

## Appendix B – Past, Present, and Reasonably Foreseeable Actions Relevant to the Cumulative Effects Analysis

The resource analyses provided in Chapter 3 use this information in the cumulative effects analysis. Instead of listing these projects numerous times under each resource section, they are provided here and resource analyses will refer back to this section.

### Cumulative effects area of analysis

The cumulative effects area of analysis varies by resource area. See each resource section for definition of cumulative effects analysis area.

### Past, present, and reasonably foreseeable actions

The interdisciplinary team has made the following assumptions about activities on private, state or federal lands that may influence cumulative effects analysis for this project:

1. Drilling for mineral exploration is most likely to cause cumulative impacts for this project because drilling could cause a possible overlap in noise effects, and could contribute to cumulative temporary road quantity and use.
2. Vegetation management projects could affect cumulative temporary road construction and use as well as contribute to noise effects.
3. Increased recreation activity levels could add to annoyance/effects to solitude.

### Minerals management projects on National Forest System land.

Current and past prospecting and lease activities on Federal and non-federal lands are displayed in Figure B-1. Minerals related projects are labeled on the map corresponding to the descriptions listed below.

The following list includes current and proposed minerals management projects on the SNF. The exploration projects are anticipated to construct about 10 miles or less of temporary access roads. Temporary roads are not authorized for use by the public, and a relatively low amount of traffic comprised of vehicles conducting resource management would be on these roads. The effects from these projects are considered in the appropriate cumulative effects sections of Chapter 3.

- Encampment Minerals Inc. - Permitted. Federal Minerals. Drilling. T62N R11W Sec 25, T61N R11W Sec 2, 10 Revised Kawishiwi EA project. 44 drill holes, 2.5 miles of temporary road construction permitted. 6 sites drilled with 0.34 miles of temporary road construction completed. Reclamation of completed drill sites and temporary roads completed by April 2010.
- Twin Metals Minnesota LLC - Permitted. Federal minerals. Drilling. Kawishiwi EA project. T61N, R11W, Sec.4 and 8 and T62N, R11W, Sec. 33, 34, and 35. 10 core drilling sites and 1.1 miles of temporary road construction permitted. 4 sites have been completed including interim site reclamation and temporary road closure.

