

Appendix C: Summary Conclusions

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Air	<ul style="list-style-type: none"> ✧ The SNF monitors the effects of air pollution from sources outside the SNF and from SNF management activities, particularly prescribed burning and wildfires. ✧ Overall, air quality monitored at Fernberg in 2006 showed no major changes from that seen over the previous five years. ✧ Smoke monitoring of the Cavity Lake wildfire and Turtle Lake wildfire use fire showed some days with values over the EPA health standard. ✧ Since smoke from prescribed fire can generally be managed to avoid air quality impacts, it is important to complete prescribed fire projects so that large wildfires and their smoke impacts can be prevented. ✧ It will be important to monitor the impacts of proposed industrial projects for the Iron Range on SNF air and water quality.
Fire	<ul style="list-style-type: none"> ✧ Fiscal Year 2006 was an active year for wildfires with seven fires burning approximately 42,003 acres. ✧ During Fiscal Year 2006 within the BWCAW, 3,510 acres of blow-down fuels were intentionally treated and five burn units encompassing 13,426 acres were burned by the Cavity wildfire. As of 2006, 43,279 acres identified for burning by the BWEIS have been completed, which is about 50% of the 84,000 acres scheduled in the BWEIS. ✧ The completed prescribed fire units did reduce and in some cases prevented the Cavity wildfire from spreading from the BWCAW into areas of urban interface and across the border into Canada. ✧ Monitoring findings did validate that mitigations outlined in the BWEIS and Burn Plans were successful in protecting the soil organic layer, eagle nests, shoreline old forest, and interior old forest from impacts by prescribed fire. ✧ The preponderance of fire in blow-down demonstrates the continued high fire risk of these fuels 7 years following the 1999 windstorm. This risk is further enhanced by conifer succession, particularly increased balsam fir and spruce budworm infestations. ✧ Increase prescribed fire within red & white pine forest to promote seedling establishment ✧ Community Wildfire Protection Plans were completed for Cook and Lake counties and initiated for St. Louis county.
Heritage	<ul style="list-style-type: none"> ✧ Approximately 24,000 acres were inventoried for heritage resources resulting in the documentation 6 new sites. ✧ 114 previously inventoried heritage sites, 12 eligible sites open to public interpretation, and 12 burial sites were monitored. ✧ 3 sites associated with a Passport in Time (PIT) project were evaluated. ✧ Ensure heritage mitigation measures are effective within heavily used recreation areas across the SNF (including the BWCAW). Heritage site monitoring over time indicates some heritage sites are being affected by recreation use, especially on campsites subject to extremely heavy visitor use.
Insects & Disease	<ul style="list-style-type: none"> ✧ A significant increase in spruce budworm population was observed with much of the infestation occurring within the BWCAW. This insect defoliated 114,817 acres during 2006 which is an increase from 92,500 acres defoliated in 2005. ✧ Approximately 640 acres of reproducing gypsy moth populations were treated and eradicated. In addition approximately 133,000 acres were treated with the pheromone <i>Disparlure</i>. ✧ Vegetation manipulation was used extensively to mitigate potential insect and disease impacts. Practices implemented included the planting of 1,218,000 native conifer seedlings on 2,318 acres, seeding 57 acres to conifer species, and improving 4970 acres through TSI treatments. ✧ Continue to conduct annual aerial insect and disease surveys and “trapping” techniques to monitor introduction or progress of invasive insect and diseases especially gypsy moth and emerald ash borer.

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Lands	<ul style="list-style-type: none"> * One 43 acre property valued at \$240,000 was purchased. * One land exchange was completed whereby 720 acres of federal land were exchanged for 760 acres of non-federal land. * Through the Pilot Conveyance law, seven properties totaling 16.16 acres of land with structures were sold for \$770,000. * Research and data collection as part of the Thye-Blatnick Act to appraise Federal lands within the BWCAW was initiated. * The Trust for Public Land (TPL) secured three parcels (Long Island, Chain Saw Sisters, & Clarke properties).
