National Register determination. We recommended that this issue be addressed at the earliest stage of the planning process. The site map included with your recent letter illustrates buildings that are "under consideration for historical significance" and buildings that are "not historically significant". This categorization does not adequately address our expressed concerns or the requirements of the Section 106 review. Previous studies of this area have resulted in a determination that the area meets National Register criteria as a historic district. The boundaries of this district need to be delineated, taking into account not only the individual buildings, but also other topographic and landscape features that define the historic property. Then, the elements within this district need to be classified as "contributing" or "non-contributing". It is important that individual buildings considered to be "not historically significant" be categorized as "non-contributing" elements within the historic district. Appropriate treatment of these buildings within a historic district may need to be addressed as part of any treatment strategies.

Certain alternatives may need to incorporate measures to address archaeological concerns, even though the land will remain under FS ownership.

Please consider the other issues we raised in our 20 December 2006 letter as well.

Contact us at 651-259-3456 with questions or concerns.

Sincerely,

Dennis A. Gimmestad  
Government Programs & Compliance Officer

cc: Wait Okstad, USDA-FS

enclosure: 20December 2006 letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
77 West Jackson Boulevard  
Chicago, IL 60604

Mr. Richard D. Sindt  
USDA Forest Service  
Northern Research Station  
1592 Folwell Ave  
St. Paul, MN 55108

Date: June 21, 2007

**Document: Scoping Report for the Environmental Assessment of the Kawishiwi Field Laboratory Building Disposition, federal agency: USDA/USFS letter dated April 3, 2007**

Dear Mr Sindt:

The NEPA Implementation Section has received the document listed above. Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. EPA reviews and comments on major federal actions. Typically, these reviews focus on Environmental Impact Statements, but we also have the discretion to review and comment on other environmental documents prepared under NEPA if interest and resources permit.

We did not undertake a detailed review of the document you sent to this office, and will not be generating comments because of the reason selected below.

- The document was not prepared under NEPA.
- The document was given a cursory review, but other workload priorities precluded us from detailed review and comment.
- The document was given a cursory review, and we determined that there were no significant concerns meriting comment.
- We opted to wait for the next level of documentation on this project before deciding whether or not to comment.

We reserve the right to reconsider undertaking a review at future planning stages, or if significant new data on the project is made available by the sponsoring agency or other interested parties. If you have any questions, please call Julie Guenther, of my staff, at 312-886-3172 or e-mail her at [guenther.julia@epa.gov](mailto:guenther.julia@epa.gov). Thank you for providing information on the project.

Sincerely,

Kenneth A. Westlake, Chief  
NEPA Implementation Section  
Office of Enforcement & Compliance Assurance

## **Appendix B**

### Scoping Report

**Due to the size of the scoping report, it is attached to this document as a stand-alone document.**

## **Appendix C**

Halfway Ranger Station Historic District

Section 106 Resource and Boundary Delineation Report

**Due to the size of the Section 106 Resource and Boundary Delineation report, it is attached to this document as a stand-alone document.**