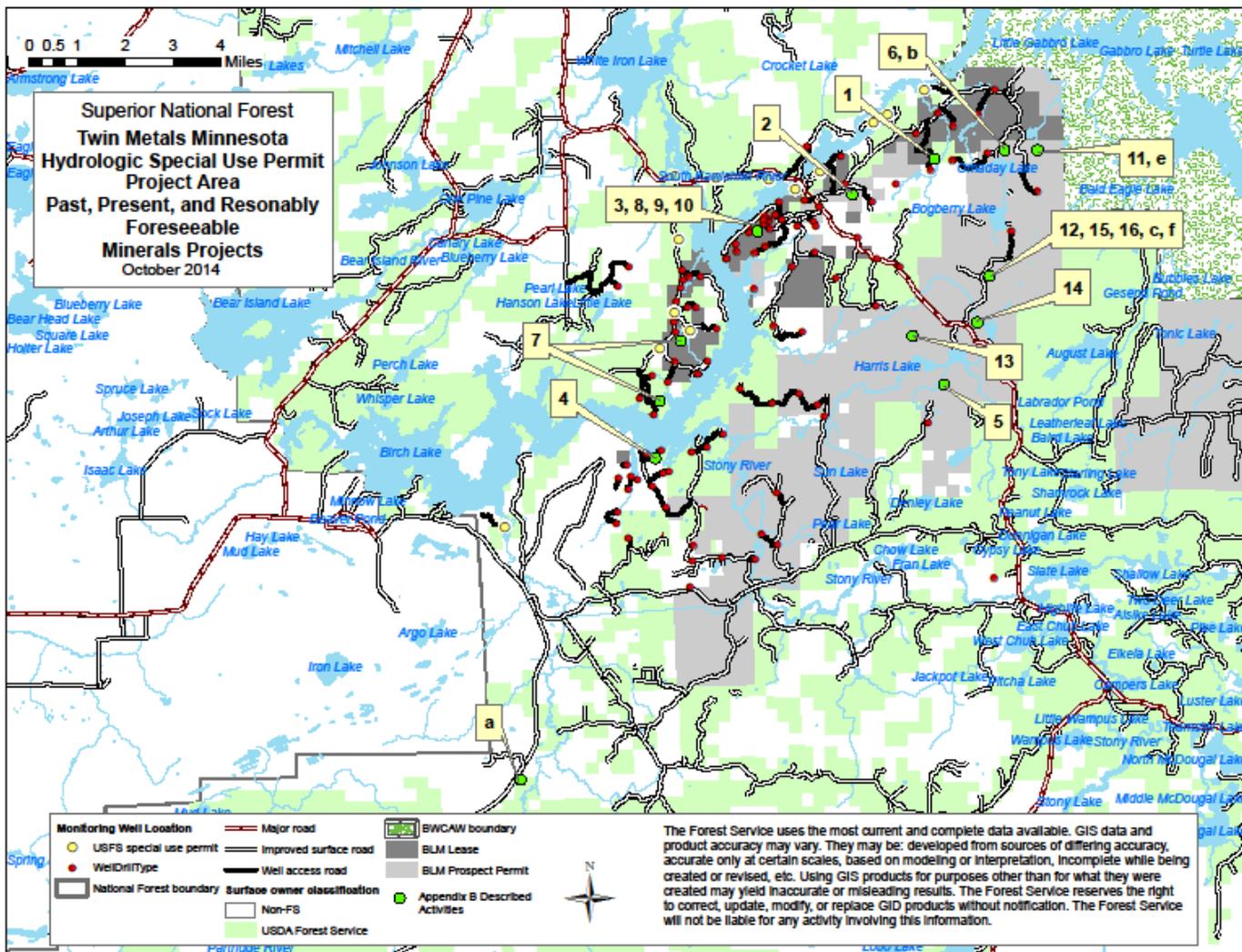


Figure B-1. Current and past prospecting and lease activities on Federal and non-federal lands

- Franconia Minerals Corporation - Permitted. Federal minerals. Drilling. Kawishiwi EA project. T61N, R11W, Sec 5 and 6, T62N, R11W, Sec. 32. 11 core drilling sites and 2.1 miles of temporary road construction permitted. 11 sites have been completed including interim site reclamation and temporary road closure.
- Franconia Minerals Corporation - Permitted. Outstanding Minerals. Birch Lake. T61N, R12W, Sec 25, Lots 5&6. 1 core drilling site and associated temporary road access. Company has completed work on this project. Reclamation is currently being completed.
- Cold Springs Granite Company- Permitted. Mesabi Black Granite quarry. Five year mineral material contract. Contract renewed on June 15, 2010. Estimated production over the term of the contract is expected around 550,000 cubic feet of dimension stone valued at \$481,750.00.
- Ramasa Exploration Project by Duluth Metals Corp. (DMC); 2012-13: T62N, R10W, Sec. 29 and 30. Four drill pads constructed 12 core holes, and no new access road construction. Total disturbance of 0.56 acres approximately 4.0 miles north of the project boundary.
- TMM Maturi SW project; 2012-13: included the drilling of 53 core holes, 4 wedge offsets, the construction of 3.3 miles of new access road, and a total pad construction disturbance of 2.41 acres on federal (1352) and State/private mineral leases. Location: T61N R11W, sec. 7; T61N R12W, sec. 24.
- TMM Fence Drilling Project; 2013: included the drilling of 35 core holes, revisiting of three existing drill pads, the construction of one new drill pad, and no new access road construction on SKA property within Federal lease 1352.
- TMM Angle Drilling Project; 2013: the full extent of this drilling program is unknown however; records exist of one core hole taken from a pre-existing drill pad on state surface to intersect minerals within Federal lease 1352.
- TMM Hydrologic Screening Project; 2013: included the reoccupation of existing borings for the purposes of testing the permeability of fracture zones observed in previous geophysical studies. Location: on Federal lease 1352 and SKA property.