Minerals & Geology	<ul style="list-style-type: none"> * Federal mineral operations, which are permitted and administered by the Bureau of Land Management, were found to be in compliance and no notices of noncompliance were issued. * Permits applications, expirations, and relinquishments accomplished in 2006: (a) 25 Prospecting Permit Applications, (b) 5 prospecting permits issued encompassing 12,083 acres. (c) 3 prospecting permits expired (d) 9 prospecting Permit Relinquished (e) 2 Hardrock Mineral leases on 4,944 acres issued. * A total of 9,612 tons of granite from two quarries were sold at \$90,330. * A total of 196,121 tons of sand and gravel was sold for \$48,663. * A total of 7,588 tons of mineral materials were utilized by the SNF for administrative purposes for a total value of \$5,149, * A framework for managing federal minerals with the BLM is needed to improve the permitting process and to guide how the two agencies cooperatively work together.
Non Native Invasive Species	<ul style="list-style-type: none"> * Approximately 2,025 acres of terrestrial Non Native Invasive Plant Species (NNIS) and six lakes infested with spiny water flea occur on the SNF. * Seven prevention/education measures were implemented. * Approximately 20 acres of terrestrial NNIS were treated, up from 8 acres treated during 2005. * Despite an increase in documented terrestrial plant infestations since 2004, the rate of treatment is greater than the rate of NNIP increase. * New and existing spiny water flea populations on the SNF suggests that this species current rate of invasion is likely increasing. * The number of lakes where rusty crayfish has been detected has increased each year since 2003 and it is likely that new infestations will be documented with increased survey and monitoring. * There were no aquatic NNIS populations contained or eradicated in 2006.
Public Health	<ul style="list-style-type: none"> * Monitoring for Potable Water bacteria and nitrates was done monthly at public and administrative facilities. All nitrate samples and over 98% of bacteria (total coliform) samples were found acceptable. * Four swimming beach samples were collected and analyzed in 2006. One sample registered a bacteria presence (Lake Leander) but was below the standards for posting.
Recreation Motor Vehicles	<ul style="list-style-type: none"> * During FY 2005 and 2006, four projects made decisions to designate approximately 37 miles of road open to RMV travel and 71 miles of roads closed to RMV through closure or decommissioning. * As a percentage of roads visited, RMV use on closed roads is similar between 2005 and 2006, while the percentage of user created trails encountered was down during 2006 compared to 2005 (44% in 2005 compared to 31% in 2006). * All of the road spurs found inside the BWCAW originated from an older established road that was apparently associated with older timber sales or other access purposes.
Socio-Economic	<ul style="list-style-type: none"> * Total expenditures (funding) for FY 2006 were about \$27,059,000 which represents a 13% increase from the 2005 budget of \$23,720,000. * During 2006, the ratio of sold sawtimber to pulpwood was 15:85. This compares to the FY 2004 ratio of 11:89 and the FY-2005 ratio of 10:90.

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Soils	<ul style="list-style-type: none"> * Project level monitoring included: (a) assessing fire effects on the soil organic layer associated with prescribed fire and wildfire in the BWCAW (b) logging impacts to shallow ELT 18 sites particularly within the Echo Trail and Dunka project areas (c) effects of biomass removal from the Old Root, Pitcha, and Upper Caribou biomass harvest sites (d) compliance with Minnesota Forest and Resource Council Voluntary Forest Harvest Guidelines. * Watershed restoration occurred as part of the Birch Lake Centennial Projects. These projects achieved watershed improvement, recreation site improvements, restoration of riparian habitat, and soil improvement in a unique and integrated manner. * Preliminary prescribed fire monitoring suggests overall good retention of organic matter. * Where fuel loads are high and during extreme drought soil moisture conditions, wildfires are likely to severely impact soil resources. * Tentative monitoring results showed that the Ecological Classification System mapping units (Ecological Land Type polygons) have a high degree of reliability. * MFRC Voluntary Guideline Monitoring on one site revealed rutting from unauthorized ATV use on a road segment with active erosion allowing sediment to reach a wetland. * Soil monitoring should also occur for other management activities such as timber harvest, ATV road use, site preparation, and long term vegetation composition on nutrient sensitive sites.