#### INCO Maturi Shaft and Bulk Sample

In 1967-1968 the International Nickle Company (INCO) excavated an exploration shaft at what is known as the Maturi Site at the end of FR 1900 near No's 3, 8, 9, and 10 on Figure B-1. The purpose of the shaft was for excavating a bulk sample of mineralized rock from the Maturi Deposit. The shaft is 1,095 feet deep with two exploration drifts on the 1,000-foot level. As a result of activities at the site, "development" or waste rock extracted from the shaft was left at the site surrounding the shaft. Reclamation of the site consisted of sealing the shaft collar and spreading overburden across the waste rock piles adjacent to the shaft.

During the fall of 2013, at the request of the Bureau of Land Management, the Superior National Forest, and the Minnesota Department of Natural Resources, TMM conducted an initial evaluation of the development rock to analyze it for geochemical characteristics to evaluate its environmental stability. The evaluation consisted of samples taken from eleven sites around the shaft using an excavator. The results did not indicate any potential issues at this time. Further evaluation may take place in the future.

#### INCO Spruce Road Bulk Sample

In 1973 INCO collected a 10,000 ton bulk sample from what is known as the Spruce Road Bulk Sample site. The site is located east and adjacent to FR 181F at the intersection with the Spruce Road, a surface pit approximately 100 feet by 150 feet and 18 feet deep was excavated for the removal of a bulk sample of mineralized rock from the Spruce Road Deposit. The pit was reclaimed with a glacial till cap and now has grass and a few small trees growing on the surface.

On May 18, 2012, a Record of Decision (ROD) was signed for the Federal Hardrock Minerals Prospecting Permit EIS (PPEIS). This EIS analyzed future hardrock minerals exploration throughout the SNF, gave Forest Service consent, and provided stipulations to the Bureau of Land Management (BLM) for the issuance of 28 federal hardrock mineral prospecting permits, 21 operating plans, and three special use permits needed for access and road construction. The cumulative ground disturbance listed in the ROD is comprised of 1,131 acres for pad, geophysical line, access road, barge landings, landing pad construction, and 20.9 acres for three special use permits. The project area includes all federal owned lands over federally owned mineral rights within the proclamation boundary of the SNF excluding areas not open for mineral prospecting such as the BWCAW and mining protection areas as identified in the Forest Plan. The EIS also does not include private mineral exploration notifications that may be received by the SNF. Since the signing of the ROD, the implementation of only four of the operating plans analyzed in the PPEIS, and two amended operating plans, have taken place. In addition to this, one private minerals exploration project was conducted. The recent exploration activities consist of:

- Operating plan for MNES-053868; DMC; 2012-13: three drill pads constructed, 8 core holes, and 0.19 miles of new access road construction. Total disturbance of 0.49 acres. The nearest exploration activity was approximately 3.2 miles north of the project boundary.
- Operating plan for MNES-054037; DMC; 2012-13: five drill pads constructed, 16 core holes, and no new access road construction. Total disturbance of 0.80 acres. The nearest exploration activity was approximately 1.0 miles north of the project boundary.
- Operating plan for MNES-055206; DMC; 2012-13: two drill pads constructed, 6 core holes, and no new access road construction. Total disturbance of 0.20 acres. The nearest exploration activity was approximately 0.1 miles north of the project boundary.
- Operating plan for MNES-055203; DMC; 2012-13: one drill pad constructed, 1 core hole, and no new access road construction. Total disturbance of 0.12 acres. The nearest exploration activity was approximately 0.7 miles north of the project boundary.
- Amended operating plan for MNES-054037; DMC; 2012-13: three drill pads constructed, 7 core holes, and 0.26 miles of new access road construction. Total disturbance of 0.45 acres. The nearest exploration activity was approximately 1.0 miles north of the project boundary.
- Amended operating plan for MNES-054037; DMC; 2013: project consisted of an Induced Polarization geophysical survey. No ground disturbing activities occurred on this project. The nearest exploration activity was approximately 1.9 miles north of the project boundary.

#### Present

Currently, there are no mineral exploration activities occurring within, or near, the Project Area on SNF lands; however, a number of operating plans have been approved for minerals exploration operations on lands proximal to the north and west boundaries of the project area. For unknown reasons, the companies have not moved towards implementation of those approved operating plans to date; however, it is expected that these exploration operations will take place in the near future. The approved projects consist of:

- a. Rook Property Exploration Project by DMC. Proposal includes one drill pad, one core hole, and approximately 1,200 feet of new access road. The expected exploration activity is within the Project boundary; T60N R12W; sec. 33.
- b. Amendment to Ramasa Exploration Project operating plan by DMC. Proposal includes one drill pad, one core hole, and no new access road. The expected exploration activity is approximately 4.0 miles from the northern boundary of the project area.

- c. Amended operating plan for MNES-054037 by DMC (T-Junction Project). Proposal includes 19 drill pads, 19 core holes, and approximately 6,400 feet of new access road. The expected exploration activity is approximately 1.0 miles from the northern boundary of the project area. Recent conversations with the company have indicated they may begin to implement this project in the spring of 2014.
- d. Amended operating plan for MNES-053868 by DMC. Proposal includes the construction of 306 feet of new access road. The expected exploration activity is approximately 3.8 miles from the northern boundary of the project area.
- e. Amended operating plan for MNES-053868 by DMC. Proposal includes the construction of four drill pads and 1,400 feet of new access road. The expected exploration activity is approximately 2.5 miles from the northern boundary of the project area.
- f. Amended operating plan for MNES-054037 by DMC. Proposal includes the construction of three drill pads and 1,750 feet of new access road. The expected exploration activity is approximately 1.5 miles from the northern boundary of the project area.

### Future

There is a high probability that exploration for hardrock minerals on the federal lands within, and near, the area will continue for years, and most likely for decades to come. On the northern margins of the project boundary, it is reasonably foreseeable that some form of exploration activity will continue within the Kawishiwi Minerals Exploration EA analysis area. Although Duluth Metals has completed their activities permitted under this project (during the winter of 2009-2010), Encampment Minerals has only completed about half of the drill holes they have been permitted for, and TMM will most likely continue to submit amended operating plans for activities analyzed under this EA. There is also high certainty that exploration activities on the 29 prospecting permits, listed in the PPEIS ROD, will continue for years. Currently, the SNF is processing eight new operating plans submitted by Encampment Minerals Inc., and an amended operating plan by DMC, for exploratory drilling near the project area. In total, the proposed activities include the construction of 21 drill pads and approximately 3.1 miles of new access road; these activities are all within six miles of the Project Area. In addition to this, there have been approximately 21 prospecting permit applications received by the BLM for areas within, and near, the Project Area that have not undergone any form of Forest Service review to date. It is expected that hardrock minerals exploration will take place on these lands in the upcoming years, as well as on lands owned by the State of Minnesota and private entities.

Twin Metals hydrogeologic program activities outside of the proposed action will occur on leases, prospecting permits, State, and private lands pending authorizations (if required). A full description of this project is contained in Appendix A and is considered in Chapter 3 cumulative effects sections.