Timber	<ul style="list-style-type: none"> * FY 2006 had the highest volume sold and under contract since the Revised Forest Plan was approved. However volume harvest was least in 2006 because of a major downturn in the timber market. The Forest had eight sales that received no bids which amounted to 22.7 MMBF. * The SNF awarded 57,295 MMBF within twenty timber sales on 6088 acres but <i>actually</i> harvested 32,445 MBF on 4049 acres. * To date 8,369 acres or 6% of the projected Forest Plan Decade 1 acres and 81,035 MMBF or 8% of the projected Decade 1 volume has been harvested since 2004. * When vegetative treatments planned in approved 2005 and 2006 project decisions are fully implemented, a total of 36,000 acres or 27% of Forest Plan Decade 1 projections and 229 MMBF or 22% of Decade 1 will have been achieved * During 2006 4,629 acres were certified and 3,672 acres harvested but not certified. * During 2006 approximately 60% of vegetative treatments were clearcut compared to 88% clearcut during 2005. When treatments planned within approved 2006 decisions are included with actual treatments, the estimated percent of vegetation treatments being clearcut drops to 59% which is trending towards the Decade 1 projection of 63% acres treated to be clearcut. * Neither treatments within actual harvest units nor harvest treatments combined with adjacent existing young stands created young patches that approach 1000 or even 300 acres. However when approved 2005 decisions are implemented, 8 patches greater than 300 acres will be created for a total of 4218 acres. * Approximately five applicable Standards and Guides were monitoring during 2006 and all were successfully met and addressed environmental effects as predicted. * There is a need to Improve data collection and data management during NEPA project planning because insufficient data collection and field reconnaissance during the NEPA analysis has resulted in actual treatment acreage 20-25% less than planned.
Transportation	<ul style="list-style-type: none"> * Unclassified road mileage increased 61 miles since FY 2005 due to discovery of previously unknown unclassified roads. * National Forest System OML 1 and 2 roads increased 83 miles since 2004 largely due to the designation of unclassified roads to System roads and not new construction. This increase in OML 1 and OML 2 road mileage achieves approximately 30% and 102% of Decade 1 projected conditions respectively. * Three miles of National Forest System road were actually decommissioned and approximately 63 miles of roads approved for decommissioning but not yet implemented were identified in four Decision Documents. The miles of roads decommissioned and approved to be decommissioned represents 75% of the 83 miles projected by the end of Decade 1. * Monitoring revealed that road decommissioning practices and procedures have been effective at re-vegetation and prevention of unwanted motorized use.

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Tribal Rights & Interests	<ul style="list-style-type: none"> * Project consultation and government-to-government contacts were made in the following programs, projects and incidents: the Forest Heritage Program, Burial Sites, Big Rice Wild Rice Meeting, Moose Lake Access, Walleye Assessment on Cadotte Lake, East Zone Travel Management project, Regional Forester Sensitive Species surveys, Non-native Invasive Plant Management EA, South Fowl Trail and Vegetable Chain projects, Devil Trout Vegetation Management project, Chikwauk PIT project, Sand Lake PIT project and archeological excavation, Echo Trail project, Whyte project, and Air Quality project.
Vegetation	<ul style="list-style-type: none"> * Preliminary results, while mixed, indicate that vegetation conditions across the SNF are generally moving towards the desired Forest Plan objectives. Possible exceptions pertaining to vegetative composition include; <ul style="list-style-type: none"> o Within the Mesic Red and White Pine LE, the Northern hardwoods forest type may exceed Decade 1, 2 and Long-term (100 yr) objectives. The forest type would be 3% instead of 2% at this time. o Within the Jack-Pine Black Spruce (JPB) LE, the White pine forest type is likely to exceed Decade 1, 2 and Long-term (100 yr) objectives. The forest type would only be 4% instead of 3% at this time. * Within the Red/White Pine Mature Forest, the acreage of patches greater than 300 acres increased from 6,000 acres in 2005 to 7,061 acres in 2006. * Within zone 1, the number of 1,000 acre patches reported in 2006 was 5, which is three less than the Forest Plan guideline of eight patches. * Within zone 2, Forest Plan direction is to maintain 1 patch at 11,700 acres which occurred in 2004. Current condition shows this patch has been fragmented to less than 10,000 acres due to gaps caused by environmental occurrences including wind and fire damage. * Continue to integrate the Native Plant Community Classification concept into inventory efforts on the Forest. In 2006, this classification option was integrated into the Field Sampled Vegetation database, a Forest Service-wide application.