## **Vegetation and Fuels Management Projects**

Vegetation and fuels management activities will continue to affect forest resources over the next 20 years. The Forest Plan (USDA 2004) projected probable timber harvests for the first decade after plan implementation at approximately 131,908 acres and for the second decade at approximately 132,416 acres. This suggests that nearly 30 percent of the 944,908 acres of forest land suitable for timber management may be harvested by 2024. This ongoing industry will continue to have effects over time on transportation through the development of temporary roads and continued improvement and use of existing roads, including noise, vegetation, potential soil erosion, and other resources on the forest. Effects would be avoided, minimized and mitigated through the application of Forest Plan standards and

guidelines and Minnesota Forest Resource Council Guidelines, as disclosed in project EA and EIS documents and in the Forest Plan FEIS.

**Table B-1. Past, present, and reasonably foreseeable future vegetation and fuels management projects near the project area**

Project Name	Decision Date	Project Description
Pearl	Expected 2014	Vegetation management project to move existing forest vegetation condition and transportation system towards the desired conditions stated in the Forest Plan. Activities would be located on NFS lands the Pearl Project Areas which is approximately 3 miles south of Ely in portions of T59-61N, R 9-12W.
Glacier EIS	2009	Vegetation management project to move existing forest vegetation condition and transportation system towards the desired conditions stated in the Forest Plan. The Project Area encompassed NFS land from approximately 5 to 20 miles east of Ely in the vicinity of the Fernberg Road and Highway 1 to include all or portions of sections in T61N R9W, T62N R10W, T63N R11W.
Dunka EA	2005	Transportation actions do not include construction of new roadways. The vegetative management projects include logging and replanting. These are managed through the standards and guidelines of the Forest Plan and the State Best Management Practices
Birch Project EA	2011	This project is being implemented to manage the vegetation and road system in the Birch Project Area towards the desired conditions stated in the Forest Plan. The Project Area is located near Ely, MN and south and west of Ely and project activities could be located on NFS land in portions of T61-63N R11-13W.
NNIP EA	2006	The project controls non-native invasive plants (NNIP) on the Superior National Forest using an integrated pest management approach.
BWCAW NNIP EIS	2013	Proposal for an integrated pest management approach to treat non-native invasive plants beginning with approximately 13 acres of infestations scattered across the 1.1 million acre BWCAW and possibly expanding up to 20 acres over the next 10 years. Location: UNIT - Gunflint Ranger District, Kawishiwi Ranger District, Tofte Ranger District, LaCroix Ranger District. STATE- Minnesota. COUNTY - Cook, Lake, St. Louis. Over 1,000 small treatment sites are located throughout the 1.1 million acre BWCAW, primarily at campsites, portages, and old cabin/resort sites.

## Roads Projects

The Forest Plan predicts that future road development practices Forest-wide include the construction of 82 miles of OML-1 roads for summer use and 167 miles of OML-1 roads for winter use over the next several years.

**Table B-2. Past, present, and reasonably foreseeable future road management projects near the project area**

Project Name	Decision Date	Project Description
FR 424 Reconstruction EA	2009	Minor road realignment, widening, and paving of FR 424 (Denley Road/New Tomahawk Road) and minor ATV/snowmobile trail reroutes on the Stony Spur Trail. Project Area located southeast of Babbitt, MN to include T60N R10-12W.
Travel Management Project	Ongoing 2010	Decommission or add unclassified roads to the national forest transportation system. Designate routes available for travel by OHVs and motor vehicles.
Hwy 1 Reconstruction	Ongoing	Road Improvements to Minnesota State Trunk Highway 1. Projects are being

Project Name	Decision Date	Project Description
	2010	staged into manageable segments by the Minnesota DOT. Past projects (completed work) are on segments of Hwy 1 from Lake County Highway 2 to Ely, MN. Work being planned for 2015 and later is on the segment from Isabella, MN to Lake County Highway 2.
Road decommissioning (various projects)	Ongoing	See Travel Management Project and various Vegetation Management projects.
MN DNR Temporary Winter Road Access to Manage State Lands CE	Expected 2014	Request is for use of an old winter road to provide temporary winter access to State land.

## Recreation Projects

Recreational use of the Forest for winter, water-based, and developed land activities is predicted to grow faster than the population (Cordell's Projections of Outdoor Recreation Participation to 2050, Forest Plan. An indicator of this growth is seen in the 9.3 million Recreational Visitor Days on the Superior National Forest in 2000, up nearly four times than the same measure 3 years earlier. The Forest Plan (USDA 2004) reported that motorized noise-producing recreational activities (e.g., off-road driving, snowmobiling, motorboating) in the Northern Region of the state would increase by 5 to 13 percent by 2020. The continued growth of outdoor recreation use (including several noise-producing activities) both on and off the Forest will continue to rise over the next several years and affect Forest resources and users.

### Prospector Loop Trail

Proposal for a motorized trail connecting Ely, Babbitt, Tower, and Embarrass as well as connections to State Parks (Bear Head Lake, Tower Soudan Mine, and Vermilion) and other attractions to provide recreational benefits. Most of the route already exists as low level roads, ATV trail, or snowmobile trail. Authorization to use some higher level Forest roads currently managed for passenger vehicles and also determining re-routes of existing snowmobile trails to higher ground would be necessary to complete the trail. Within the Project Area the trail would allow mixed use on a segment of FR 181 between the Filson parking area and FR 181K, the Tomahawk snowmobile trail, and the existing Stony Spur ATV/Snowmobile Trail.

### Lake County Trails Comprehensive Plan

This plan (currently a draft) includes proposals for hiking, mountain bike, ski, and ATV trails. Proposals include converting some existing higher level Forest roads to allow ATV traffic or to allow UTVs on existing ATV routes.

### Lake County OHV Plan

This project is in the planning stage involving State, federal, county, private, and non-profit entities. A primary purpose of the plan is to connect North Shore communities to trail systems north of them including access to roads and trails on the Superior National Forest. Project proposal includes a request to the USFS to revisit some decisions made in the Forest-wide Travel Management Project to provide more opportunities for Class II ATVs.

## Special Uses and Land Exchanges

Small special use projects happen on the Forest on a regular basis authorized with a categorical exclusion. These would not contribute to cumulative impacts unless otherwise noted in Chapter 3 since the scale of impact is very small and localized (e.g., a special use permit to access a private inholding).

Land exchanges would not have the potential to contribute cumulative effects unless a change in land use after exchange results in physical impacts to resources. The pending School Trust Land Exchange would have limited and localized changes to physical resources, and is located in the Low Interest minerals areas across the Forest. The Polymet Northmet project was considered by the inter-disciplinary team, but it was beyond the geographic area of impacts from this project, except for water resources where the project is addressed.

## Lands of Other Ownership

All lands within the project area are National Forest System. However, there are lands adjacent and intermixed with the project area, which are under other private, state or federal ownership. Activities on these private, state or federal lands may influence cumulative effects analysis for some resource areas for this project including mining, quarries, mineral exploration, mineral processing plants, timber harvesting, and recreational activities (including motorized and non-motorized uses).

## Cumulative Actions Generating Noise

The following categories of activities generate noise which may impact recreation receptors. See Section 3.1 (Noise) and 3.2 (Wilderness) for more information.

- Drilling on state and private land, and reserved and outstanding minerals on federal land
- Fixed wing aircraft flights used for geophysical surveys for minerals exploration
- Federal, state and private vegetation management projects
- Prescribed burning and wildfire suppression with aircraft, motorboats, generators, etc.
- Fire patrols with aircraft
- Search and rescue missions with aircraft
- Law Enforcement with motorboats and aircraft
- Approved Department of Natural Resources activities with motorboats and aircraft
- Department of Homeland Security border security activities with motorboats and aircraft
- Recreation activities on federal, state, county, and private land
- Vehicle traffic on roads
- Recreational motorized use (watercraft, OHV, snowmobiles)
- Noise generated at or near buildings (generators, leaf blowers, snow blowers, lawnmowers, music, etc)