Watershed	<ul style="list-style-type: none"> * Stream monitoring reaches were established at 18 sites on 20 streams and rivers. * Road/stream crossing surveys were completed at 139 locations. * 10 road/stream crossing sites were restored. * Within the Dark River where large woody debris structures were increased stream bed scouring and gravel deposition were documented. Fish population surveys indicated that brook trout abundance had increased from 2005. * 2 groups of lakes were monitored. 1st group; baseline fire effects on lake chemistry & fish mercury were sampled continuing a study began in 04. A 2nd group of lakes was sampled to document long term changes in lake chemistry. * The SNF assisted researchers from the MN DNR and other organizations in sampling game fish and loons for mercury contamination. * Results of MFRC implementation auditing of FY 06 timber sales demonstrate good use of appropriate BMPs. In particular water quality Best Management Practices (BMP's) were found to be successfully implemented. * Update the upland young/upland open analysis for the entire SNF every three years. * Encourage vegetation management decisions include proactive riparian management, particularly in the near-bank zones.
Wilderness	<ul style="list-style-type: none"> * Due to extra funding and newly created or enacted management plans, the Superior National Forest is at 57% of the wilderness stewardship level. The SNF plans to improve its stewardship level to above 60% after 2007 due to advances in Element 2 – Non-native, Invasive Plants.
Wildlife, Sensitive Species, Aquatic.	<ul style="list-style-type: none"> * The SNF completed several stream habitat restoration and monitoring projects that directly or indirectly benefited Regional Forester Sensitive Species (RFSS) including the restoration of 10 road and trail stream crossings and habitat surveys of 28 sites along the Dark River. * Monitor established long term stream monitoring sites at least once every 3-5 years. * Update the upland young/upland open analysis for the entire SNF every three years

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Wildlife, Sensitive Species, Plants.	<ul style="list-style-type: none"> * During 2006 Forest Plan direction for sensitive plants was being met. * Some of the sensitive vascular plants and most of the non-vascular plants have about the same number of occurrences in 2006 as in 2004. * Transplanting <i>Botrychium</i> worked, but not very well, and should be avoided as a mitigation measure unless no other choices exist. * Preliminary results suggest that spring burning has a neutral effect on some species of <i>Botrychium</i>.
Wildlife, MIH, Aquatic Species.	<ul style="list-style-type: none"> * The Superior National Forest and other agencies assessed lake and stream fish populations within the Dark River and two lakes (Crooked and Fourmile Lakes). Surveys indicate that stream brook trout populations have remained relatively stable, walleye population in Crooked Lake had changed little since 2002 and walleye abundance in Fourmile Lake had increased substantially. * Working with the Minnesota Department of Natural Resources, Fond Du Lac Band of Lake Superior Ojibwe, and the 1854 Tribal Treaty Authority has increased the SNF's ability to monitor management indicator habitats as well as important lake and stream fish populations. * The strategies recently developed to monitor lake and stream habitat restoration projects (7 road/stream crossings) have been very successful. * Monitoring associated with the Dark River Habitat Restoration Project should continue every 2-3 years.
Wildlife, Terrestrial, Management Indicator Habitats.	<ul style="list-style-type: none"> * The amount, spatial distribution, and trend of MIHs 1-9 were monitored primarily by measuring forest vegetation conditions. * In 2006, the SNF made the assumption that there has been no significant change in species' populations or to environmental impacts assessed through the Revised Forest Plan due to SNF management in the first two years of implementation. * On an annual to five year basis the SNF and its partners are continuing to actively monitor or inventory a wide array of species including (1) <i>Breeding forest birds</i> (2) <i>Terrestrial game species</i> (3) <i>Frogs & Toads</i> (4) <i>NNIS</i> (5) <i>RFSS</i> and (6) <i>T&E Species</i>. * For most of the MIHs, conditions are trending toward Forest Plan objectives and Forest Plan EIS expected conditions analyzed in EIS Chapter 3.3.1. Therefore, management actions in the first two years of implementation for these MIHs are consistent with Forest Plan direction and the extent to which conditions are moving toward objectives is acceptable. * There are young, Mature & Old/Old Growth, and Multi-aged Forest MIHs where current trends are not moving toward LE objectives for the first decade of Forest Plan implementation but these increases do not present a detectable concern at Year 2 of Forest Plan implementation